

Subtype Thermia Legend 8

Certificate Holder	Thermia
Address	Snickaregatan 1
ZIP	
City	Arvika
Country	SE
Certification Body	RISE CERT
Subtype title	Thermia Legend 8
Registration number	012-C700232
Heat Pump Type	Brine/Water and Water/Water
Refrigerant	R452B
Mass of Refrigerant	0.85 kg
Certification Date	19.02.2024
Testing basis	EN 14511:2018, EN 14825:2018, EN 12102:2017.
Testing laboratory	RISE Research Institutes of Sweden

**Model Thermia Legend 8 400V**

Model name	Thermia Legend 8 400V
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	3x400V 50Hz
Off-peak product	Yes

**Brine/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.35 kW	6.84 kW
El input	1.59 kW	2.41 kW
COP	4.62	2.81

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	191 %	140 %
Prated	7.97 kW	8.62 kW
SCOP	4.96	3.70
Tbiv	-8 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.36 kW	6.91 kW
COP Tj = -7°C	4.72	3.04
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	7.43 kW	7.15 kW
COP Tj = +2°C	4.95	3.73
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.49 kW	7.23 kW
COP Tj = +7°C	5.22	4.12
Cdh Tj = +7 °C	0.995	0.996

Pdh Tj = 12°C	7.55 kW	7.34 kW
COP Tj = 12°C	5.50	4.52
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.36 kW	6.96 kW
COP Tj = Tbiv	4.68	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.62 kW	1.77 kW
Annual energy consumption Qhe	3318 kWh	4812 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	196 %	144 %
Prated	8.25 kW	8.27 kW
SCOP	5.10	3.80
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.44 kW	7.09 kW
COP Tj = -7°C	5.01	3.56
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	7.49 kW	7.21 kW
COP Tj = +2°C	5.24	4.02
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.53 kW	7.30 kW
COP Tj = +7°C	5.43	4.40
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	7.54 kW	7.38 kW
COP Tj = 12°C	5.47	4.64
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.39 kW	6.96 kW
COP Tj = Tbiv	4.80	3.22

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.90 kW	1.41 kW
Annual energy consumption Qhe	3989 kWh	5356 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	193 %	140 %
Prated	8.61 kW	8.08 kW
SCOP	5.02	3.71
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.35 kW	6.85 kW
COP Tj = +2°C	4.62	2.82
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	7.42 kW	7.03 kW
COP Tj = +7°C	4.93	3.39
Cdh Tj = +7 °C	0.995	0.997
Pdh Tj = 12°C	7.51 kW	7.26 kW
COP Tj = 12°C	5.33	4.24
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.38 kW	6.93 kW
COP Tj = Tbiv	4.79	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W

PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.26 kW	1.23 kW
Annual energy consumption Qhe	2293 kWh	2909 kWh

**Water/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.32 kW	8.81 kW
El input	1.61 kW	2.46 kW
COP	5.78	3.59

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	243 %	180 %
Prated	10.13 kW	10.59 kW
SCOP	6.28	4.69
Tbiv	-8 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.35 kW	8.92 kW
COP Tj = -7°C	5.95	3.88
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	9.43 kW	9.16 kW
COP Tj = +2°C	6.27	4.70
Cdh Tj = +2 °C	0.995	0.997
Pdh Tj = +7°C	9.50 kW	9.30 kW
COP Tj = +7°C	6.62	5.26
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.55 kW	9.42 kW
COP Tj = 12°C	6.96	5.89
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.96 kW
COP Tj = Tbiv	5.90	4.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.78 kW	1.78 kW
Annual energy consumption Qhe	3332 kWh	4665 kWh

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	250 %	185 %
Prated	10.49 kW	10.69 kW
SCOP	6.46	4.84
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.45 kW	9.12 kW
COP Tj = -7°C	6.36	4.53
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	9.51 kW	9.28 kW
COP Tj = +2°C	6.65	5.15
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	9.54 kW	9.39 kW
COP Tj = +7°C	6.87	5.70
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.54 kW	9.46 kW
COP Tj = 12°C	6.92	6.15
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.38 kW	9.00 kW
COP Tj = Tbiv	6.07	4.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.14 kW	1.88 kW

