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Summary of	TTF 4.6, TTF 6.6, TTF 8.6	Reg. No.	011-1W0396
Certificate Holder			
Name	tecalor GmbH		
Address	Fürstenbergerstr. 77	Zip	37603
City	Holzminden	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Subtype title	TTF 4.6, TTF 6.6, TTF 8.6		
Heat Pump Type	Brine/Water		
Refrigerant	R454C		
Mass of Refrigerant	2.2 kg		
Certification Date	08.09.2020		

## Model: TTF 4.6 (cool) / TTC 4.6 (cool)

Configure model	
Model name	TTF 4.6 (cool) / TTC 4.6 (cool)
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	1.96 kW	1.26 kW
El input	0.43 kW	0.47 kW
COP	4.60	2.73

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### Average Climate

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### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	195 %	153 %
Prated	4.23 kW	3.76 kW
SCOP	5.07	4.02
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.73 kW	3.32 kW
COP Tj = -7°C	5.01	3.58
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	2.26 kW	2.02 kW
COP Tj = +2°C	5.38	4.22
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.45 kW	1.30 kW
COP Tj = +7°C	5.34	4.47
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.13 kW	1.08 kW

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COP Tj = 12°C	5.32	4.49
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.23 kW	3.76 kW
COP Tj = Tbiv	4.86	3.43
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.23 kW	3.76 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.86	3.43
WTOL	75 °C	75 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 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	1723 kWh	1934 kWh

## Warmer Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	38 dB(A)	38 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>

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$\eta_s$	187 %	147 %
Prated	4.23 kW	3.76 kW
SCOP	4.87	3.87
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.23 kW	3.76 kW
COP Tj = +2°C	4.86	3.43
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	2.71 kW	2.41 kW
COP Tj = +7°C	5.24	3.95
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.20 kW	1.08 kW
COP Tj = 12°C	5.31	4.39
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.23 kW	3.76 kW
COP Tj = Tbiv	4.86	3.43
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.23 kW	3.76 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.86	3.43
WTOL	75 °C	75 °C
Poff	16 W	16 W

This information was generated by the HP KEYMARK database on 18 Mar 2022

PTO	16 W	16 W
PSB	16 W	16 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 Q <sub>he</sub>	1159 kWh	1300 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	38 dB(A)	38 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	201 %	157 %
Prated	4.23 kW	3.76 kW
SCOP	5.21	4.12
T <sub>biv</sub>	-22 °C	-22 °C
TOL	-22 °C	-22 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	2.55 kW	2.27 kW
COP T <sub>j</sub> = -7°C	5.37	4.10

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Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	1.55 kW	1.38 kW
COP Tj = +2°C	5.45	4.37
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.13 kW	1.09 kW
COP Tj = +7°C	5.31	4.51
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.12 kW	1.09 kW
COP Tj = 12°C	5.21	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.23 kW	3.76 kW
COP Tj = Tbiv	4.86	3.43
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.23 kW	3.76 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.86	3.43
WTOL	75 °C	75 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

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Annual energy consumption $Q_{he}$	2000 kWh	2252 kWh
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## Model: TTF 6.6 (cool) / TTC 6.6 (cool)

Configure model	
Model name	TTF 6.6 (cool) / TTC 6.6 (cool)
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	2.37 kW	2.01 kW
El input	0.52 kW	0.69 kW
COP	4.60	2.91

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### Average Climate

### EN 12102-1

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

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	200 %	160 %
Prated	6.70 kW	6.05 kW
SCOP	5.20	4.18
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	5.91 kW	5.34 kW
COP Tj = -7°C	4.71	3.55
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	3.59 kW	3.25 kW
COP Tj = +2°C	5.39	4.27
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	2.30 kW	2.09 kW
COP Tj = +7°C	5.60	4.76
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.14 kW	1.08 kW

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COP Tj = 12°C	5.47	4.61
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.70 kW	6.05 kW
COP Tj = Tbiv	4.52	3.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.52	3.34
WTOL	75 °C	75 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 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	2662 kWh	2988 kWh

## Warmer Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	41 dB(A)	41 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>

