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#### **Login**

Summary of	Thermia Calibra Eco 12	Reg. No.	012-C700111	
Certificate Holder				
Name	Thermia			
Address	Snickaregatan 1	Zip		
City	Arvika	Country	Sweden	
Certification Body	RISE CERT			
Subtype title	Thermia Calibra Eco 12			
Heat Pump Type	Brine/Water and Water/Water			
Refrigerant	R452B			
Mass of Refrigerant	1.3 kg			
Certification Date	25.08.2021			
Testing basis	EN 14511:2018, EN 14825:2018, EN 12102:2017			

# **Model: Thermia Calibra Eco 12 400V**

Configure model		
Model name	Thermia Calibra Eco 12 400V	
Application	Heating (medium temp)	
Units	Indoor	
Climate Zone	Colder Climate + Warmer 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	5.21 kW	8.42 kW	
El input	1.09 kW	2.84 kW	
СОР	4.78	2.96	

# 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
$\eta_{s}$	219 %	162 %
Prated	11.52 kW	10.57 kW
SCOP	5.67	4.25
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.19 kW	9.35 kW
COP Tj = -7°C	4.66	3.23
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	6.20 kW	5.69 kW
COP Tj = +2°C	5.81	4.27
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	3.99 kW	3.66 kW
COP Tj = +7°C	6.39	5.06
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	2.77 kW	2.73 kW





COP Tj = 12°C	5.67	4.67
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	4195 kWh	5134 kWh

### Warmer Climate

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

EN 14825		
	Low temperature	Medium temperature





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$\eta_{s}$	222 %	164 %
Prated	11.52 kW	10.57 kW
SCOP	5.76	4.29
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = $+2$ °C	11.52 kW	10.57 kW
$COP Tj = +2^{\circ}C$	4.39	2.96
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	7.41 kW	6.79 kW
$COP Tj = +7^{\circ}C$	5.38	3.81
Cdh Tj = +7 °C	0.99	1.00
Pdh Tj = 12°C	3.29 kW	3.02 kW
COP Tj = 12°C	6.47	5.12
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W





РТО	9 W	9 W
PSB	9 W	9 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	2674 kWh	3290 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
$\eta_{s}$		226 %	168 %
Prated		11.52 kW	10.57 kW
SCOP		5.85	4.39
Tbiv		-22 °C	-22 °C
TOL		-22 °C	-22 °C
Pdh Tj = -7°C		6.97 kW	6.40 kW
COP Tj = -7°C		5.69	4.02





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Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.24 kW	3.89 kW
$COP Tj = +2^{\circ}C$	6.38	4.92
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = $+7^{\circ}$ C	2.73 kW	2.50 kW
$COPTj = +7^{\circ}C$	5.79	4.88
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.78 kW	2.74 kW
COP Tj = 12°C	5.51	4.74
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW





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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	12.24 kW	14.24 kW
El input	2.01 kW	3.84 kW
СОР	6.08	3.71

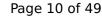
## Average Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	292 %	213 %
Prated	12.24 kW	14.24 kW





	<u> </u>	
SCOP	7.51	5.52
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.83 kW	12.60 kW
COP Tj = -7°C	6.35	4.09
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	6.59 kW	7.67 kW
COP Tj = +2°C	7.52	5.56
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = $+7$ °C	4.24 kW	4.93 kW
$COP Tj = +7^{\circ}C$	8.40	6.49
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.70 kW	3.65 kW
COP Tj = 12°C	8.22	6.57
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W

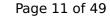




PTO	9 W	9 W
PSB	9 W	9 W
PCK	0 W	9 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3369 kWh	5331 kWh

### Warmer Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	295 %	214 %
Prated	12.24 kW	14.24 kW
SCOP	7.57	5.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.24 kW	14.24 kW
$COP Tj = +2^{\circ}C$	6.08	3.71
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = $+7^{\circ}$ C	7.87 kW	9.16 kW
$COP Tj = +7^{\circ}C$	7.15	4.96
Cdh Tj = +7 °C	0.99	1.00

