

## Subtype TTF 27

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 27
Registration number	011-1W0280
Heat Pump Type	Brine/Water
Refrigerant	R410A
Mass of Refrigerant	7.2 kg

## Model TTF 27

Model name	TTF 27
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	29.69 kW	26.69 kW
El input	6.12 kW	9.57 kW
COP	4.85	2.79

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	55 dB(A)	55 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	203 %	132 %
Prated	30.00 kW	27.00 kW
SCOP	5.28	3.50
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	29.80 kW	27.00 kW
COP Tj = -7°C	4.92	2.92
Pdh Tj = +2°C	30.10 kW	28.00 kW
COP Tj = +2°C	5.31	3.49
Pdh Tj = +7°C	30.40 kW	28.70 kW
COP Tj = +7°C	5.71	3.93
Pdh Tj = 12°C	30.70 kW	29.30 kW
COP Tj = 12°C	6.16	4.47
Pdh Tj = Tbiv	29.70 kW	26.70 kW

COP Tj = Tbiv	4.85	2.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	29.70 kW	26.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.85	2.79
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	11619 kWh	15758 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	55 dB(A)	55 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	213 %	139 %
Prated	37.00 kW	34.00 kW
SCOP	5.53	3.68
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	30.20 kW	28.00 kW
COP Tj = -7°C	5.51	3.47
Pdh Tj = +2°C	30.50 kW	28.70 kW
COP Tj = +2°C	5.83	3.92
Pdh Tj = +7°C	30.60 kW	29.20 kW
COP Tj = +7°C	6.09	4.36
Pdh Tj = 12°C	30.70 kW	29.60 kW
COP Tj = 12°C	6.13	4.73
Pdh Tj = Tbiv	30.10 kW	27.60 kW
COP Tj = Tbiv	5.38	3.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	29.70 kW	26.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.85	2.79
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	7.26 kW	7.13 kW
Annual energy consumption Q <sub>he</sub>	1646 kWh	22680 kWh

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	55 dB(A)	55 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	201 %	131 %
Prated	30.00 kW	27.00 kW
SCOP	5.23	3.48
T <sub>biv</sub>	2 °C	2 °C
TOL	2 °C	2 °C
P <sub>d,h</sub> T <sub>j</sub> = +2°C	29.70 kW	26.70 kW
COP T <sub>j</sub> = +2°C	4.85	2.79
P <sub>d,h</sub> T <sub>j</sub> = +7°C	30.00 kW	27.60 kW
COP T <sub>j</sub> = +7°C	5.22	3.22
P <sub>d,h</sub> T <sub>j</sub> = 12°C	30.50 kW	28.90 kW
COP T <sub>j</sub> = 12°C	5.85	4.10
P <sub>d,h</sub> T <sub>j</sub> = T <sub>biv</sub>	29.70 kW	26.70 kW
COP T <sub>j</sub> = T <sub>biv</sub>	4.85	2.79
P <sub>d,h</sub> T <sub>j</sub> = TOL or P <sub>d,h</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	29.70 kW	26.70 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	4.85	2.79
C <sub>d,h</sub> T <sub>j</sub> = TOL or P <sub>d,h</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	0.90	0.90
WTOL	60 °C	60 °C
P <sub>off</sub>	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 Q <sub>he</sub>	7587 kWh	10292 kWh