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Summary of	TTF 52	Reg. No.	011-1W0188
Certificate Holder			
Name	tecalor GmbH		
Address	Fürstenbergerstr. 77	Zip	37603
City	Holzminden	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Name of testing laboratory	TÜV Rheinland Energy GmbH		
Subtype title	TTF 52		
Heat Pump Type	Brine/Water		
Refrigerant	R410a		
Mass Of Refrigerant	12.5 kg		
Certification Date	04.09.2019		

Model: TTF 52

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	55.83 kW	52.18 kW
El input	11.61 kW	17.45 kW
COP	4.81	2.99
Indoor water flow rate	6.86 m³/h	6.86 m³/h

Average Climate

EN 14825		
	Low temperature	**Medium temperature**

η_s	200 %	138 %
Prated	56.00 kW	52.00 kW
SCOP	5.20	3.65
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	55.90 kW	52.50 kW
COP Tj = -7°C	4.87	3.12
Pdh Tj = +2°C	56.30 kW	53.80 kW
COP Tj = +2°C	5.20	3.64
Pdh Tj = +7°C	56.70 kW	54.60 kW
COP Tj = +7°C	5.53	4.03
Pdh Tj = 12°C	57.00 kW	55.40 kW
COP Tj = 12°C	5.90	4.52
Pdh Tj = Tbiv	55.80 kW	52.20 kW
COP Tj = Tbiv	4.81	2.99
Pdh Tj = TOL	55.80 kW	52.20 kW
COP Tj = TOL	4.81	2.99
Cdh	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	99 W	99 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	22209 kWh	29469 kWh

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	58 dB(A)	63 dB(A)
Sound power level outdoor	58 dB(A)	63 dB(A)

Warmer Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	199 %	138 %
Prated	56.00 kW	52.00 kW
SCOP	5.18	3.65
Tbiv	2 °C	2 °C
TOL	0 °C	0 °C
Pdh Tj = +2°C	55.80 kW	55.20 kW
COP Tj = +2°C	4.81	2.99

Pdh Tj = +7°C	56.20 kW	53.30 kW
COP Tj = +7°C	5.12	3.39
Pdh Tj = 12°C	56.80 kW	54.90 kW
COP Tj = 12°C	5.65	4.19
Pdh Tj = Tbiv	55.80 kW	52.20 kW
COP Tj = Tbiv	4.81	2.99
Pdh Tj = TOL	55.80 kW	52.20 kW
COP Tj = TOL	4.81	2.99
Cdh	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	99 W	99 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	14419 kWh	19157 kWh

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	58 dB(A)	63 dB(A)
Sound power level outdoor	58 dB(A)	63 dB(A)

Colder Climate

EN 14825		
	Low temperature	**Medium temperature**
η_s	207 %	144 %
Prated	69.00 kW	65.00 kW
SCOP	5.38	3.80
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	56.50 kW	53.80 kW
COP Tj = -7°C	5.36	3.62
Pdh Tj = +2°C	56.80 kW	54.60 kW
COP Tj = +2°C	5.63	4.03
Pdh Tj = +7°C	57.00 kW	55.30 kW
COP Tj = +7°C	5.84	4.42
Pdh Tj = 12°C	57.00 kW	55.70 kW
COP Tj = 12°C	5.88	4.74

Pdh Tj = Tbiv	56.40 kW	53.30 kW
COP Tj = Tbiv	5.25	3.39
Pdh Tj = TOL	55.80 kW	52.20 kW
COP Tj = TOL	4.81	2.99
Cdh	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	99 W	99 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	13.28 kW	13.12 kW
Annual energy consumption Qhe	31644 kWh	42330 kWh

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	58 dB(A)	63 dB(A)
Sound power level outdoor	58 dB(A)	63 dB(A)