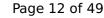




Pdh Tj = 12°C	3.50 kW	4.07 kW
COP Tj = 12°C	8.40	6.62
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	2161 kWh	3425 kWh

### Colder Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_s$	300 %	223 %
Prated	12.24 kW	14.24 kW





SCOP	7.70	5.77
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.41 kW	8.62 kW
COP Tj = -7°C	7.43	5.28
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = $+2$ °C	4.51 kW	5.25 kW
COP Tj = +2°C	8.14	6.31
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = $+7^{\circ}$ C	3.71 kW	3.37 kW
$COPTj = +7^{\circ}C$	8.35	7.00
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	3.68 kW	3.66 kW
COP Tj = 12°C	7.96	6.72
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W



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РТО	9 W	9 W
PSB	9 W	9 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	3917 kWh	6086 kWh



# Model: Thermia Calibra Eco 12 Duo 400V

Configure model	
Model name	Thermia Calibra Eco 12 Duo 400V
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer 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	5.21 kW	8.42 kW
El input	1.09 kW	2.84 kW
СОР	4.78	2.96

# **Average Climate**



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

	EN 14825		
	Low temperature	Medium temperature	
$\eta_{s}$	219 %	162 %	
Prated	11.52 kW	10.57 kW	
SCOP	5.67	4.25	
Tbiv	-10 °C	-10 °C	
TOL	-10 °C	-10 °C	
Pdh Tj = -7°C	10.19 kW	9.35 kW	
COP Tj = -7°C	4.66	3.23	
Cdh Tj = -7 °C	1.00	1.00	
Pdh Tj = +2°C	6.20 kW	5.69 kW	
COP Tj = +2°C	5.81	4.27	
Cdh Tj = +2 °C	0.99	0.99	
Pdh Tj = +7°C	3.99 kW	3.66 kW	
COP Tj = +7°C	6.39	5.06	
Cdh Tj = +7 °C	0.99	0.99	
Pdh Tj = 12°C	2.77 kW	2.73 kW	



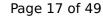


COP Tj = 12°C	5.67	4.67
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4195 kWh	5134 kWh

## Warmer Climate

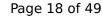
	EN 12102-1	
	Low temperature	Medium temperature
Sound power level indoor	36 dB(A)	36 dB(A)

EN 1482	25	
	Low temperature	Medium temperature





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$\eta_s$	222 %	164 %
Prated	11.52 kW	10.57 kW
SCOP	5.76	4.29
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.52 kW	10.57 kW
COP Tj = +2°C	4.39	2.96
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	7.41 kW	6.79 kW
$COPTj = +7^{\circ}C$	5.38	3.81
Cdh Tj = +7 °C	0.99	1.00
Pdh Tj = 12°C	3.29 kW	3.02 kW
COP Tj = 12°C	6.47	5.12
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W





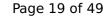
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РТО	9 W	9 W
PSB	9 W	9 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2674 kWh	3290 kWh

### Colder Climate

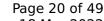
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	36 dB(A)	36 dB(A)	

EN 14825			
	Low temperature	Medium temperature	
$\eta_{s}$	226 %	168 %	
Prated	11.52 kW	10.57 kW	
SCOP	5.85	4.39	
Tbiv	-22 °C	-22 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	6.97 kW	6.40 kW	
COP Tj = -7°C	5.69	4.02	
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Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.24 kW	3.89 kW
COP Tj = +2°C	6.38	4.92
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.73 kW	2.50 kW
$COPTj = +7^{\circ}C$	5.79	4.88
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.78 kW	2.74 kW
COP Tj = 12°C	5.51	4.74
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
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	Annual an annual annual and the	4056 13445	5020 LW/h
	Annual energy consumption Qhe	4856 kWh	5928 kWh
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Water/Water Heat Pump

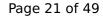
# Heating

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	12.24 kW	14.24 kW	
El input	2.01 kW	3.84 kW	
СОР	6.08	3.71	

