

Summary of	Thermia Calibra 12	Reg. No.	012-SC0356-19
Certificate Holder			
Name	Thermia	Thermia	
Address	Snickaregatan 1	Zip	
City	Arvika	Country	Sweden
Certification Body	RISE CERT	RISE CERT	
Name of testing laboratory	RISE	RISE	
Subtype title	Thermia Calibra 12	Thermia Calibra 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	04.10.2019		



Model: Thermia Calibra 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

EN 14511-2		
	Low temperature	Medium temperature
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

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	219 %	157 %
Prated	11.69 kW	10.60 kW
SCOP	5.68	4.12
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.34 kW	9.38 kW
COP Tj = -7°C	4.77	3.15
Cdh	0.99	0.99
Pdh Tj = +2°C	6.29 kW	5.71 kW
COP Tj = +2°C	5.82	4.20
Cdh	0.98	0.99
Pdh Tj = +7°C	4.05 kW	3.67 kW
COP Tj = +7°C	6.40	4.81
Cdh	0.97	0.98
Pdh Tj = 12°C	2.91 kW	2.91 kW
COP Tj = 12°C	5.97	4.66
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88



5320 kWh



Pdh Tj = TOL11.69 kW 10.60 kW COPTj = TOL4.39 2.88 65 °C WTOL 65 °C 15 W Poff 15 W PTO 18 W 18 W **PSB** 18 W 18 W **PCK** 0 W 0 W Supplementary Heater: Type of energy input Electricity Electricity 0.00 kW Supplementary Heater: PSUP 0.00 kW

4249 kWh

Colder Climate

Annual energy consumption Qhe

EN 14825		
	Low temperature	Medium temperature
η_{s}	224 %	163 %
Prated	11.69 kW	10.60 kW
SCOP	5.80	4.29
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.07 kW	6.41 kW
COP Tj = -7°C	5.46	3.99





	, -	milit database on 17 Dec 202
Cdh	0.99	0.99
Pdh Tj = +2°C	4.31 kW	3.90 kW
COP Tj = +2°C	6.39	4.77
Cdh	0.98	0.98
Pdh Tj = +7°C	2.77 kW	2.92 kW
$COP Tj = +7^{\circ}C$	6.32	4.71
Cdh	0.96	0.97
Pdh Tj = 12°C	2.89 kW	2.92 kW
COP Tj = 12°C	5.78	4.74
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88
Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
РСК	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	4963 kWh	6094 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.53	8.65
COP Tj = -15°C (if TOL $<$ -20°C)	4.92	3.44
Cdh	0.99	1.00

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

EN 14511-2		
	Low temperature	Medium temperature
El input	1.08 kW	1.71 kW
СОР	6.56	3.66
Indoor water flow rate	1.23 m³/h	0.67 m³/h



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	290 %	206 %
Prated	10.42 kW	11.60 kW
SCOP	7.45	5.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	10.26 kW
COP Tj = -7°C	6.60	4.09
Cdh	0.99	0.99
Pdh Tj = +2°C	5.61 kW	6.25 kW
COP Tj = +2°C	7.78	5.49
Cdh	0.98	0.99
Pdh Tj = +7°C	3.88 kW	4.02 kW
COP Tj = +7°C	8.02	6.19
Cdh	0.96	0.97
Pdh Tj = 12°C	3.88 kW	3.74 kW





	· · · · · · · · · · · · · · · · · · ·	
COP Tj = 12°C	8.04	6.34
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 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	2890 kWh	4473 kWh

Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	299 %	214 %
Prated	10.42 kW	11.60 kW
SCOP	7.68	5.56





This information was ge	nerated by the HP KETM	ARK database on 17 Dec 2020
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.31 kW	7.02 kW
COP Tj = -7°C	7.84	5.18
Cdh	0.98	0.99
Pdh Tj = +2°C	3.84 kW	4.27 kW
$COP Tj = +2^{\circ}C$	7.93	6.12
Cdh	0.96	0.98
Pdh Tj = $+7^{\circ}$ C	3.88 kW	3.75 kW
$COPTj = +7^{\circ}C$	8.07	6.35
Cdh	0.96	0.97
Pdh Tj = 12°C	3.89 kW	3.78 kW
COP Tj = 12°C	7.88	6.54
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
	•	



$$\operatorname{\textit{Page}}\ 10$$ of 46 This information was generated by the HP KEYMARK database on 17 Dec 2020