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$\eta_s$	198 %	158 %
Prated	6.70 kW	6.05 kW
SCOP	5.14	4.14
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.70 kW	6.05 kW
COP Tj = +2°C	4.52	3.34
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.29 kW	3.88 kW
COP Tj = +7°C	5.19	3.97
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.90 kW	1.72 kW
COP Tj = 12°C	5.71	4.81
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.70 kW	6.05 kW
COP Tj = Tbiv	4.52	3.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.52	3.34
WTOL	75 °C	75 °C
Poff	16 W	16 W

This information was generated by the HP KEYMARK database on 18 Mar 2022

PTO	16 W	16 W
PSB	16 W	16 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 Q <sub>he</sub>	1741 kWh	1954 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	41 dB(A)	41 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	207 %	166 %
Prated	6.70 kW	6.05 kW
SCOP	5.38	4.34
T <sub>biv</sub>	-22 °C	-22 °C
TOL	-22 °C	-22 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	4.04 kW	3.65 kW
COP T <sub>j</sub> = -7°C	5.36	4.15

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Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	2.45 kW	2.22 kW
COP Tj = +2°C	5.64	4.68
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.57 kW	1.42 kW
COP Tj = +7°C	5.76	4.80
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.13 kW	1.10 kW
COP Tj = 12°C	5.32	4.73
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.70 kW	6.05 kW
COP Tj = Tbiv	4.52	3.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.52	3.34
WTOL	75 °C	75 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

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Annual energy consumption Q <sub>he</sub>	3069 kWh	3439 kWh
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## Model: TTF 8.6 (cool) / TTC 8.6 (cool)

Configure model	
Model name	TTF 8.6 (cool) / TTC 8.6 (cool)
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

### Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	2.78 kW	2.42 kW
El input	0.60 kW	0.79 kW
COP	4.67	3.07

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### Average Climate



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### EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	40 dB(A)	40 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	197 %	158 %
Prated	7.66 kW	6.93 kW
SCOP	5.12	4.14
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.76 kW	6.12 kW
COP Tj = -7°C	4.53	3.44
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.11 kW	3.72 kW
COP Tj = +2°C	5.25	4.21
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	2.64 kW	2.39 kW
COP Tj = +7°C	5.59	4.69
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.16 kW	1.08 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = 12°C	5.52	4.61
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.66 kW	6.93 kW
COP Tj = Tbiv	4.29	3.22
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.66 kW	6.93 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.29	3.22
WTOL	75 °C	75 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 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	3094 kWh	3461 kWh

## Warmer Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	40 dB(A)	40 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>

This information was generated by the HP KEYMARK database on 18 Mar 2022

$\eta_s$	197 %	157 %
Prated	7.66 kW	6.93 kW
SCOP	5.13	4.13
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.66 kW	6.93 kW
COP Tj = +2°C	4.29	3.22
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.91 kW	4.45 kW
COP Tj = +7°C	5.09	3.88
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	2.17 kW	1.97 kW
COP Tj = 12°C	5.75	4.85
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.66 kW	6.93 kW
COP Tj = Tbiv	4.29	3.22
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.66 kW	6.93 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.29	3.22
WTOL	75 °C	75 °C
Poff	16 W	16 W

This information was generated by the HP KEYMARK database on 18 Mar 2022

PTO	16 W	16 W
PSB	16 W	16 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 Q <sub>he</sub>	1997 kWh	2243 kWh

## Colder Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	40 dB(A)	40 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	204 %	163 %
Prated	7.66 kW	6.93 kW
SCOP	5.29	4.29
T <sub>biv</sub>	-22 °C	-22 °C
TOL	-22 °C	-22 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	4.62 kW	4.18 kW
COP T <sub>j</sub> = -7°C	5.17	4.07

This information was generated by the HP KEYMARK database on 18 Mar 2022

Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	2.81 kW	2.54 kW
COP Tj = +2°C	5.60	4.60
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.80 kW	1.63 kW
COP Tj = +7°C	5.76	4.90
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.13 kW	1.09 kW
COP Tj = 12°C	5.34	4.75
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.66 kW	6.93 kW
COP Tj = Tbiv	4.29	3.22
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.66 kW	6.93 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.29	3.22
WTOL	75 °C	75 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

Annual energy consumption Q <sub>he</sub>	3570 kWh	3985 kWh
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