## Average Climate

EN 14825			
	Low temperature	Medium temperature	
$\eta_{S}$	292 %	213 %	
Prated	12.24 kW	14.24 kW	





	<u> </u>	
SCOP	7.51	5.52
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.83 kW	12.60 kW
COP Tj = -7°C	6.35	4.09
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	6.59 kW	7.67 kW
COP Tj = +2°C	7.52	5.56
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = $+7$ °C	4.24 kW	4.93 kW
$COP Tj = +7^{\circ}C$	8.40	6.49
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.70 kW	3.65 kW
COP Tj = 12°C	8.22	6.57
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W

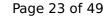




РТО	9 W	9 W
PSB	9 W	9 W
PCK	o w	9 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3369 kWh	5331 kWh

### Warmer Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	295 %	214 %
Prated	12.24 kW	14.24 kW
SCOP	7.57	5.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.24 kW	14.24 kW
COP Tj = +2°C	6.08	3.71
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	7.87 kW	9.16 kW
COP Tj = +7°C	7.15	4.96
Cdh Tj = +7 °C	0.99	1.00

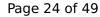




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Pdh Tj = 12°C	3.50 kW	4.07 kW
COP Tj = 12°C	8.40	6.62
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	2161 kWh	3425 kWh
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### Colder Climate

EN 14825			
Low temperature Medium temperature			
$\eta_{S}$	300 %	223 %	
Prated	12.24 kW	14.24 kW	





SCOP	7.70	5.77
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.41 kW	8.62 kW
COP Tj = -7°C	7.43	5.28
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	4.51 kW	5.25 kW
COP Tj = +2°C	8.14	6.31
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.71 kW	3.37 kW
$COP Tj = +7^{\circ}C$	8.35	7.00
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	3.68 kW	3.66 kW
COP Tj = 12°C	7.96	6.72
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
	•	-



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РТО	9 W	9 W
PSB	9 W	9 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	3917 kWh	6086 kWh

# **Model: Thermia Calibra Eco 12 230V**

Configure model		
Model name Thermia Calibra Eco 12 230V		
Application	Heating (medium temp)	
Units	Indoor	
Climate Zone	Colder Climate + Warmer 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	5.21 kW	8.42 kW
El input	1.09 kW	2.84 kW
СОР	4.78	2.96

# 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
$\eta_{s}$	219 %	162 %
Prated	11.52 kW	10.57 kW
SCOP	5.67	4.25
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.19 kW	9.35 kW
COP Tj = -7°C	4.66	3.23
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	6.20 kW	5.69 kW
COP Tj = +2°C	5.81	4.27
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	3.99 kW	3.66 kW
COP Tj = +7°C	6.39	5.06
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	2.77 kW	2.73 kW





Cdh Tj = +12 °C       0.98       0.99         Pdh Tj = Tbiv       11.52 kW       10.57 kW         COP Tj = Tbiv       4.39       2.96         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh       11.52 kW       10.57 kW         COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh       4.39       2.96         WTOL       65 °C       65 °C         Poff       7 W       7 W         PTO       9 W       9 W         PSB       9 W       9 W         PCK       0 W       0 W         Supplementary Heater: Type of energy input       Electricity       Electricity         Supplementary Heater: PSUP       0.00 kW       0.00 kW			
Pdh Tj = Tbiv       11.52 kW       10.57 kW         COP Tj = Tbiv       4.39       2.96         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	COP Tj = 12°C	5.67	4.67
COP Tj = Tbiv       4.39       2.96         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	COP Tj = Tbiv	4.39	2.96
WTOL 65 °C 65 °C  Poff 7 W 7 W  PTO 9 W 9 W  PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity Supplementary Heater: PSUP 0.00 kW 0.00 kW	Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
Poff 7 W 7 W  PTO 9 W 9 W  PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
PTO 9 W 9 W  PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	WTOL	65 °C	65 °C
PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	Poff	7 W	7 W
PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	РТО	9 W	9 W
Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	PSB	9 W	9 W
Supplementary Heater: PSUP 0.00 kW 0.00 kW	PCK	o w	o w
	Supplementary Heater: Type of energy input	Electricity	Electricity
Annual energy consumption Qhe 4195 kWh 5134 kWh	Supplementary Heater: PSUP	0.00 kW	0.00 kW
	Annual energy consumption Qhe	4195 kWh	5134 kWh

