

g				
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	RISE CERT		
Name of testing laboratory	RISE	RISE		
Subtype title	Thermia Atlas 12	Thermia Atlas 12		
Heat Pump Type	Brine/Water and Water	Brine/Water and Water/Water		
Refrigerant	R410a	R410a		
Mass Of Refrigerant	1.4 kg	1.4 kg		
Certification Date	02.03.2020	02.03.2020		
Testing basis	HP Keymark Scheme Rules rev 7			



Model: ATLAS 12 400V

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
СОР	4.75	2.85
Indoor water flow rate	0.91 m³/h	0.52 m³/h

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	0.99	0.99	
Pdh Tj = +2°C	6.19 kW	5.64 kW	
COP Tj = +2°C	5.95	4.30	
Cdh	0.98	0.99	
Pdh Tj = +7°C	3.98 kW	3.63 kW	
COP Tj = +7°C	6.50	5.02	
Cdh	0.98	0.98	
Pdh Tj = 12°C	2.81 kW	2.77 kW	





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COP Tj = 12°C	5.70	4.91
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW
COP Tj = TOL	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o 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

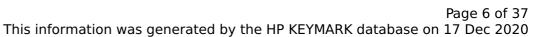
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	33 dB(A)	33 dB(A)

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	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW





COP Tj = TOL	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	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
СОР	6.52	3.33
Indoor water flow rate	1.79 m³/h	1.39 m³/h

Average Climate

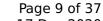
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	33 dB(A)	33 dB(A)

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





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Cdh	0.99	0.99
Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh	0.98	0.99
Pdh Tj = $+7^{\circ}$ C	3.52 kW	4.34 kW
$COPTj = +7^{\circ}C$	10.21	6.70
Cdh	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o w	o 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
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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	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW



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8.77	6.47
0.96	0.97
3.83 kW	3.78 kW
8.49	6.62
0.97	0.97
10.16 kW	12.54 kW
6.52	3.33
10.16 kW	12.54 kW
6.52	3.33
65 °C	65 °C
15 W	15 W
16 W	16 W
16 W	16 W
0 W	0 W
Electricity	Electricity
0.00 kW	0.00 kW
2827 kWh	5291 kWh
	0.96 3.83 kW 8.49 0.97 10.16 kW 6.52 10.16 kW 6.52 65 °C 15 W 16 W 0 W Electricity 0.00 kW



Model: ATLAS 12 DUO 400V

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
СОР	4.75	2.85
Indoor water flow rate	0.91 m³/h	0.52 m³/h

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	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW



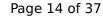


COP Tj = 12°C	5.70	4.91
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW
COP Tj = TOL	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary 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 1	4825	
	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	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW



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COP Tj = TOL	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	

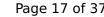


EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.16 kW	12.54 kW
El input	1.56 kW	3.76 kW
СОР	6.52	3.33
Indoor water flow rate	1.79 m³/h	1.39 m³/h

Average Climate

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

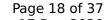
	Low temperature	Medium temperature
η_{S}	334 %	217 %
Prated	10.16 kW	12.54 kW
SCOP	8.55	5.62
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.99 kW	11.10 kW
COP Tj = -7°C	6.95	4.20





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		THIN database on 17 Dec 2020
Cdh	0.99	0.99
Pdh Tj = +2°C	5.47 kW	6.75 kW
$COPTj = +2^{\circ}C$	8.85	5.75
Cdh	0.98	0.99
Pdh Tj = $+7^{\circ}$ C	3.52 kW	4.34 kW
$COP Tj = +7^{\circ}C$	10.21	6.70
Cdh	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
РСК	0 W	o 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
$COP Tj = -7^{\circ}C$	8.54	5.41
Cdh	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW



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$COP Tj = +7^{\circ}C$	8.77	6.47
Cdh	0.96	0.97
Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o 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

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
СОР	4.75	2.85
Indoor water flow rate	0.91 m³/h	0.52 m³/h

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	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW





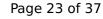
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COP Tj = 12°C	5.70	4.91
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW
COP Tj = TOL	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o w	0 W
Supplementary Heater: Type of 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 1	4825	
	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	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW





