

## Subtype TTF 07, TTF 07 cool, TTC 07, TTC 07 cool

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 07, TTF 07 cool, TTC 07, TTC 07 cool
Registration number	011-1W0040
Heat Pump Type	Brine/Water
Refrigerant	R410A
Mass of Refrigerant	1.72 kg
Certification Date	28.10.2016

## Model TTF 07, all climates

Model name	TTF 07, 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	7.50 kW	
El input	1.55 kW	
COP	4.84	

### EN 12102-1 | Average Climate

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

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	
Prated	8.00 kW	
SCOP	5.32	
Tbiv	-10 °C	
TOL	-10 °C	
Pdh Tj = -7°C	7.50 kW	
COP Tj = -7°C	4.90	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.60 kW	
COP Tj = +2°C	5.25	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.60 kW	
COP Tj = +7°C	5.60	
Cdh Tj = +7 °C	0.90	

Pdh Tj = 12°C	7.70 kW
COP Tj = 12°C	5.99
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	7.50 kW
COP Tj = Tbiv	4.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84
WTOL	65 °C
Poff	0 W
PTO	54 W
PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2912 kWh

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	211 %	
Prated	9.00 kW	
SCOP	5.48	
Tbiv	-15 °C	
TOL	-22 °C	
Pdh Tj = -7°C	7.60 kW	
COP Tj = -7°C	5.42	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.70 kW	
COP Tj = +2°C	5.70	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.70 kW	
COP Tj = +7°C	5.93	
Cdh Tj = +7 °C	0.90	
Pdh Tj = 12°C	7.70 kW	
COP Tj = 12°C	5.97	
Cdh Tj = +12 °C	0.90	
Pdh Tj = Tbiv	7.60 kW	
COP Tj = Tbiv	5.31	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.31	
WTOL	65 °C	
Poff	0 W	
PTO	54 W	

PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	1.80 kW
Annual energy consumption Q <sub>he</sub>	4184 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	7.60
COP T <sub>j</sub> = -15°C (if TOL	5.31
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.90

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	204 %	
Prated	8.00 kW	
SCOP	5.31	
T <sub>biv</sub>	2 °C	
TOL	0 °C	
P <sub>dh</sub> T <sub>j</sub> = +2°C	7.50 kW	
COP T <sub>j</sub> = +2°C	4.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = +7°C	7.60 kW	
COP T <sub>j</sub> = +7°C	5.17	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = 12°C	7.70 kW	
COP T <sub>j</sub> = 12°C	5.73	
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.50 kW	
COP T <sub>j</sub> = T <sub>biv</sub>	4.84	
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	7.50 kW	
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	4.84	
WTOL	65 °C	
P <sub>off</sub>	0 W	
PTO	54 W	
PSB	9 W	
PCK	0 W	
Supplementary Heater: Type of energy input	Electricity	
Supplementary Heater: PSUP	0.00 kW	
Annual energy consumption Q <sub>he</sub>	1888 kWh	

### Model TTF 07, average climates

Model name	TTF 07, 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	7.50 kW	6.91 kW
El input	1.55 kW	2.35 kW
COP	4.84	2.94

#### EN 12102-1 | Average Climate

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

#### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	139 %
Prated	8.00 kW	7.00 kW
SCOP	5.32	3.67
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.50 kW	7.00 kW
COP Tj = -7°C	4.90	3.07
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.60 kW	7.20 kW
COP Tj = +2°C	5.25	3.61
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	7.60 kW	7.30 kW
COP Tj = +7°C	5.60	4.02
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	7.70 kW	7.40 kW
COP Tj = 12°C	5.99	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.50 kW	6.90 kW
COP Tj = Tbiv	4.84	2.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84	2.94
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	54 W	54 W
PSB	9 W	9 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	2912 kWh	3891 kWh

## Model TTF 07 cool, all climates

Model name	TTF 07 cool, 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	7.50 kW	
El input	1.55 kW	
COP	4.84	

### EN 12102-1 | Average Climate

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

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	
Prated	8.00 kW	
SCOP	5.32	
Tbiv	-10 °C	
TOL	-10 °C	
Pdh Tj = -7°C	7.50 kW	
COP Tj = -7°C	4.90	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.60 kW	
COP Tj = +2°C	5.25	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.60 kW	
COP Tj = +7°C	5.60	
Cdh Tj = +7 °C	0.90	

Pdh Tj = 12°C	7.70 kW
COP Tj = 12°C	5.99
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	7.50 kW
COP Tj = Tbiv	4.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84
WTOL	65 °C
Poff	0 W
PTO	54 W
PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2912 kWh

### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	211 %	
Prated	9.00 kW	
SCOP	5.48	
Tbiv	-15 °C	
TOL	-22 °C	
Pdh Tj = -7°C	7.60 kW	
COP Tj = -7°C	5.42	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.70 kW	
COP Tj = +2°C	5.70	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.70 kW	
COP Tj = +7°C	5.93	
Cdh Tj = +7 °C	0.90	
Pdh Tj = 12°C	7.70 kW	
COP Tj = 12°C	5.97	
Cdh Tj = +12 °C	0.90	
Pdh Tj = Tbiv	7.60 kW	
COP Tj = Tbiv	5.31	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.31	
WTOL	65 °C	
Poff	0 W	
PTO	54 W	

PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	1.80 kW
Annual energy consumption Q <sub>he</sub>	4184 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	7.60
COP T <sub>j</sub> = -15°C (if TOL	5.31
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.90

### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	204 %	
Prated	8.00 kW	
SCOP	5.31	
T <sub>biv</sub>	2 °C	
TOL	0 °C	
P <sub>dh</sub> T <sub>j</sub> = +2°C	7.50 kW	
COP T <sub>j</sub> = +2°C	4.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = +7°C	7.60 kW	
COP T <sub>j</sub> = +7°C	5.17	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = 12°C	7.70 kW	
COP T <sub>j</sub> = 12°C	5.73	
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.50 kW	
COP T <sub>j</sub> = T <sub>biv</sub>	4.84	
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	7.50 kW	
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	4.84	
WTOL	65 °C	
P <sub>off</sub>	0 W	
PTO	54 W	
PSB	9 W	
PCK	0 W	
Supplementary Heater: Type of energy input	Electricity	
Supplementary Heater: PSUP	0.00 kW	
Annual energy consumption Q <sub>he</sub>	1888 kWh	

### Model TTF 07 cool, average climates

Model name	TTF 07 cool, 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	7.50 kW	6.91 kW
El input	1.55 kW	2.35 kW
COP	4.84	2.94

#### EN 12102-1 | Average Climate

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

#### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	139 %
Prated	8.00 kW	7.00 kW
SCOP	5.32	3.67
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.50 kW	7.00 kW
COP Tj = -7°C	4.90	3.07
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.60 kW	7.20 kW
COP Tj = +2°C	5.25	3.61
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	7.60 kW	7.30 kW
COP Tj = +7°C	5.60	4.02
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	7.70 kW	7.40 kW
COP Tj = 12°C	5.99	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.50 kW	6.90 kW
COP Tj = Tbiv	4.84	2.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84	2.94
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	54 W	54 W
PSB	9 W	9 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	2912 kWh	3891 kWh

## Model TTC 07, all climates

Model name	TTC 07, 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	7.50 kW	
El input	1.55 kW	
COP	4.84	

### EN 12102-1 | Average Climate

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

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	
Prated	8.00 kW	
SCOP	5.32	
Tbiv	-10 °C	
TOL	-10 °C	
Pdh Tj = -7°C	7.50 kW	
COP Tj = -7°C	4.90	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.60 kW	
COP Tj = +2°C	5.25	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.60 kW	
COP Tj = +7°C	5.60	
Cdh Tj = +7 °C	0.90	

Pdh Tj = 12°C	7.70 kW
COP Tj = 12°C	5.99
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	7.50 kW
COP Tj = Tbiv	4.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84
WTOL	65 °C
Poff	0 W
PTO	54 W
PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2912 kWh

### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	211 %	
Prated	9.00 kW	
SCOP	5.48	
Tbiv	-15 °C	
TOL	-22 °C	
Pdh Tj = -7°C	7.60 kW	
COP Tj = -7°C	5.42	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.70 kW	
COP Tj = +2°C	5.70	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.70 kW	
COP Tj = +7°C	5.93	
Cdh Tj = +7 °C	0.90	
Pdh Tj = 12°C	7.70 kW	
COP Tj = 12°C	5.97	
Cdh Tj = +12 °C	0.90	
Pdh Tj = Tbiv	7.60 kW	
COP Tj = Tbiv	5.31	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.31	
WTOL	65 °C	
Poff	0 W	
PTO	54 W	

PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	1.80 kW
Annual energy consumption Q <sub>he</sub>	4184 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	7.60
COP T <sub>j</sub> = -15°C (if TOL	5.31
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.90

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	204 %	
Prated	8.00 kW	
SCOP	5.31	
T <sub>biv</sub>	2 °C	
TOL	0 °C	
P <sub>dh</sub> T <sub>j</sub> = +2°C	7.50 kW	
COP T <sub>j</sub> = +2°C	4.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = +7°C	7.60 kW	
COP T <sub>j</sub> = +7°C	5.17	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = 12°C	7.70 kW	
COP T <sub>j</sub> = 12°C	5.73	
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.50 kW	
COP T <sub>j</sub> = T <sub>biv</sub>	4.84	
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	7.50 kW	
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	4.84	
WTOL	65 °C	
P <sub>off</sub>	0 W	
PTO	54 W	
PSB	9 W	
PCK	0 W	
Supplementary Heater: Type of energy input	Electricity	
Supplementary Heater: PSUP	0.00 kW	
Annual energy consumption Q <sub>he</sub>	1888 kWh	

