Login

Summary of	Thermia Atlas 12	Reg. No.	012-C700006
Certificate Holder			
Name	Thermia		
Address	Snickaregatan 1	Zip	
City	Arvika	Country	Sweden
Certification Body	RISE CERT		
Subtype title	Thermia Atlas 12		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R410A		
Mass of Refrigerant	1.4 kg		
Certification Date	02.03.2020		
Testing basis	HP Keymark Scheme Rules rev 7		

Model: ATLAS 12 400V

Configure model	
Model name	ATLAS 12 400V
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Brine/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	5.24 kW	4.78 kW
El input	1.10 kW	1.68 kW
COP	4.75	2.85

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	222 %	162 %
Prated	11.49 kW	10.48 kW
SCOP	5.75	4.25
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.17 kW	9.27 kW
COP Tj = -7°C	4.82	3.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW

COP Tj = 12°C	5.70	4.91
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4131 kWh	5097 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	226 %	167 %
Prated	11.49 kW	10.48 kW
SCOP	5.86	4.39
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.96 kW	6.34 kW
COP Tj = -7°C	5.64	3.96
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4838 kWh	5887 kWh

Water/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.16 kW	12.54 kW
El input	1.56 kW	3.76 kW
COP	6.52	3.33

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	334 %	217 %
Prated	10.16 kW	12.54 kW
SCOP	8.55	5.62
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.99 kW	11.10 kW
COP Tj = -7°C	6.95	4.20
Cdh Tj = -7 °C	0.99	0.99

Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.52 kW	4.34 kW
COP Tj = +7°C	10.21	6.70
Cdh Tj = +7 °C	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2454 kWh	4615 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	346 %	226 %
Prated	10.16 kW	12.54 kW
SCOP	8.86	5.84
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.15 kW	7.59 kW
COP Tj = -7°C	8.54	5.41
Cdh Tj = -7 °C	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh Tj = +2 °C	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW
COP Tj = +7°C	8.77	6.47
Cdh Tj = +7 °C	0.96	0.97

Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2827 kWh	5291 kWh

Model: ATLAS 12 DUO 400V

Configure model	
Model name	ATLAS 12 DUO 400V
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Brine/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	5.24 kW	4.78 kW
El input	1.10 kW	1.68 kW
COP	4.75	2.85

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	222 %	162 %
Prated	11.49 kW	10.48 kW
SCOP	5.75	4.25
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.17 kW	9.27 kW
COP Tj = -7°C	4.82	3.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW

COP Tj = 12°C	5.70	4.91
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4131 kWh	5097 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	226 %	167 %
Prated	11.49 kW	10.48 kW
SCOP	5.86	4.39
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.96 kW	6.34 kW
COP Tj = -7°C	5.64	3.96
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4838 kWh	5887 kWh

Water/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.16 kW	12.54 kW
El input	1.56 kW	3.76 kW
COP	6.52	3.33

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	334 %	217 %
Prated	10.16 kW	12.54 kW
SCOP	8.55	5.62
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.99 kW	11.10 kW
COP Tj = -7°C	6.95	4.20
Cdh Tj = -7 °C	0.99	0.99

Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.52 kW	4.34 kW
COP Tj = +7°C	10.21	6.70
Cdh Tj = +7 °C	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2454 kWh	4615 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	346 %	226 %
Prated	10.16 kW	12.54 kW
SCOP	8.86	5.84
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.15 kW	7.59 kW
COP Tj = -7°C	8.54	5.41
Cdh Tj = -7 °C	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh Tj = +2 °C	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW
COP Tj = +7°C	8.77	6.47
Cdh Tj = +7 °C	0.96	0.97

Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2827 kWh	5291 kWh

Model: ATLAS 12 230V

Configure model	
Model name	ATLAS 12 230V
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Brine/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	5.24 kW	4.78 kW
El input	1.10 kW	1.68 kW
COP	4.75	2.85

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	222 %	162 %
Prated	11.49 kW	10.48 kW
SCOP	5.75	4.25
Tbiv	-10 °C	-10 °C
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Pdh Tj = -7°C	10.17 kW	9.27 kW
COP Tj = -7°C	4.82	3.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW

COP Tj = 12°C	5.70	4.91
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4131 kWh	5097 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	226 %	167 %
Prated	11.49 kW	10.48 kW
SCOP	5.86	4.39
Tbiv	-22 °C	-22 °C
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COP Tj = +2°C	6.48	4.91
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
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Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4838 kWh	5887 kWh

Water/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.16 kW	12.54 kW
El input	1.56 kW	3.76 kW
COP	6.52	3.33

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	334 %	217 %
Prated	10.16 kW	12.54 kW
SCOP	8.55	5.62
Tbiv	-10 °C	-10 °C
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Pdh Tj = -7°C	8.99 kW	11.10 kW
COP Tj = -7°C	6.95	4.20
Cdh Tj = -7 °C	0.99	0.99

Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.52 kW	4.34 kW
COP Tj = +7°C	10.21	6.70
Cdh Tj = +7 °C	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2454 kWh	4615 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	33 dB(A)	33 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	346 %	226 %
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COP Tj = -7°C	8.54	5.41
Cdh Tj = -7 °C	0.98	0.99
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COP Tj = +2°C	10.08	6.70
Cdh Tj = +2 °C	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW
COP Tj = +7°C	8.77	6.47
Cdh Tj = +7 °C	0.96	0.97

Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2827 kWh	5291 kWh

Model: ATLAS 12 DUO 230V

Configure model	
Model name	ATLAS 12 DUO 230V
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Brine/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	5.24 kW	4.78 kW
El input	1.10 kW	1.68 kW
COP	4.75	2.85

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	222 %	162 %
Prated	11.49 kW	10.48 kW
SCOP	5.75	4.25
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.17 kW	9.27 kW
COP Tj = -7°C	4.82	3.24
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW

COP Tj = 12°C	5.70	4.91
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4131 kWh	5097 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	226 %	167 %
Prated	11.49 kW	10.48 kW
SCOP	5.86	4.39
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.96 kW	6.34 kW
COP Tj = -7°C	5.64	3.96
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh Tj = +2 °C	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh Tj = +7 °C	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.49 kW	10.48 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4838 kWh	5887 kWh

Water/Water Heat Pump

Heating

EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	10.16 kW	12.54 kW
El input	1.56 kW	3.76 kW
COP	6.52	3.33

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	334 %	217 %
Prated	10.16 kW	12.54 kW
SCOP	8.55	5.62
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.99 kW	11.10 kW
COP Tj = -7°C	6.95	4.20
Cdh Tj = -7 °C	0.99	0.99

Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.52 kW	4.34 kW
COP Tj = +7°C	10.21	6.70
Cdh Tj = +7 °C	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2454 kWh	4615 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	346 %	226 %
Prated	10.16 kW	12.54 kW
SCOP	8.86	5.84
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.15 kW	7.59 kW
COP Tj = -7°C	8.54	5.41
Cdh Tj = -7 °C	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh Tj = +2 °C	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW
COP Tj = +7°C	8.77	6.47
Cdh Tj = +7 °C	0.96	0.97

Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh Tj = +12 °C	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.16 kW	12.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2827 kWh	5291 kWh