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Summary of	TTF 33.5	Reg. No.	011-1W0457	
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 33.5	TTF 33.5		
Heat Pump Type	Brine/Water			
Refrigerant	R410A	R410A		
Mass of Refrigerant	3.9 kg	3.9 kg		
Certification Date	15.03.2021	15.03.2021		
Testing basis	HP KEYMARK certification scheme rules V8			





Model: TTF 33.5

Configure model		
Model name	TTF 33.5	
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	20.18 kW	18.93 kW
El input	4.26 kW	6.42 kW
СОР	4.73	2.95

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

Average Climate

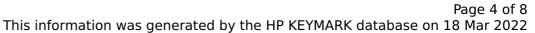


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EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	214 %	159 %
Prated	33.28 kW	31.13 kW
SCOP	5.55	4.18
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	29.44 kW	27.54 kW
COP Tj = -7°C	4.63	3.14
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	17.92 kW	16.76 kW
COP Tj = +2°C	5.57	4.21
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	11.52 kW	10.78 kW
$COP Tj = +7^{\circ}C$	6.11	4.83
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	12.52 kW	12.16 kW

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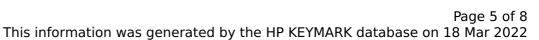




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COP Tj = 12°C	6.05	5.00
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	33.28 kW	31.13 kW
COP Tj = Tbiv	4.26	2.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.28 kW	31.13 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.26	2.86
WTOL	65 °C	65 °C
Poff	12 W	12 W
РТО	12 W	12 W
PSB	12 W	12 W
PCK	o 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 Qhe	12358 kWh	15305 kWh

Warmer Climate

erature Medium temperature
160 %
31.13 kW
4.19





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Tbiv	2 °C	2 °C	
TOL	2 °C	2 °C	
Pdh Tj = +2°C	33.28 kW	31.13 kW	
$COPTj = +2^{\circ}C$	4.26	2.86	
Cdh Tj = +2 °C	0.90	0.90	
Pdh Tj = $+7^{\circ}$ C	21.39 kW	20.01 kW	
COP Tj = +7°C	5.30	3.78	
Cdh Tj = +7 °C	0.90	0.90	
Pdh Tj = 12°C	12.51 kW	12.08 kW	
COP Tj = 12°C	6.06	4.85	
Cdh Tj = +12 °C	0.90	0.90	
Pdh Tj = Tbiv	33.28 kW	31.13 kW	
COP Tj = Tbiv	4.26	2.86	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.28 kW	31.13 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.26	2.86	
WTOL	65 °C	65 °C	
Poff	12 W	12 W	
РТО	12 W	12 W	
PSB	12 W	12 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 Qhe	7963 kWh	9906 kWh

EN 12102-1				
	Low temperature	Medium temperature		
Sound power level indoor	47 dB(A)	47 dB(A)		

Colder Climate

EN 14825			
	Low temperature	Medium temperature	
η_{s}	221 %	165 %	
Prated	33.28 kW	31.13 kW	
SCOP	5.72	4.33	
Tbiv	-22 °C	-22 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	20.14 kW	18.84 kW	
COP Tj = -7°C	5.49	3.99	
Cdh Tj = -7 °C	0.90	0.90	
Pdh Tj = +2°C	12.26 kW	11.47 kW	
COP Tj = +2°C	6.11	4.73	
Cdh Tj = +2 °C	0.90	0.90	
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Pdh Tj = +7°C	12.53 kW	12.14 kW		
$COP Tj = +7^{\circ}C$	6.10	4.98		
Cdh Tj = +7 °C	0.90	0.90		
Pdh Tj = 12°C	12.49 kW	12.22 kW		
COP Tj = 12°C	5.91	5.12		
Cdh Tj = +12 °C	0.90	0.90		
Pdh Tj = Tbiv	33.28 kW	31.13 kW		
COP Tj = Tbiv	4.26	2.86		
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.28 kW	31.13 kW		
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.26	2.86		
WTOL	65 °C	65 °C		
Poff	12 W	12 W		
РТО	12 W	12 W		
PSB	12 W	12 W		
PCK	o 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 Qhe	14325 kWh	17698 kWh		
Pdh Tj = -15°C (if TOL<-20°C)	33.28	31.13		
COP Tj = -15°C (if TOL<-20°C)	4.26	2.86		
Cdh Tj = -15 °C	0.90	0.90		





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EN 12102-1				
	Low temperature	Medium temperature		
Sound power level indoor	47 dB(A)	47 dB(A)		