Annual energy consumption Qhe	4001 kWh	5449 kWh
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**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
$\eta_s$	246 %	181 %
P <sub>rated</sub>	10.07 kW	10.43 kW
SCOP	6.34	4.73
T <sub>biv</sub>	3 °C	4 °C
TOL	2 °C	2 °C
P <sub>dh Tj = +2°C</sub>	9.35 kW	8.81 kW
COP T <sub>j</sub> = +2°C	5.82	3.59
C <sub>dh Tj = +2 °C</sub>	0.996	0.997
P <sub>dh Tj = +7°C</sub>	9.41 kW	9.06 kW
COP T <sub>j</sub> = +7°C	6.19	4.32
C <sub>dh Tj = +7 °C</sub>	0.996	0.997
P <sub>dh Tj = 12°C</sub>	9.52 kW	9.35 kW
COP T <sub>j</sub> = 12°C	6.73	5.47
C <sub>dh Tj = +12 °C</sub>	0.995	0.996
P <sub>dh Tj = T<sub>biv</sub></sub>	9.35 kW	8.94 kW
COP T <sub>j</sub> = T <sub>biv</sub>	5.92	3.94
P <sub>dh Tj = TOL or P<sub>dh Tj = T<sub>designh</sub></sub> if TOL &lt; T<sub>designh</sub></sub>	9.35 kW	8.81 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	5.82	3.59
C <sub>dh Tj = TOL or P<sub>dh Tj = T<sub>designh</sub></sub> if TOL &lt; T<sub>designh</sub></sub>	0.996	0.997
WTOL	65 °C	65 °C
P <sub>off</sub>	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.72 kW	1.62 kW
Annual energy consumption Qhe	2122 kWh	2947 kWh

**Model Thermia Legend 8 Duo 400V**

Model name	Thermia Legend 8 Duo 400V
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	3x400V 50Hz
Off-peak product	Yes

**Brine/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.35 kW	6.84 kW
El input	1.59 kW	2.41 kW
COP	4.62	2.81

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	44 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	191 %	140 %
Prated	7.97 kW	8.62 kW
SCOP	4.96	3.70
Tbiv	-8 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.36 kW	6.91 kW
COP Tj = -7°C	4.72	3.04
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	7.43 kW	7.15 kW
COP Tj = +2°C	4.95	3.73
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.49 kW	7.23 kW
COP Tj = +7°C	5.22	4.12
Cdh Tj = +7 °C	0.995	0.996

Pdh Tj = 12°C	7.55 kW	7.34 kW
COP Tj = 12°C	5.50	4.52
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.36 kW	6.96 kW
COP Tj = Tbiv	4.68	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.62 kW	1.77 kW
Annual energy consumption Qhe	3318 kWh	4812 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	44 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	196 %	144 %
Prated	8.25 kW	8.27 kW
SCOP	5.10	3.80
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.44 kW	7.09 kW
COP Tj = -7°C	5.01	3.56
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	7.49 kW	7.21 kW
COP Tj = +2°C	5.24	4.02
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.53 kW	7.30 kW
COP Tj = +7°C	5.43	4.40
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	7.54 kW	7.38 kW
COP Tj = 12°C	5.47	4.64
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.39 kW	6.96 kW
COP Tj = Tbiv	4.80	3.22

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.90 kW	1.41 kW
Annual energy consumption Qhe	3989 kWh	5356 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	44 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	193 %	140 %
Prated	8.61 kW	8.08 kW
SCOP	5.02	3.71
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.35 kW	6.85 kW
COP Tj = +2°C	4.62	2.82
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	7.42 kW	7.03 kW
COP Tj = +7°C	4.93	3.39
Cdh Tj = +7 °C	0.995	0.997
Pdh Tj = 12°C	7.51 kW	7.26 kW
COP Tj = 12°C	5.33	4.24
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.38 kW	6.93 kW
COP Tj = Tbiv	4.79	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W

PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.26 kW	1.23 kW
Annual energy consumption Qhe	2293 kWh	2909 kWh

**Water/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.32 kW	8.81 kW
El input	1.61 kW	2.46 kW
COP	5.78	3.59

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	243 %	180 %
Prated	10.13 kW	10.59 kW
SCOP	6.28	4.69
Tbiv	-8 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.35 kW	8.92 kW
COP Tj = -7°C	5.95	3.88
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	9.43 kW	9.16 kW
COP Tj = +2°C	6.27	4.70
Cdh Tj = +2 °C	0.995	0.997
Pdh Tj = +7°C	9.50 kW	9.30 kW
COP Tj = +7°C	6.62	5.26
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.55 kW	9.42 kW
COP Tj = 12°C	6.96	5.89
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.96 kW
COP Tj = Tbiv	5.90	4.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.78 kW	1.78 kW
Annual energy consumption Qhe	3332 kWh	4665 kWh

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	250 %	185 %
Prated	10.49 kW	10.69 kW
SCOP	6.46	4.84
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.45 kW	9.12 kW
COP Tj = -7°C	6.36	4.53
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	9.51 kW	9.28 kW
COP Tj = +2°C	6.65	5.15
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	9.54 kW	9.39 kW
COP Tj = +7°C	6.87	5.70
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.54 kW	9.46 kW
COP Tj = 12°C	6.92	6.15
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.38 kW	9.00 kW
COP Tj = Tbiv	6.07	4.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.14 kW	1.88 kW

Annual energy consumption Qhe	4001 kWh	5449 kWh
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**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
$\eta_s$	246 %	181 %
Prated	10.07 kW	10.43 kW
SCOP	6.34	4.73
Tbiv	3 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	9.35 kW	8.81 kW
COP Tj = +2°C	5.82	3.59
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	9.41 kW	9.06 kW
COP Tj = +7°C	6.19	4.32
Cdh Tj = +7 °C	0.996	0.997
Pdh Tj = 12°C	9.52 kW	9.35 kW
COP Tj = 12°C	6.73	5.47
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.94 kW
COP Tj = Tbiv	5.92	3.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.72 kW	1.62 kW
Annual energy consumption Qhe	2122 kWh	2947 kWh

**Model Thermia Legend 8 230-1**

Model name	Thermia Legend 8 230-1
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 50Hz
Off-peak product	Yes

**Brine/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	7.35 kW	6.84 kW
El input	1.59 kW	2.41 kW
COP	4.62	2.81

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	191 %	140 %
Prated	7.97 kW	8.62 kW
SCOP	4.96	3.70
Tbiv	-8 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.36 kW	6.91 kW
COP Tj = -7°C	4.72	3.04
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	7.43 kW	7.15 kW
COP Tj = +2°C	4.95	3.73
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.49 kW	7.23 kW
COP Tj = +7°C	5.22	4.12
Cdh Tj = +7 °C	0.995	0.996

Pdh Tj = 12°C	7.55 kW	7.34 kW
COP Tj = 12°C	5.50	4.52
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.36 kW	6.96 kW
COP Tj = Tbiv	4.68	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.62 kW	1.77 kW
Annual energy consumption Qhe	3318 kWh	4812 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	196 %	144 %
Prated	8.25 kW	8.27 kW
SCOP	5.10	3.80
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.44 kW	7.09 kW
COP Tj = -7°C	5.01	3.56
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	7.49 kW	7.21 kW
COP Tj = +2°C	5.24	4.02
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.53 kW	7.30 kW
COP Tj = +7°C	5.43	4.40
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	7.54 kW	7.38 kW
COP Tj = 12°C	5.47	4.64
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.39 kW	6.96 kW
COP Tj = Tbiv	4.80	3.22