PSB	18 W	18 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	3346 kWh	5142 kWh
Pdh Tj = -15°C (if TOL<-20°C)	8.50	9.46
COP Tj = -15°C (if TOL $<$ -20°C)	7.09	4.46
Cdh	0.99	0.99



Model: Thermia Calibra 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

EN 14511-2		
	Low temperature	Medium temperature
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

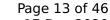
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	36 dB(A)	36 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	219 %	157 %
Prated	11.69 kW	10.60 kW
SCOP	5.68	4.12
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.34 kW	9.38 kW
COP Tj = -7°C	4.77	3.15
Cdh	0.99	0.99
Pdh Tj = +2°C	6.29 kW	5.71 kW
COP Tj = +2°C	5.82	4.20
Cdh	0.98	0.99
Pdh Tj = +7°C	4.05 kW	3.67 kW
COP Tj = +7°C	6.40	4.81
Cdh	0.97	0.98
Pdh Tj = 12°C	2.91 kW	2.91 kW
COP Tj = 12°C	5.97	4.66
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88

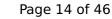




Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4249 kWh	5320 kWh

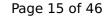
Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	224 %	163 %
Prated	11.69 kW	10.60 kW
SCOP	5.80	4.29
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.07 kW	6.41 kW
COP Tj = -7°C	5.46	3.99





		The state of the s
Cdh	0.99	0.99
Pdh Tj = $+2$ °C	4.31 kW	3.90 kW
COP Tj = +2°C	6.39	4.77
Cdh	0.98	0.98
Pdh Tj = $+7^{\circ}$ C	2.77 kW	2.92 kW
$COP Tj = +7^{\circ}C$	6.32	4.71
Cdh	0.96	0.97
Pdh Tj = 12°C	2.89 kW	2.92 kW
COP Tj = 12°C	5.78	4.74
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88
Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 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	4963 kWh	6094 kWh
Pdh Tj = -15°C (if TOL $<$ -20°C)	9.53	8.65
COP Tj = -15°C (if TOL $<$ -20°C)	4.92	3.44
Cdh	0.99	1.00

Water/Water Heat Pump

Heating

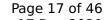
EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
	Low temperature	Medium temperature
El input	1.08 kW	1.71 kW
СОР	6.56	3.66
Indoor water flow rate	1.23 m³/h	0.67 m³/h



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	36 dB(A)	36 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	290 %	206 %
Prated	10.42 kW	11.60 kW
SCOP	7.45	5.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	10.26 kW
COP Tj = -7°C	6.60	4.09
Cdh	0.99	0.99
Pdh Tj = +2°C	5.61 kW	6.25 kW
COP Tj = +2°C	7.78	5.49
Cdh	0.98	0.99
Pdh Tj = +7°C	3.88 kW	4.02 kW
COP Tj = +7°C	8.02	6.19
Cdh	0.96	0.97
Pdh Tj = 12°C	3.88 kW	3.74 kW

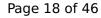




COP Tj = 12°C	8.04	6.34
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2890 kWh	4473 kWh

Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	299 %	214 %
Prated	10.42 kW	11.60 kW
SCOP	7.68	5.56





This information was generated by the HP KEYMARK database on 17 Dec 2020			
Tbiv	-22 °C	-22 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	6.31 kW	7.02 kW	
COP Tj = -7°C	7.84	5.18	
Cdh	0.98	0.99	
Pdh Tj = +2°C	3.84 kW	4.27 kW	
COP Tj = +2°C	7.93	6.12	
Cdh	0.96	0.98	
Pdh Tj = $+7^{\circ}$ C	3.88 kW	3.75 kW	
$COPTj = +7^{\circ}C$	8.07	6.35	
Cdh	0.96	0.97	
Pdh Tj = 12°C	3.89 kW	3.78 kW	
COP Tj = 12°C	7.88	6.54	
Cdh	0.96	0.97	
Pdh Tj = Tbiv	10.42 kW	11.60 kW	
COP Tj = Tbiv	6.34	3.73	
Pdh Tj = TOL	10.42 kW	11.60 kW	
COP Tj = TOL	6.34	3.73	
WTOL	65 °C	65 °C	
Poff	15 W	15 W	
РТО	18 W	18 W	
	•		



