Subtype TTF\TTC 7.5

Certificate Holder	tecalor GmbH
Address	Lüchtringer Weg 3
ZIP	37603
City	Holzminden
Country	DE
Certification Body	RISE CERT
Subtype title	TTF\TTC 7.5
Registration number	012-C700247
Heat Pump Type	Brine/Water and Water/Water
Refrigerant	R452B
Mass of Refrigerant	0.85 kg
Certification Date	19.02.2024
Testing basis	EN 14511:2018, EN 14825:2018, EN 12102:2017.
Testing laboratory	RISE Research Institutes of Sweden

Model TTC 7.5	
Model name	TTC 7.5
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	Yes

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	7.35 kW	6.84 kW
El input	1.59 kW	2.41 kW
COP	4.62	2.81

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	191 %	140 %
Prated	7.97 kW	8.62 kW
SCOP	4.96	3.70
Tbiv	-8 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.36 kW	6.91 kW
COP Tj = -7°C	4.72	3.04
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	7.43 kW	7.15 kW
COP Tj = +2°C	4.95	3.73
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.49 kW	7.23 kW
COP Tj = +7°C	5.22	4.12
Cdh Tj = +7 °C	0.995	0.996

Pdh Tj = 12°C	7.55 kW	7.34 kW
COP Tj = 12°C	5.50	4.52
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.36 kW	6.96 kW
COP Tj = Tbiv	4.68	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.62 kW	1.77 kW
Annual energy consumption Qhe	3318 kWh	4812 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	196 %	144 %
Prated	8.25 kW	8.27 kW
SCOP	5.10	3.80
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.44 kW	7.09 kW
COP Tj = -7°C	5.01	3.56
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	7.49 kW	7.21 kW
COP Tj = +2°C	5.24	4.02
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.53 kW	7.30 kW
COP Tj = +7°C	5.43	4.40
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	7.54 kW	7.38 kW
COP Tj = 12°C	5.47	4.64
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.39 kW	6.96 kW
COP Tj = Tbiv	4.80	3.22

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.90 kW	1.41 kW
Annual energy consumption Qhe	3989 kWh	5356 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	42 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	140 %
Prated	8.61 kW	8.08 kW
SCOP	5.02	3.71
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.35 kW	6.85 kW
COP Tj = +2°C	4.62	2.82
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	7.42 kW	7.03 kW
COP Tj = +7°C	4.93	3.39
Cdh Tj = +7 °C	0.995	0.997
Pdh Tj = 12°C	7.51 kW	7.26 kW
COP Tj = 12°C	5.33	4.24
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.38 kW	6.93 kW
COP Tj = Tbiv	4.79	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W

PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.26 kW	1.23 kW
Annual energy consumption Qhe	2293 kWh	2909 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	9.32 kW	8.81 kW
El input	1.61 kW	2.46 kW
COP	5.78	3.59

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	243 %	180 %
Prated	10.13 kW	10.59 kW
SCOP	6.28	4.69
Tbiv	-8 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.35 kW	8.92 kW
COP Tj = -7°C	5.95	3.88
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	9.43 kW	9.16 kW
COP Tj = +2°C	6.27	4.70
Cdh Tj = +2 °C	0.995	0.997
Pdh Tj = +7°C	9.50 kW	9.30 kW
COP Tj = +7°C	6.62	5.26
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.55 kW	9.42 kW
COP Tj = 12°C	6.96	5.89
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.96 kW
COP Tj = Tbiv	5.90	4.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.78 kW	1.78 kW
Annual energy consumption Qhe	3332 kWh	4665 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	250 %	185 %
Prated	10.49 kW	10.69 kW
SCOP	6.46	4.84
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.45 kW	9.12 kW
COP Tj = -7°C	6.36	4.53
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	9.51 kW	9.28 kW
COP Tj = +2°C	6.65	5.15
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	9.54 kW	9.39 kW
COP Tj = +7°C	6.87	5.70
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.54 kW	9.46 kW
COP Tj = 12°C	6.92	6.15
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.38 kW	9.00 kW
COP Tj = Tbiv	6.07	4.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.14 kW	1.88 kW

Annual energy consumption Qhe	4001 kWh	5449 kWh

EN 14825 | Warmer Climate		
	Low temperature	Medium temperature
ηs	246 %	181 %
Prated	10.07 kW	10.43 kW
SCOP	6.34	4.73
Tbiv	3 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	9.35 kW	8.81 kW
COP Tj = +2°C	5.82	3.59
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	9.41 kW	9.06 kW
COP Tj = +7°C	6.19	4.32
Cdh Tj = +7 °C	0.996	0.997
Pdh Tj = 12°C	9.52 kW	9.35 kW
COP Tj = 12°C	6.73	5.47
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.94 kW
COP Tj = Tbiv	5.92	3.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.72 kW	1.62 kW
Annual energy consumption Qhe	2122 kWh	2947 kWh

Model TTF 7.5	
Model name	TTF 7.5
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	Yes

