Subtype TTF 31.6 I topline

Certificate Holder	tecalor GmbH
Address	Lüchtringer Weg 3
ZIP	37603
City	Holzminden
Country	DE
Certification Body	RISE CERT
Subtype title	TTF 31.6 I topline
Registration number	012-C700281
Heat Pump Type	Brine/Water and Water/Water
Refrigerant	R454B
Mass of Refrigerant	4 kg
Certification Date	24.02.2025
Testing basis	EN 14511:2022, EN 14825:2022, EN 12102:2022
Testing laboratory	RISE Research Institutes of Sweden

Model TTF 31.6 I topline

Model name	TTF 31.6 I topline
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Colder, Warmer, 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	19.96 kW	18.65 kW
El input	4.24 kW	6.26 kW
COP	4.71	2.98

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	208 %	158 %
Prated	33.12 kW	31.67 kW
SCOP	5.40	4.15
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	29.30 kW	28.02 kW
COP Tj = -7°C	4.40	3.07
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	17.83 kW	17.06 kW
COP Tj = +2°C	5.44	4.18
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	11.46 kW	10.96 kW
COP Tj = +7°C	5.99	4.82
Cdh Tj = +7 °C	0.990	1.000

Pdh Tj = 12°C	11.86 kW	11.69 kW
COP Tj = 12°C	6.03	5.01
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	33.12 kW	31.67 kW
COP Tj = Tbiv	4.20	2.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.12 kW	31.67 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.20	2.86
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	65 °C	65 °C
Poff	12 W	12 W
PTO	12 W	12 W
PSB	12 W	12 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	12666 kWh	15756 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	216 %	165 %
Prated	33.12 kW	31.67 kW
SCOP	5.60	4.31
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	20.05 kW	19.17 kW
COP Tj = -7°C	5.35	3.94
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	12.20 kW	11.67 kW
COP Tj = +2°C	5.96	4.73
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	11.86 kW	11.68 kW
COP Tj = +7°C	6.06	4.98
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	11.85 kW	11.74 kW
COP Tj = 12°C	5.91	5.16
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	33.12 kW	31.67 kW
COP Tj = Tbiv	4.20	2.86

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.12 kW	31.67 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.20	2.86
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	65 °C	65 °C
Poff	12 W	12 W
PTO	12 W	12 W
PSB	12 W	12 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	14576 kWh	18097 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	210 %	158 %
Prated	33.12 kW	31.67 kW
SCOP	5.46	4.14
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	33.12 kW	31.67 kW
COP Tj = +2°C	4.20	2.86
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	21.29 kW	20.36 kW
COP Tj = +7°C	5.18	3.73
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	11.86 kW	11.63 kW
COP Tj = 12°C	6.01	4.84
Cdh Tj = +12 °C	0.990	1.000
Pdh Tj = Tbiv	33.12 kW	31.67 kW
COP Tj = Tbiv	4.20	2.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.12 kW	31.67 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.20	2.86
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	65 °C	65 °C
Poff	12 W	12 W
PTO	12 W	12 W

PSB	12 W	12 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	8106 kWh	10211 kWh

Water/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	27.07 kW	24.90 kW
El input	4.22 kW	6.32 kW
COP	6.42	3.94

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	313 %	216 %
Prated	45.37 kW	42.88 kW
SCOP	8.03	5.61
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	40.13 kW	37.93 kW
COP Tj = -7°C	6.09	4.13
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	24.43 kW	23.09 kW
COP Tj = +2°C	8.16	5.60
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	15.70 kW	14.84 kW
COP Tj = +7°C	9.13	6.58
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	14.71 kW	14.56 kW
COP Tj = 12°C	9.27	6.98
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	45.37 kW	42.88 kW
COP Tj = Tbiv	5.62	3.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	45.37 kW	42.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.62	3.81

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	65 °C	65 °C
Poff	12 W	12 W
PTO	12 W	12 W
PSB	12 W	12 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	11679 kWh	15789 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	330 %	225 %
Prated	45.37 kW	42.88 kW
SCOP	8.46	5.83
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	27.46 kW	25.95 kW
COP Tj = -7°C	7.98	5.25
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	16.72 kW	15.80 kW
COP Tj = +2°C	9.21	6.42
Cdh Tj = +2 °C	0.990	1.000
Pdh Tj = +7°C	14.72 kW	14.56 kW
COP Tj = +7°C	9.39	6.97
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	14.67 kW	14.60 kW
COP Tj = 12°C	8.98	7.20
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	45.37 kW	42.88 kW
COP Tj = Tbiv	5.62	3.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	45.37 kW	42.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.62	3.81
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	65 °C	65 °C
Poff	12 W	12 W
PTO	12 W	12 W
PSB	12 W	12 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	13225 kWh	18132 kWh

EN 14825 | Warmer Climate		
	Low temperature	Medium temperature
ηs	318 %	217 %
Prated	45.37 kW	42.88 kW
SCOP	8.16	5.63
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	45.37 kW	42.88 kW
COP Tj = +2°C	5.62	3.81
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	29.17 kW	27.56 kW
COP Tj = +7°C	7.60	4.95
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	14.71 kW	14.51 kW
COP Tj = 12°C	9.29	6.76
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	45.37 kW	42.88 kW
COP Tj = Tbiv	5.62	3.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	45.37 kW	42.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.62	3.81
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	65 °C	65 °C
Poff	12 W	12 W
PTO	12 W	12 W
PSB	12 W	12 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	7426 kWh	10170 kWh