PSB	18 W	18 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	3346 kWh	5142 kWh
Pdh Tj = -15°C (if TOL<-20°C)	8.50	9.46
COP Tj = -15°C (if TOL<-20°C)	7.09	4.46
Cdh	0.99	0.99



Model: Thermia Calibra 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

EN 14511-2			
	Low temperature	Medium temperature	
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	

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	219 %	157 %
Prated	11.69 kW	10.60 kW
SCOP	5.68	4.12
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.34 kW	9.38 kW
COP Tj = -7°C	4.77	3.15
Cdh	0.99	0.99
Pdh Tj = +2°C	6.29 kW	5.71 kW
COP Tj = +2°C	5.82	4.20
Cdh	0.98	0.99
Pdh Tj = +7°C	4.05 kW	3.67 kW
COP Tj = +7°C	6.40	4.81
Cdh	0.97	0.98
Pdh Tj = 12°C	2.91 kW	2.91 kW
COP Tj = 12°C	5.97	4.66
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88

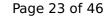




Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4249 kWh	5320 kWh

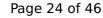
Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	224 %	163 %
Prated	11.69 kW	10.60 kW
SCOP	5.80	4.29
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.07 kW	6.41 kW
COP Tj = -7°C	5.46	3.99





	, -	milit database on 17 Dec 202
Cdh	0.99	0.99
Pdh Tj = +2°C	4.31 kW	3.90 kW
COP Tj = +2°C	6.39	4.77
Cdh	0.98	0.98
Pdh Tj = +7°C	2.77 kW	2.92 kW
$COP Tj = +7^{\circ}C$	6.32	4.71
Cdh	0.96	0.97
Pdh Tj = 12°C	2.89 kW	2.92 kW
COP Tj = 12°C	5.78	4.74
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88
Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
РСК	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	4963 kWh	6094 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.53	8.65
COP Tj = -15°C (if TOL $<$ -20°C)	4.92	3.44
Cdh	0.99	1.00

Water/Water Heat Pump

Heating

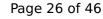
EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2			
	Low temperature	Medium temperature	
El input	1.08 kW	1.71 kW	
СОР	6.56	3.66	
Indoor water flow rate	1.23 m³/h	0.67 m³/h	



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	290 %	206 %
Prated	10.42 kW	11.60 kW
SCOP	7.45	5.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	10.26 kW
COP Tj = -7°C	6.60	4.09
Cdh	0.99	0.99
Pdh Tj = +2°C	5.61 kW	6.25 kW
COP Tj = +2°C	7.78	5.49
Cdh	0.98	0.99
Pdh Tj = +7°C	3.88 kW	4.02 kW
COP Tj = +7°C	8.02	6.19
Cdh	0.96	0.97
Pdh Tj = 12°C	3.88 kW	3.74 kW





COP Tj = 12°C	8.04	6.34
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 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	2890 kWh	4473 kWh

Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	299 %	214 %
Prated	10.42 kW	11.60 kW
SCOP	7.68	5.56





This information was get	lerated by the Hi KETM	ARK database on 17 Dec 2020
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.31 kW	7.02 kW
COP Tj = -7°C	7.84	5.18
Cdh	0.98	0.99
Pdh Tj = +2°C	3.84 kW	4.27 kW
COP Tj = +2°C	7.93	6.12
Cdh	0.96	0.98
Pdh Tj = $+7$ °C	3.88 kW	3.75 kW
$COPTj = +7^{\circ}C$	8.07	6.35
Cdh	0.96	0.97
Pdh Tj = 12°C	3.89 kW	3.78 kW
COP Tj = 12°C	7.88	6.54
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W



PSB	18 W	18 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	3346 kWh	5142 kWh
Pdh Tj = -15°C (if TOL<-20°C)	8.50	9.46
COP Tj = -15°C (if TOL<-20°C)	7.09	4.46
Cdh	0.99	0.99



Model: Thermia Calibra 12 Duo 230V

Genera	al 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

EN 14511-2			
	Low temperature	Medium temperature	
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	