### Model TTC 07, average climates

Model name	TTC 07, 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	7.50 kW	6.91 kW
El input	1.55 kW	2.35 kW
COP	4.84	2.94

#### EN 12102-1 | Average Climate

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

#### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	139 %
Prated	8.00 kW	7.00 kW
SCOP	5.32	3.67
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.50 kW	7.00 kW
COP Tj = -7°C	4.90	3.07
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.60 kW	7.20 kW
COP Tj = +2°C	5.25	3.61
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	7.60 kW	7.30 kW
COP Tj = +7°C	5.60	4.02
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	7.70 kW	7.40 kW
COP Tj = 12°C	5.99	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.50 kW	6.90 kW
COP Tj = Tbiv	4.84	2.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84	2.94
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	54 W	54 W
PSB	9 W	9 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	2912 kWh	3891 kWh

### Model TTC 07 cool, all climates

Model name	TTC 07 cool, 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	7.50 kW	
El input	1.55 kW	
COP	4.84	

#### EN 12102-1 | Average Climate

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

#### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	
Prated	8.00 kW	
SCOP	5.32	
Tbiv	-10 °C	
TOL	-10 °C	
Pdh Tj = -7°C	7.50 kW	
COP Tj = -7°C	4.90	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.60 kW	
COP Tj = +2°C	5.25	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.60 kW	
COP Tj = +7°C	5.60	
Cdh Tj = +7 °C	0.90	

Pdh Tj = 12°C	7.70 kW
COP Tj = 12°C	5.99
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	7.50 kW
COP Tj = Tbiv	4.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84
WTOL	65 °C
Poff	0 W
PTO	54 W
PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	2912 kWh

### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	211 %	
Prated	9.00 kW	
SCOP	5.48	
Tbiv	-15 °C	
TOL	-22 °C	
Pdh Tj = -7°C	7.60 kW	
COP Tj = -7°C	5.42	
Cdh Tj = -7 °C	0.90	
Pdh Tj = +2°C	7.70 kW	
COP Tj = +2°C	5.70	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	7.70 kW	
COP Tj = +7°C	5.93	
Cdh Tj = +7 °C	0.90	
Pdh Tj = 12°C	7.70 kW	
COP Tj = 12°C	5.97	
Cdh Tj = +12 °C	0.90	
Pdh Tj = Tbiv	7.60 kW	
COP Tj = Tbiv	5.31	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.31	
WTOL	65 °C	
Poff	0 W	
PTO	54 W	

PSB	9 W
PCK	0 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	1.80 kW
Annual energy consumption Q <sub>he</sub>	4184 kWh
P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL	7.60
COP T <sub>j</sub> = -15°C (if TOL	5.31
C <sub>dh</sub> T <sub>j</sub> = -15 °C	0.90

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η <sub>s</sub>	204 %	
Prated	8.00 kW	
SCOP	5.31	
T <sub>biv</sub>	2 °C	
TOL	0 °C	
P <sub>dh</sub> T <sub>j</sub> = +2°C	7.50 kW	
COP T <sub>j</sub> = +2°C	4.84	
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = +7°C	7.60 kW	
COP T <sub>j</sub> = +7°C	5.17	
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = 12°C	7.70 kW	
COP T <sub>j</sub> = 12°C	5.73	
C <sub>dh</sub> T <sub>j</sub> = +12 °C	0.90	
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	7.50 kW	
COP T <sub>j</sub> = T <sub>biv</sub>	4.84	
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	7.50 kW	
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	4.84	
WTOL	65 °C	
P <sub>off</sub>	0 W	
PTO	54 W	
PSB	9 W	
PCK	0 W	
Supplementary Heater: Type of energy input	Electricity	
Supplementary Heater: PSUP	0.00 kW	
Annual energy consumption Q <sub>he</sub>	1888 kWh	

### Model TTC 07 cool, average climates

Model name	TTC 07 cool, 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	7.50 kW	6.91 kW
El input	1.55 kW	2.35 kW
COP	4.84	2.94

#### EN 12102-1 | Average Climate

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

#### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	205 %	139 %
Prated	8.00 kW	7.00 kW
SCOP	5.32	3.67
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.50 kW	7.00 kW
COP Tj = -7°C	4.90	3.07
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.60 kW	7.20 kW
COP Tj = +2°C	5.25	3.61
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	7.60 kW	7.30 kW
COP Tj = +7°C	5.60	4.02
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	7.70 kW	7.40 kW
COP Tj = 12°C	5.99	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.50 kW	6.90 kW
COP Tj = Tbiv	4.84	2.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.84	2.94
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	54 W	54 W
PSB	9 W	9 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	2912 kWh	3891 kWh