Subtype TTF 52

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 52
Registration number	011-1W0188
Heat Pump Type	Brine/Water
Refrigerant	R410A
Mass of Refrigerant	12.5 kg
Certification Date	04.09.2019

Model TTF 52	
Model name	TTF 52
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

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	55.83 kW	52.18 kW
El input	11.61 kW	17.45 kW
COP	4.81	2.99

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	58 dB(A)	63 dB(A)
Sound power level outdoor	58 dB(A)	63 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	200 %	138 %
Prated	56.00 kW	52.00 kW
SCOP	5.20	3.65
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	55.90 kW	52.50 kW
COP Tj = -7°C	4.87	3.12
Pdh Tj = +2°C	56.30 kW	53.80 kW
COP Tj = +2°C	5.20	3.64
Pdh Tj = +7°C	56.70 kW	54.60 kW
COP Tj = +7°C	5.53	4.03
Pdh Tj = 12°C	57.00 kW	55.40 kW
COP Tj = 12°C	5.90	4.52
Pdh Tj = Tbiv	55.80 kW	52.20 kW

COP Tj = Tbiv	4.81	2.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	55.80 kW	52.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.81	2.99
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	99 W	99 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	22209 kWh	29469 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	58 dB(A)	63 dB(A)
Sound power level outdoor	58 dB(A)	63 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	207 %	144 %
Prated	69.00 kW	65.00 kW
SCOP	5.38	3.80
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	56.50 kW	53.80 kW
COP Tj = -7°C	5.36	3.62
Pdh Tj = +2°C	56.80 kW	54.60 kW
COP Tj = +2°C	5.63	4.03
Pdh Tj = +7°C	57.00 kW	55.30 kW
COP Tj = +7°C	5.84	4.42
Pdh Tj = 12°C	57.00 kW	55.70 kW
COP Tj = 12°C	5.88	4.74
Pdh Tj = Tbiv	56.40 kW	53.30 kW
COP Tj = Tbiv	5.25	3.39
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	55.80 kW	52.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.81	2.99
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	99 W	99 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	13.28 kW	13.12 kW
Annual energy consumption Qhe	31644 kWh	42330 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	58 dB(A)	63 dB(A)
Sound power level outdoor	58 dB(A)	63 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	199 %	138 %
Prated	56.00 kW	52.00 kW
SCOP	5.18	3.65
Tbiv	2 °C	2 °C
TOL	0 °C	0 °C
Pdh Tj = +2°C	55.80 kW	55.20 kW
COP Tj = +2°C	4.81	2.99
Pdh Tj = +7°C	56.20 kW	53.30 kW
COP Tj = +7°C	5.12	3.39
Pdh Tj = 12°C	56.80 kW	54.90 kW
COP Tj = 12°C	5.65	4.19
Pdh Tj = Tbiv	55.80 kW	52.20 kW
COP Tj = Tbiv	4.81	2.99
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	55.80 kW	52.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.81	2.99
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	99 W	99 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	14419 kWh	19157 kWh