### Warmer Climate

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

EN 14825		
	Low temperature	Medium temperature





This information was general		
$\eta_{s}$	222 %	164 %
Prated	11.52 kW	10.57 kW
SCOP	5.76	4.29
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.52 kW	10.57 kW
$COP Tj = +2^{\circ}C$	4.39	2.96
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = $+7^{\circ}$ C	7.41 kW	6.79 kW
$COP Tj = +7^{\circ}C$	5.38	3.81
Cdh Tj = +7 °C	0.99	1.00
Pdh Tj = 12°C	3.29 kW	3.02 kW
COP Tj = 12°C	6.47	5.12
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W



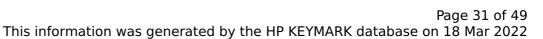


РТО	9 W	9 W
PSB	9 W	9 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2674 kWh	3290 kWh

### 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
$\eta_{s}$		226 %	168 %
Prated		11.52 kW	10.57 kW
SCOP		5.85	4.39
Tbiv		-22 °C	-22 °C
TOL		-22 °C	-22 °C
Pdh Tj = -7°C		6.97 kW	6.40 kW
COP Tj = -7°C		5.69	4.02





This information was genera		
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.24 kW	3.89 kW
$COP Tj = +2^{\circ}C$	6.38	4.92
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = $+7^{\circ}$ C	2.73 kW	2.50 kW
$COP Tj = +7^{\circ}C$	5.79	4.88
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.78 kW	2.74 kW
COP Tj = 12°C	5.51	4.74
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	4856 kWh	5928 kWh	
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Water/Water Heat Pump

# Heating

EN 14511-4	
Starting and operating test	passed
Starting and operating test	passeu
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	12.24 kW	14.24 kW	
El input	2.01 kW	3.84 kW	
СОР	6.08	3.71	

## Average Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	292 %	213 %
Prated	12.24 kW	14.24 kW





SCOP	7.51	5.52
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.83 kW	12.60 kW
COP Tj = -7°C	6.35	4.09
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = $+2$ °C	6.59 kW	7.67 kW
COP Tj = +2°C	7.52	5.56
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = $+7^{\circ}$ C	4.24 kW	4.93 kW
$COPTj = +7^{\circ}C$	8.40	6.49
Cdh Tj = $+7$ °C	0.98	0.99
Pdh Tj = 12°C	3.70 kW	3.65 kW
COP Tj = 12°C	8.22	6.57
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W

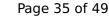




•	•	
РТО	9 W	9 W
PSB	9 W	9 W
PCK	0 W	9 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3369 kWh	5331 kWh

### Warmer Climate

EN 14825				
	Low temperature	Medium temperature		
$\eta_{s}$	295 %	214 %		
Prated	12.24 kW	14.24 kW		
SCOP	7.57	5.56		
Tbiv	2 °C	2 °C		
TOL	2 °C	2 °C		
Pdh Tj = +2°C	12.24 kW	14.24 kW		
COP Tj = +2°C	6.08	3.71		
Cdh Tj = +2 °C	1.00	1.00		
Pdh Tj = +7°C	7.87 kW	9.16 kW		
COP Tj = +7°C	7.15	4.96		
Cdh Tj = +7 °C	0.99	1.00		

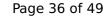




Pdh Tj = 12°C	3.50 kW	4.07 kW
COP Tj = 12°C	8.40	6.62
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	2161 kWh	3425 kWh