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	7.35 kW	6.84 kW
El input	1.59 kW	2.41 kW
COP	4.62	2.81

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	44 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	191 %	140 %
Prated	7.97 kW	8.62 kW
SCOP	4.96	3.70
Tbiv	-8 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.36 kW	6.91 kW
COP Tj = -7°C	4.72	3.04
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	7.43 kW	7.15 kW
COP Tj = +2°C	4.95	3.73
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.49 kW	7.23 kW
COP Tj = +7°C	5.22	4.12
Cdh Tj = +7 °C	0.995	0.996

Pdh Tj = 12°C	7.55 kW	7.34 kW
COP Tj = 12°C	5.50	4.52
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.36 kW	6.96 kW
COP Tj = Tbiv	4.68	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.62 kW	1.77 kW
Annual energy consumption Qhe	3318 kWh	4812 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	44 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	196 %	144 %
Prated	8.25 kW	8.27 kW
SCOP	5.10	3.80
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.44 kW	7.09 kW
COP Tj = -7°C	5.01	3.56
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	7.49 kW	7.21 kW
COP Tj = +2°C	5.24	4.02
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	7.53 kW	7.30 kW
COP Tj = +7°C	5.43	4.40
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	7.54 kW	7.38 kW
COP Tj = 12°C	5.47	4.64
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.39 kW	6.96 kW
COP Tj = Tbiv	4.80	3.22

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.90 kW	1.41 kW
Annual energy consumption Qhe	3989 kWh	5356 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	44 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	140 %
Prated	8.61 kW	8.08 kW
SCOP	5.02	3.71
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.35 kW	6.85 kW
COP Tj = +2°C	4.62	2.82
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	7.42 kW	7.03 kW
COP Tj = +7°C	4.93	3.39
Cdh Tj = +7 °C	0.995	0.997
Pdh Tj = 12°C	7.51 kW	7.26 kW
COP Tj = 12°C	5.33	4.24
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	7.38 kW	6.93 kW
COP Tj = Tbiv	4.79	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	6.85 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.62	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W

PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.26 kW	1.23 kW
Annual energy consumption Qhe	2293 kWh	2909 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	9.32 kW	8.81 kW
El input	1.61 kW	2.46 kW
COP	5.78	3.59

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	243 %	180 %
Prated	10.13 kW	10.59 kW
SCOP	6.28	4.69
Tbiv	-8 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.35 kW	8.92 kW
COP Tj = -7°C	5.95	3.88
Cdh Tj = -7 °C	0.996	0.997
Pdh Tj = +2°C	9.43 kW	9.16 kW
COP Tj = +2°C	6.27	4.70
Cdh Tj = +2 °C	0.995	0.997
Pdh Tj = +7°C	9.50 kW	9.30 kW
COP Tj = +7°C	6.62	5.26
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.55 kW	9.42 kW
COP Tj = 12°C	6.96	5.89
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.96 kW
COP Tj = Tbiv	5.90	4.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.78 kW	1.78 kW
Annual energy consumption Qhe	3332 kWh	4665 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	250 %	185 %
Prated	10.49 kW	10.69 kW
SCOP	6.46	4.84
Tbiv	-18 °C	-16 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.45 kW	9.12 kW
COP Tj = -7°C	6.36	4.53
Cdh Tj = -7 °C	0.995	0.997
Pdh Tj = +2°C	9.51 kW	9.28 kW
COP Tj = +2°C	6.65	5.15
Cdh Tj = +2 °C	0.995	0.996
Pdh Tj = +7°C	9.54 kW	9.39 kW
COP Tj = +7°C	6.87	5.70
Cdh Tj = +7 °C	0.995	0.996
Pdh Tj = 12°C	9.54 kW	9.46 kW
COP Tj = 12°C	6.92	6.15
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.38 kW	9.00 kW
COP Tj = Tbiv	6.07	4.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.14 kW	1.88 kW

Annual energy consumption Qhe	4001 kWh	5449 kWh

EN 14825 | Warmer Climate		
	Low temperature	Medium temperature
ηs	246 %	181 %
Prated	10.07 kW	10.43 kW
SCOP	6.34	4.73
Tbiv	3 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	9.35 kW	8.81 kW
COP Tj = +2°C	5.82	3.59
Cdh Tj = +2 °C	0.996	0.997
Pdh Tj = +7°C	9.41 kW	9.06 kW
COP Tj = +7°C	6.19	4.32
Cdh Tj = +7 °C	0.996	0.997
Pdh Tj = 12°C	9.52 kW	9.35 kW
COP Tj = 12°C	6.73	5.47
Cdh Tj = +12 °C	0.995	0.996
Pdh Tj = Tbiv	9.35 kW	8.94 kW
COP Tj = Tbiv	5.92	3.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.35 kW	8.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.82	3.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.996	0.997
WTOL	65 °C	65 °C
Poff	4 W	4 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.72 kW	1.62 kW
Annual energy consumption Qhe	2122 kWh	2947 kWh