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Summary of	TTF 44.5	Reg. No.	011-1W0458
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 44.5		
Heat Pump Type	Brine/Water		
Refrigerant	R410A		
Mass of Refrigerant	4.4 kg		
Certification Date	15.03.2021		
Testing basis	HP KEYMARK certification scheme rules V8		

Model: TTF 44.5

Configure model	
Model name	TTF 44.5
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	26.71 kW	22.39 kW
El input	5.81 kW	7.52 kW
COP	4.60	2.98

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

Warmer Climate

This information was generated by the HP KEYMARK database on 22 Jun 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	48 dB(A)	50 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	220 %	167 %
Prated	38.06 kW	35.62 kW
SCOP	5.70	4.38
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	38.06 kW	35.62 kW
COP Tj = +2°C	4.29	2.95
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	24.47 kW	22.90 kW
COP Tj = +7°C	5.35	3.89
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	12.71 kW	12.48 kW
COP Tj = 12°C	6.31	5.17
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	38.06 kW	35.62 kW

This information was generated by the HP KEYMARK database on 22 Jun 2022

COP $T_j = T_{biv}$	4.29	2.95
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	38.06 kW	35.62 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	4.29	2.95
WTOL	65 °C	65 °C
Poff	7 W	7 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q_{he}	8920 kWh	10862 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	48 dB(A)	50 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	226 %	174 %
Prated	38.06 kW	35.62 kW

This information was generated by the HP KEYMARK database on 22 Jun 2022

SCOP	5.86	4.55
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	23.04 kW	21.56 kW
COP Tj = -7°C	5.57	4.12
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	14.02 kW	13.12 kW
COP Tj = +2°C	6.27	5.02
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	12.71 kW	12.56 kW
COP Tj = +7°C	6.35	5.32
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	12.70 kW	12.65 kW
COP Tj = 12°C	6.19	5.49
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	38.06 kW	35.62 kW
COP Tj = Tbiv	4.29	2.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	38.06 kW	35.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.29	2.95
WTOL	65 °C	65 °C
Poff	7 W	7 W

This information was generated by the HP KEYMARK database on 22 Jun 2022

PTO	7 W	7 W
PSB	7 W	7 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	16014 kWh	19290 kWh
P _{dh} T _j = -15°C (if TOL<-20°C)	38.06	35.62
COP T _j = -15°C (if TOL<-20°C)	4.29	2.95
C _{dh} T _j = -15 °C	0.90	0.90

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	48 dB(A)	50 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	218 %	168 %
Prated	38.06 kW	35.62 kW
SCOP	5.65	4.39
T _{biv}	-10 °C	-10 °C

This information was generated by the HP KEYMARK database on 22 Jun 2022

TOL	-10 °C	-10 °C
Pdh Tj = -7°C	33.67 kW	31.51 kW
COP Tj = -7°C	4.56	3.21
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	20.49 kW	19.18 kW
COP Tj = +2°C	5.68	4.39
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	13.18 kW	12.33 kW
COP Tj = +7°C	6.28	5.16
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	12.70 kW	12.57 kW
COP Tj = 12°C	6.31	5.34
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	38.06 kW	35.62 kW
COP Tj = Tbiv	4.29	2.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	38.06 kW	35.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.29	2.95
WTOL	65 °C	65 °C
Poff	7 W	7 W
PTO	7 W	7 W
PSB	7 W	7 W

This information was generated by the HP KEYMARK database on 22 Jun 2022

PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	13917 kWh	16768 kWh