### Colder Climate

EN 14825				
	Low temperature	Medium temperature		
$\eta_{s}$	300 %	223 %		
Prated	12.24 kW	14.24 kW		
	·			





SCOP	7.70	5.77
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.41 kW	8.62 kW
COP Tj = -7°C	7.43	5.28
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	4.51 kW	5.25 kW
COP Tj = +2°C	8.14	6.31
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = +7°C	3.71 kW	3.37 kW
$COP Tj = +7^{\circ}C$	8.35	7.00
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	3.68 kW	3.66 kW
COP Tj = 12°C	7.96	6.72
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
<u> </u>	•	-



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РТО	9 W	9 W
PSB	9 W	9 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	3917 kWh	6086 kWh



# Model: Thermia Calibra Eco 12 Duo 230V

Configure model		
Model name	Thermia Calibra Eco 12 Duo 230V	
Application	Heating (medium temp)	
Units	Indoor	
Climate Zone	Colder Climate + Warmer 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	5.21 kW	8.42 kW
El input	1.09 kW	2.84 kW
СОР	4.78	2.96

## **Average Climate**

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

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	219 %	162 %
Prated	11.52 kW	10.57 kW
SCOP	5.67	4.25
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.19 kW	9.35 kW
COP Tj = -7°C	4.66	3.23
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	6.20 kW	5.69 kW
COP Tj = +2°C	5.81	4.27
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	3.99 kW	3.66 kW
COP Tj = +7°C	6.39	5.06
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	2.77 kW	2.73 kW

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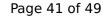


Cdh Tj = +12 °C       0.98       0.99         Pdh Tj = Tbiv       11.52 kW       10.57 kW         COP Tj = Tbiv       4.39       2.96         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh       11.52 kW       10.57 kW         COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh       4.39       2.96         WTOL       65 °C       65 °C         Poff       7 W       7 W         PTO       9 W       9 W         PSB       9 W       9 W         PCK       0 W       0 W         Supplementary Heater: Type of energy input       Electricity       Electricity         Supplementary Heater: PSUP       0.00 kW       0.00 kW			
Pdh Tj = Tbiv       11.52 kW       10.57 kW         COP Tj = Tbiv       4.39       2.96         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	COP Tj = 12°C	5.67	4.67
COP Tj = Tbiv       4.39       2.96         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	COP Tj = Tbiv	4.39	2.96
WTOL 65 °C 65 °C  Poff 7 W 7 W  PTO 9 W 9 W  PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity Supplementary Heater: PSUP 0.00 kW 0.00 kW	Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
Poff 7 W 7 W  PTO 9 W 9 W  PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
PTO 9 W 9 W  PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	WTOL	65 °C	65 °C
PSB 9 W 9 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	Poff	7 W	7 W
PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	РТО	9 W	9 W
Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0.00 kW 0.00 kW	PSB	9 W	9 W
Supplementary Heater: PSUP 0.00 kW 0.00 kW	PCK	o w	o w
	Supplementary Heater: Type of energy input	Electricity	Electricity
Annual energy consumption Qhe 4195 kWh 5134 kWh	Supplementary Heater: PSUP	0.00 kW	0.00 kW
	Annual energy consumption Qhe	4195 kWh	5134 kWh

## Warmer Climate

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

EN 14825		
	Low temperature	Medium temperature





This information was general		
$\eta_{s}$	222 %	164 %
Prated	11.52 kW	10.57 kW
SCOP	5.76	4.29
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.52 kW	10.57 kW
$COP Tj = +2^{\circ}C$	4.39	2.96
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = $+7^{\circ}$ C	7.41 kW	6.79 kW
$COP Tj = +7^{\circ}C$	5.38	3.81
Cdh Tj = +7 °C	0.99	1.00
Pdh Tj = 12°C	3.29 kW	3.02 kW
COP Tj = 12°C	6.47	5.12
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W





РТО	9 W	9 W
PSB	9 W	9 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	2674 kWh	3290 kWh