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.90 kW	1.41 kW
Annual energy consumption Qhe	3989 kWh	5356 kWh

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	193 %	140 %
Prated	8.61 kW	8.08 kW
SCOP	5.02	3.71
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.35 kW	6.85 kW
COP Tj = +2°C	4.62	2.82
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	7.42 kW	7.03 kW
COP Tj = +7°C	4.93	3.39
Cdh Tj = +7 °C	0.995	0.997
Pdh Tj = 12°C	7.51 kW	7.26 kW
COP Tj = 12°C	5.33	4.24
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.38 kW	6.93 kW
COP Tj = Tbiv	4.79	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W

PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.26 kW	1.23 kW
Annual energy consumption Qhe	2293 kWh	2909 kWh

**Water/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	9.32 kW	8.81 kW
El input	1.61 kW	2.46 kW
COP	5.78	3.59

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	243 %	180 %
Prated	10.13 kW	10.59 kW
SCOP	6.28	4.69
Tbiv	-8 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.35 kW	8.92 kW
COP Tj = -7°C	5.95	3.88
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	9.43 kW	9.16 kW
COP Tj = +2°C	6.27	4.70
Cdh Tj = +2 °C	0.995	0.997
Pdh Tj = +7°C	9.50 kW	9.30 kW
COP Tj = +7°C	6.62	5.26
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.55 kW	9.42 kW
COP Tj = 12°C	6.96	5.89
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.96 kW
COP Tj = Tbiv	5.90	4.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.78 kW	1.78 kW
Annual energy consumption Qhe	3332 kWh	4665 kWh

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	250 %	185 %
Prated	10.49 kW	10.69 kW
SCOP	6.46	4.84
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.45 kW	9.12 kW
COP Tj = -7°C	6.36	4.53
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	9.51 kW	9.28 kW
COP Tj = +2°C	6.65	5.15
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	9.54 kW	9.39 kW
COP Tj = +7°C	6.87	5.70
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.54 kW	9.46 kW
COP Tj = 12°C	6.92	6.15
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.38 kW	9.00 kW
COP Tj = Tbiv	6.07	4.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.14 kW	1.88 kW

Annual energy consumption Qhe	4001 kWh	5449 kWh
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**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
$\eta_s$	246 %	181 %
P <sub>rated</sub>	10.07 kW	10.43 kW
SCOP	6.34	4.73
T <sub>biv</sub>	3 °C	4 °C
TOL	2 °C	2 °C
P <sub>dh Tj = +2°C</sub>	9.35 kW	8.81 kW
COP T <sub>j = +2°C</sub>	5.82	3.59
C <sub>dh Tj = +2 °C</sub>	0.996	0.997
P <sub>dh Tj = +7°C</sub>	9.41 kW	9.06 kW
COP T <sub>j = +7°C</sub>	6.19	4.32
C <sub>dh Tj = +7 °C</sub>	0.996	0.997
P <sub>dh Tj = 12°C</sub>	9.52 kW	9.35 kW
COP T <sub>j = 12°C</sub>	6.73	5.47
C <sub>dh Tj = +12 °C</sub>	0.995	0.996
P <sub>dh Tj = T<sub>biv</sub></sub>	9.35 kW	8.94 kW
COP T <sub>j = T<sub>biv</sub></sub>	5.92	3.94
P <sub>dh Tj = TOL or P<sub>dh Tj = T<sub>designh</sub></sub> if TOL &lt; T<sub>designh</sub></sub>	9.35 kW	8.81 kW
COP T <sub>j = TOL or COP T<sub>j = T<sub>designh</sub></sub> if TOL &lt; T<sub>designh</sub></sub>	5.82	3.59
C <sub>dh Tj = TOL or P<sub>dh Tj = T<sub>designh</sub></sub> if TOL &lt; T<sub>designh</sub></sub>	0.996	0.997
WTOL	65 °C	65 °C
P <sub>off</sub>	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.72 kW	1.62 kW
Annual energy consumption Qhe	2122 kWh	2947 kWh