

Subtype TTF 20

Certificate Holder	tecalor GmbH
Address	Fürstenbergerstr. 77
ZIP	37603
City	Holzminden
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	TTF 20
Registration number	011-1W0279
Heat Pump Type	Brine/Water
Refrigerant	R410A
Mass of Refrigerant	5.99 kg

Model TTF 20

Model name	TTF 20
Application	Heating (medium temp)
Units	Indoor, Outdoor
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	21.50 kW	20.10 kW
El input	4.61 kW	7.08 kW
COP	4.66	3.16

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	54 dB(A)	54 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	192 %	131 %
Prated	22.00 kW	20.00 kW
SCOP	5.00	3.48
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	21.50 kW	20.20 kW
COP Tj = -7°C	4.72	2.96
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	21.70 kW	20.70 kW
COP Tj = +2°C	5.06	3.48
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	21.80 kW	21.00 kW
COP Tj = +7°C	5.41	3.88

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	22.00 kW	21.30 kW
COP Tj = 12°C	5.80	4.36
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	21.50 kW	20.10 kW
COP Tj = Tbiv	4.66	2.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	21.50 kW	20.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.66	2.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	74 W	74 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	8904 kWh	11988 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	54 dB(A)	54 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	201 %	137 %
Prated	27.00 kW	25.00 kW
SCOP	5.23	3.63
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	21.80 kW	20.70 kW
COP Tj = -7°C	5.24	3.46
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	21.90 kW	21.00 kW
COP Tj = +2°C	5.51	3.87
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	21.90 kW	21.30 kW
COP Tj = +7°C	5.74	4.26
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	22.00 kW	21.50 kW
COP Tj = 12°C	5.78	4.60
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	21.70 kW	20.50 kW

COP Tj = Tbiv	5.12	3.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	21.50 kW	21.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.66	2.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	74 W	74 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.11 kW	5.05 kW
Annual energy consumption Qhe	12535 kWh	17067 kWh
Pdh Tj = -15°C (if TOL	21.50	21.10
COP Tj = -15°C (if TOL	4.66	2.84
Cdh Tj = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	54 dB(A)	54 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	188 %	128 %
Prated	22.00 kW	20.00 kW
SCOP	4.90	3.40
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	21.50 kW	20.10 kW
COP Tj = +2°C	4.66	2.84
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	21.70 kW	20.50 kW
COP Tj = +7°C	4.99	3.24
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	21.90 kW	21.10 kW
COP Tj = 12°C	5.54	4.03
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	21.50 kW	20.10 kW
COP Tj = Tbiv	4.66	2.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	21.50 kW	20.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.66	2.84

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	74 W	74 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5871 kWh	7884 kWh