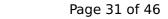
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	36 dB(A)	36 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	219 %	157 %
Prated	11.69 kW	10.60 kW
SCOP	5.68	4.12
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.34 kW	9.38 kW
COP Tj = -7°C	4.77	3.15
Cdh	0.99	0.99
Pdh Tj = +2°C	6.29 kW	5.71 kW
COP Tj = +2°C	5.82	4.20
Cdh	0.98	0.99
Pdh Tj = +7°C	4.05 kW	3.67 kW
COP Tj = +7°C	6.40	4.81
Cdh	0.97	0.98
Pdh Tj = 12°C	2.91 kW	2.91 kW
COP Tj = 12°C	5.97	4.66
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88





				- 3		
This	information v	was generated b	y the HP KEYMARK	database on 17	Dec 2020	

Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
PTO	18 W	18 W
PSB	18 W	18 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	4249 kWh	5320 kWh

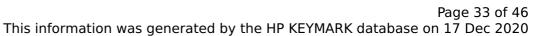
Colder Climate

EN 14825			
	Low temperature	Medium temperature	
η_{s}	224 %	163 %	
Prated	11.69 kW	10.60 kW	
SCOP	5.80	4.29	
Tbiv	-22 °C	-22 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	7.07 kW	6.41 kW	
COP Tj = -7°C	5.46	3.99	





		THE GOLDONG ON IT DEC 2020
Cdh	0.99	0.99
Pdh Tj = +2°C	4.31 kW	3.90 kW
COP Tj = +2°C	6.39	4.77
Cdh	0.98	0.98
Pdh Tj = +7°C	2.77 kW	2.92 kW
COP Tj = +7°C	6.32	4.71
Cdh	0.96	0.97
Pdh Tj = 12°C	2.89 kW	2.92 kW
COP Tj = 12°C	5.78	4.74
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88
Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 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	4963 kWh	6094 kWh
Pdh Tj = -15°C (if TOL $<$ -20°C)	9.53	8.65
COP Tj = -15°C (if TOL<-20°C)	4.92	3.44
Cdh	0.99	1.00

Water/Water Heat Pump

Heating

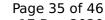
EN 14511-4	
Starting and operating test	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
	Low temperature	Medium temperature
El input	1.08 kW	1.71 kW
СОР	6.56	3.66
Indoor water flow rate	1.23 m³/h	0.67 m³/h



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	36 dB(A)	36 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	290 %	206 %
Prated	10.42 kW	11.60 kW
SCOP	7.45	5.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	10.26 kW
COP Tj = -7°C	6.60	4.09
Cdh	0.99	0.99
Pdh Tj = +2°C	5.61 kW	6.25 kW
COP Tj = +2°C	7.78	5.49
Cdh	0.98	0.99
Pdh Tj = +7°C	3.88 kW	4.02 kW
COP Tj = +7°C	8.02	6.19
Cdh	0.96	0.97
Pdh Tj = 12°C	3.88 kW	3.74 kW

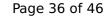




COP Tj = 12°C	8.04	6.34
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2890 kWh	4473 kWh

Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{S}	299 %	214 %
Prated	10.42 kW	11.60 kW
SCOP	7.68	5.56





This information was get	lerated by the Hi KETM	ARK database on 17 Dec 2020
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	6.31 kW	7.02 kW
COP Tj = -7°C	7.84	5.18
Cdh	0.98	0.99
Pdh Tj = +2°C	3.84 kW	4.27 kW
COP Tj = +2°C	7.93	6.12
Cdh	0.96	0.98
Pdh Tj = $+7$ °C	3.88 kW	3.75 kW
$COPTj = +7^{\circ}C$	8.07	6.35
Cdh	0.96	0.97
Pdh Tj = 12°C	3.89 kW	3.78 kW
COP Tj = 12°C	7.88	6.54
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W



Page 37 of 46

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

PSB	18 W	18 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	3346 kWh	5142 kWh
Pdh Tj = -15°C (if TOL<-20°C)	8.50	9.46
COP Tj = -15°C (if TOL $<$ -20°C)	7.09	4.46
Cdh	0.99	0.99



Model: Thermia Calibra 12 400V (White)

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	

EN 14511-2		
	Low temperature	Medium temperature
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