### Colder Climate

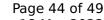
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	36 dB(A)	36 dB(A)	

EN 14825			
		Low temperature	Medium temperature
$\eta_{s}$		226 %	168 %
Prated		11.52 kW	10.57 kW
SCOP		5.85	4.39
Tbiv		-22 °C	-22 °C
TOL		-22 °C	-22 °C
Pdh Tj = -7°C		6.97 kW	6.40 kW
COP Tj = -7°C		5.69	4.02





This information was genera		iii database oii 10 i idi 202
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	4.24 kW	3.89 kW
COP Tj = +2°C	6.38	4.92
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.73 kW	2.50 kW
$COPTj = +7^{\circ}C$	5.79	4.88
Cdh Tj = +7 °C	0.98	0.98
Pdh Tj = 12°C	2.78 kW	2.74 kW
COP Tj = 12°C	5.51	4.74
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	11.52 kW	10.57 kW
COP Tj = Tbiv	4.39	2.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.52 kW	10.57 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.39	2.96
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	4856 kWh	5928 kWh	

Water/Water Heat Pump

## Heating

EN 14511-4		
Starting and operating test	passed	
Starting and operating test	passeu	
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	12.24 kW	14.24 kW	
El input	2.01 kW	3.84 kW	
СОР	6.08	3.71	

## Average Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	292 %	213 %
Prated	12.24 kW	14.24 kW





	<u> </u>	
SCOP	7.51	5.52
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.83 kW	12.60 kW
COP Tj = -7°C	6.35	4.09
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	6.59 kW	7.67 kW
COP Tj = +2°C	7.52	5.56
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = $+7$ °C	4.24 kW	4.93 kW
$COP Tj = +7^{\circ}C$	8.40	6.49
Cdh Tj = +7 °C	0.98	0.99
Pdh Tj = 12°C	3.70 kW	3.65 kW
COP Tj = 12°C	8.22	6.57
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
	l	





РТО	9 W	9 W
PSB	9 W	9 W
PCK	o w	9 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	3369 kWh	5331 kWh

### Warmer Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	295 %	214 %
Prated	12.24 kW	14.24 kW
SCOP	7.57	5.56
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.24 kW	14.24 kW
COP Tj = +2°C	6.08	3.71
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = $+7^{\circ}$ C	7.87 kW	9.16 kW
COP Tj = +7°C	7.15	4.96
Cdh Tj = +7 °C	0.99	1.00
	·	

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Pdh Tj = 12°C	3.50 kW	4.07 kW
COP Tj = 12°C	8.40	6.62
Cdh Tj = +12 °C	0.98	0.99
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W
РТО	9 W	9 W
PSB	9 W	9 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	2161 kWh	3425 kWh

## Colder Climate

EN 14825		
	Low temperature	Medium temperature
$\eta_s$	300 %	223 %
Prated	12.24 kW	14.24 kW





SCOP	7.70	5.77
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.41 kW	8.62 kW
$COP Tj = -7^{\circ}C$	7.43	5.28
Cdh Tj = -7 °C	0.99	1.00
Pdh Tj = +2°C	4.51 kW	5.25 kW
COP Tj = +2°C	8.14	6.31
Cdh Tj = +2 °C	0.98	0.99
Pdh Tj = $+7^{\circ}$ C	3.71 kW	3.37 kW
$COPTj = +7^{\circ}C$	8.35	7.00
Cdh Tj = $+7$ °C	0.98	0.98
Pdh Tj = 12°C	3.68 kW	3.66 kW
COP Tj = 12°C	7.96	6.72
Cdh Tj = +12 °C	0.98	0.98
Pdh Tj = Tbiv	12.24 kW	14.24 kW
COP Tj = Tbiv	6.08	3.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.24 kW	14.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	6.08	3.71
WTOL	65 °C	65 °C
Poff	7 W	7 W



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РТО	9 W	9 W
PSB	9 W	9 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	3917 kWh	6086 kWh