

Subtype TTF 10 basic

Certificate Holder	tecalor GmbH
Address	Lüchtringer Weg 3
ZIP	37603
City	Holzminden
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	TTF 10 basic
Registration number	011-1W0046
Heat Pump Type	Brine/Water
Refrigerant	R410A
Mass of Refrigerant	2.6 kg
Certification Date	28.10.2016

Model TTF 10 basic, all climates

Model name	TTF 10 basic, all climates
Application	Heating (low temp)
Units	Indoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water

EN 14511-4 | Heating

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

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.70 kW	
El input	2.22 kW	
COP	4.37	

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	51 dB(A)	

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	190 %	
Prated	10.00 kW	
SCOP	4.94	
Tbiv	-10 °C	
TOL	-20 °C	
Pdh Tj = -7°C	9.70 kW	
COP Tj = -7°C	4.44	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	9.80 kW	
COP Tj = +2°C	4.85	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	10.00 kW	
COP Tj = +7°C	5.28	
Cdh Tj = +7 °C	0.90	

Pdh Tj = 12°C	10.10 kW
COP Tj = 12°C	5.78
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	9.70 kW
COP Tj = Tbiv	4.37
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.37
WTOL	60 °C
Poff	0 W
PTO	78 W
PSB	3 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	4053 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	199 %	
Prated	12.00 kW	
SCOP	5.17	
Tbiv	-15 °C	
TOL	-22 °C	
Pdh Tj = -7°C	9.90 kW	
COP Tj = -7°C	5.07	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	10.00 kW	
COP Tj = +2°C	5.41	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	10.10 kW	
COP Tj = +7°C	5.70	
Cdh Tj = +7 °C	0.90	
Pdh Tj = 12°C	10.10 kW	
COP Tj = 12°C	5.75	
Cdh Tj = +12 °C	0.90	
Pdh Tj = Tbiv	9.90 kW	
COP Tj = Tbiv	4.93	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.90 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.93	
WTOL	60 °C	
Poff	0 W	
PTO	78 W	

PSB	3 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	2.40 kW
Annual energy consumption Q _{he}	5768 kWh
P _{d,h} T _j = -15°C (if TOL	9.90
COP T _j = -15°C (if TOL	4.93
C _{d,h} T _j = -15 °C	0.90

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	190 %	
Prated	10.00 kW	
SCOP	4.95	
T _{biv}	2 °C	
TOL	0 °C	
P _{d,h} T _j = +2°C	9.70 kW	
COP T _j = +2°C	4.37	
C _{d,h} T _j = +2 °C	0.90	
P _{d,h} T _j = +7°C	9.80 kW	
COP T _j = +7°C	4.76	
C _{d,h} T _j = +7 °C	0.90	
P _{d,h} T _j = 12°C	10.00 kW	
COP T _j = 12°C	5.44	
C _{d,h} T _j = +12 °C	0.90	
P _{d,h} T _j = T _{biv}	9.70 kW	
COP T _j = T _{biv}	4.37	
P _{d,h} T _j = TOL or P _{d,h} T _j = T _{designh} if TOL < T _{designh}	9.70 kW	
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	4.37	
WTOL	60 °C	
P _{off}	0 W	
PTO	78 W	
PSB	3 W	
PCK	0 W	
Supplementary Heater: Type of energy input	Electricity	
Supplementary Heater: PSUP	0.00 kW	
Annual energy consumption Q _{he}	2617 kWh	

Model TTF 10 basic, average climates

Model name	TTF 10 basic, average climates
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.70 kW	8.57 kW
El input	2.22 kW	3.67 kW
COP	4.37	2.34

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	190 %	114 %
Prated	10.00 kW	9.00 kW
SCOP	4.94	3.06
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-10 °C
Pdh Tj = -7°C	9.70 kW	8.70 kW
COP Tj = -7°C	4.44	2.46
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	9.80 kW	9.10 kW
COP Tj = +2°C	4.85	2.99
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	10.00 kW	9.30 kW
COP Tj = +7°C	5.28	3.42
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	10.10 kW	9.50 kW
COP Tj = 12°C	5.78	3.95
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.70 kW	8.60 kW
COP Tj = Tbiv	4.37	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.70 kW	8.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.37	2.34
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	78 W	78 W
PSB	3 W	3 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	4053 kWh	5788 kWh