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	219 %	157 %
Prated	11.69 kW	10.60 kW
SCOP	5.68	4.12
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.34 kW	9.38 kW
COP Tj = -7°C	4.77	3.15
Cdh	0.99	0.99
Pdh Tj = +2°C	6.29 kW	5.71 kW
COP Tj = +2°C	5.82	4.20
Cdh	0.98	0.99
Pdh Tj = +7°C	4.05 kW	3.67 kW
COP Tj = +7°C	6.40	4.81
Cdh	0.97	0.98
Pdh Tj = 12°C	2.91 kW	2.91 kW
COP Tj = 12°C	5.97	4.66
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88

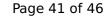




Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4249 kWh	5320 kWh

Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	224 %	163 %
Prated	11.69 kW	10.60 kW
SCOP	5.80	4.29
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.07 kW	6.41 kW
COP Tj = -7°C	5.46	3.99





		THE GOLDONG ON IT DEC 2020
Cdh	0.99	0.99
Pdh Tj = +2°C	4.31 kW	3.90 kW
COP Tj = +2°C	6.39	4.77
Cdh	0.98	0.98
Pdh Tj = +7°C	2.77 kW	2.92 kW
COP Tj = +7°C	6.32	4.71
Cdh	0.96	0.97
Pdh Tj = 12°C	2.89 kW	2.92 kW
COP Tj = 12°C	5.78	4.74
Cdh	0.96	0.97
Pdh Tj = Tbiv	11.69 kW	10.60 kW
COP Tj = Tbiv	4.39	2.88
Pdh Tj = TOL	11.69 kW	10.60 kW
COP Tj = TOL	4.39	2.88
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 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	4963 kWh	6094 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.53	8.65
COP Tj = -15°C (if TOL $<$ -20°C)	4.92	3.44
Cdh	0.99	1.00

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

EN 14511-2		
	Low temperature	Medium temperature
El input	1.08 kW	1.71 kW
СОР	6.56	3.66
Indoor water flow rate	1.23 m³/h	0.67 m³/h



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	35 dB(A)	35 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	290 %	206 %
Prated	10.42 kW	11.60 kW
SCOP	7.45	5.36
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	10.26 kW
COP Tj = -7°C	6.60	4.09
Cdh	0.99	0.99
Pdh Tj = +2°C	5.61 kW	6.25 kW
COP Tj = +2°C	7.78	5.49
Cdh	0.98	0.99
Pdh Tj = +7°C	3.88 kW	4.02 kW
COP Tj = +7°C	8.02	6.19
Cdh	0.96	0.97
Pdh Tj = 12°C	3.88 kW	3.74 kW





COP Tj = 12°C	8.04	6.34
Cdh	0.96	0.97
Pdh Tj = Tbiv	10.42 kW	11.60 kW
COP Tj = Tbiv	6.34	3.73
Pdh Tj = TOL	10.42 kW	11.60 kW
COP Tj = TOL	6.34	3.73
WTOL	65 °C	65 °C
Poff	15 W	15 W
РТО	18 W	18 W
PSB	18 W	18 W
PCK	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	2890 kWh	4473 kWh

Colder Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	299 %	214 %
Prated	10.42 kW	11.60 kW
SCOP	7.68	5.56





This information was generated by the HP REYMARK database on 17 Dec 2020			
Tbiv	-22 °C	-22 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	6.31 kW	7.02 kW	
COP Tj = -7°C	7.84	5.18	
Cdh	0.98	0.99	
Pdh Tj = +2°C	3.84 kW	4.27 kW	
COP Tj = +2°C	7.93	6.12	
Cdh	0.96	0.98	
Pdh Tj = $+7^{\circ}$ C	3.88 kW	3.75 kW	
$COPTj = +7^{\circ}C$	8.07	6.35	
Cdh	0.96	0.97	
Pdh Tj = 12°C	3.89 kW	3.78 kW	
COP Tj = 12°C	7.88	6.54	
Cdh	0.96	0.97	
Pdh Tj = Tbiv	10.42 kW	11.60 kW	
COP Tj = Tbiv	6.34	3.73	
Pdh Tj = TOL	10.42 kW	11.60 kW	
COP Tj = TOL	6.34	3.73	
WTOL	65 °C	65 °C	
Poff	15 W	15 W	
РТО	18 W	18 W	



	<u> </u>	
PSB	18 W	18 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	3346 kWh	5142 kWh
Pdh Tj = -15°C (if TOL<-20°C)	8.50	9.46
COP Tj = -15 °C (if TOL< -20 °C)	7.09	4.46
Cdh	0.99	0.99