COP Tj = TOL	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

0.00 kW

4838 kWh

0.00 kW

5887 kWh

Water/Water Heat Pump

Supplementary Heater: PSUP

Annual energy consumption Qhe

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	

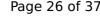


EN 14511-2			
	Low temperature	Medium temperature	
Heat output	10.16 kW	12.54 kW	
El input	1.56 kW	3.76 kW	
СОР	6.52	3.33	
Indoor water flow rate	1.79 m³/h	1.39 m³/h	

Average Climate

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

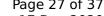
EN 14825		
	Low temperature	Medium temperature
η_{s}	334 %	217 %
Prated	10.16 kW	12.54 kW
SCOP	8.55	5.62
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.99 kW	11.10 kW
COP Tj = -7°C	6.95	4.20





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		milit database on 17 Dec 202
Cdh	0.99	0.99
Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh	0.98	0.99
Pdh Tj = $+7^{\circ}$ C	3.52 kW	4.34 kW
$COP Tj = +7^{\circ}C$	10.21	6.70
Cdh	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
РСК	0 W	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW





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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	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW



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$COP Tj = +7^{\circ}C$	8.77	6.47
Cdh	0.96	0.97
Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o 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

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
СОР	4.75	2.85
Indoor water flow rate	0.91 m³/h	0.52 m³/h

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	0.99	0.99
Pdh Tj = +2°C	6.19 kW	5.64 kW
COP Tj = +2°C	5.95	4.30
Cdh	0.98	0.99
Pdh Tj = +7°C	3.98 kW	3.63 kW
COP Tj = +7°C	6.50	5.02
Cdh	0.98	0.98
Pdh Tj = 12°C	2.81 kW	2.77 kW





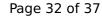
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	· · · · · · · · · · · · · · · · · · ·	
COP Tj = 12°C	5.70	4.91
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW
COP Tj = TOL	4.38	2.91
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o 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 1	4825	
	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	0.99	0.99
Pdh Tj = +2°C	4.23 kW	3.86 kW
COP Tj = +2°C	6.48	4.91
Cdh	0.98	0.98
Pdh Tj = +7°C	2.72 kW	2.48 kW
COP Tj = +7°C	5.93	5.22
Cdh	0.97	0.97
Pdh Tj = 12°C	2.80 kW	2.77 kW
COP Tj = 12°C	5.49	5.06
Cdh	0.97	0.97
Pdh Tj = Tbiv	11.49 kW	10.48 kW
COP Tj = Tbiv	4.38	2.91
Pdh Tj = TOL	11.49 kW	10.48 kW



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This information was generated by the HP KEYMARK database on 17 Dec 2020

COP Tj = TOL	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

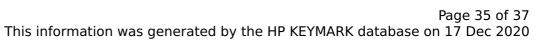


EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.16 kW	12.54 kW
El input	1.56 kW	3.76 kW
СОР	6.52	3.33
Indoor water flow rate	1.79 m³/h	1.39 m³/h

Average Climate

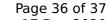
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	34 dB(A)	34 dB(A)

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



	CEN heat pump KEYMARK
6	KEYMARK

Cdh	0.99	0.99
Pdh Tj = +2°C	5.47 kW	6.75 kW
COP Tj = +2°C	8.85	5.75
Cdh	0.98	0.99
Pdh Tj = +7°C	3.52 kW	4.34 kW
COP Tj = +7°C	10.21	6.70
Cdh	0.96	0.98
Pdh Tj = 12°C	3.85 kW	3.75 kW
COP Tj = 12°C	8.73	6.41
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	o w	o 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	0.98	0.99
Pdh Tj = +2°C	3.74 kW	4.62 kW
COP Tj = +2°C	10.08	6.70
Cdh	0.96	0.98
Pdh Tj = +7°C	3.85 kW	3.76 kW



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$COP Tj = +7^{\circ}C$	8.77	6.47
Cdh	0.96	0.97
Pdh Tj = 12°C	3.83 kW	3.78 kW
COP Tj = 12°C	8.49	6.62
Cdh	0.97	0.97
Pdh Tj = Tbiv	10.16 kW	12.54 kW
COP Tj = Tbiv	6.52	3.33
Pdh Tj = TOL	10.16 kW	12.54 kW
COP Tj = TOL	6.52	3.33
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	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