

Summary of	TTL 15 AS, TTL 15 ACS	Reg. No.	011-1W0048
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	VDE Prüf- und Zertifizierungsinstitut GmbH		
Subtype title	TTL 15 AS, TTL 15 ACS		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	Other		
Mass Of Refrigerant	4.2 kg		
Certification Date	01.11.2016		



Model: TTL 15 AS

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	4.68 kW	3.74 kW
El input	1.11 kW	1.37 kW
СОР	4.23	2.73
Indoor water flow rate	0.78 m³/h	0.50 m³/h

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

Average Climate

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





EN 14825

	Low temperature	Medium temperature
η_{s}	151 %	122 %
Prated	8.00 kW	8.00 kW
SCOP	3.84	3.20
Tbiv	-8 °C	-8 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.10 kW
COP Tj = -7°C	2.49	2.18
Cdh	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.04	3.30
Cdh	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.20 kW
COP Tj = +7°C	5.08	4.07
Cdh	0.90	0.90
Pdh Tj = 12°C	4.40 kW	4.00 kW
COP Tj = 12°C	6.30	5.14
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.10 kW	7.40 kW
COP Tj = Tbiv	2.42	2.13





Pdh Tj = TOL	6.60 kW	7.00 kW
COP Tj = TOL	2.71	1.97
WTOL	65 °C	65 °C
Poff	16 W	16 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4303 kWh	5300 kWh

Warmer Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	153 %	120 %
Prated	4.00 kW	4.00 kW
SCOP	3.91	2.99
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.20 kW	4.00 kW
COP Tj = +2°C	3.48	2.50





Cdh	0.90	0.90
Pdh Tj = +7°C	4.30 kW	3.90 kW
COP Tj = +7°C	4.46	3.16
Cdh	0.90	0.90
Pdh Tj = 12°C	4.30 kW	3.80 kW
COP Tj = 12°C	5.89	4.57
Cdh	0.90	0.90
Pdh Tj = Tbiv	4.20 kW	4.00 kW
COP Tj = Tbiv	3.48	2.50
Pdh Tj = TOL	9.20 kW	9.80 kW
COP Tj = TOL	2.15	1.98
WTOL	65 °C	65 °C
Poff	16 W	16 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1367 kWh	1750 kWh

Colder Climate





EN 14825

	Low temperature	Medium temperature
η_{s}	137 %	118 %
Prated	11.00 kW	12.00 kW
SCOP	3.51	3.05
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.00 kW
COP Tj = -7°C	2.72	2.45
Cdh	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.45	3.70
Cdh	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.30 kW
COP Tj = +7°C	5.44	4.53
Cdh	0.90	0.90
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	6.30	5.44
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.70 kW	7.90 kW
COP Tj = Tbiv	2.50	2.28



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Pdh Tj = TOL	9.10 kW	9.70 kW
COP Tj = TOL	2.25	2.10
WTOL	65 °C	65 °C
Poff	16 W	16 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	11.20 kW	11.61 kW
Annual energy consumption Qhe	7727 kWh	9481 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.10	9.70
COP Tj = -15°C (if TOL<-20°C)	2.25	2.10
Cdh	0.90	0.90



Model: TTL 15 ACS

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	4.68 kW	3.74 kW	
El input	1.11 kW	1.37 kW	
СОР	4.23	2.73	
Indoor water flow rate	0.78 m³/h	0.50 m³/h	

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

Average Climate

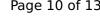
EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	50 dB(A)	50 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	159 %	127 %
Prated	8.00 kW	8.00 kW
SCOP	4.04	3.34
Tbiv	-8 °C	-8 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.10 kW
COP Tj = -7°C	2.49	2.18
Cdh	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.04	3.30
Cdh	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.20 kW
COP Tj = +7°C	5.08	4.07
Cdh	0.90	0.90
Pdh Tj = 12°C	4.40 kW	4.00 kW
COP Tj = 12°C	6.30	5.14
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.10 kW	7.40 kW
COP Tj = Tbiv	2.42	2.13



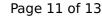


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Pdh Tj = TOL	6.60 kW	7.00 kW
COP Tj = TOL	2.71	1.97
WTOL	65 °C	65 °C
Poff	16 W	16 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4086 kWh	5084 kWh

Warmer Climate

	EN 14825	
	Low temperature	Medium temperature
η_{s}	190 %	142 %
Prated	4.00 kW	4.00 kW
SCOP	4.83	3.50
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.20 kW	4.00 kW
COP Tj = +2°C	3.48	2.50





Cdh	0.90	0.90
Pdh Tj = +7°C	4.30 kW	3.90 kW
$COP Tj = +7^{\circ}C$	4.46	3.16
Cdh	0.90	0.90
Pdh Tj = 12°C	4.30 kW	3.80 kW
COP Tj = 12°C	5.89	4.57
Cdh	0.90	0.90
Pdh Tj = Tbiv	4.20 kW	4.00 kW
COP Tj = Tbiv	3.48	2.50
Pdh Tj = TOL	9.20 kW	9.80 kW
COP Tj = TOL	2.15	1.98
WTOL	65 °C	65 °C
Poff	16 W	16 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1106 kWh	1489 kWh

Colder Climate





EN 14825

	Low temperature	Medium temperature
η_{s}	140 %	119 %
Prated	11.00 kW	12.00 kW
SCOP	3.57	3.09
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.00 kW
COP Tj = -7°C	2.72	2.45
Cdh	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.45	3.70
Cdh	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.30 kW
COP Tj = +7°C	5.44	4.53
Cdh	0.90	0.90
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	6.30	5.44
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.70 kW	7.90 kW
COP Tj = Tbiv	2.50	2.28



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Pdh Tj = TOL	9.10 kW	9.70 kW
COP Tj = TOL	2.25	2.10
WTOL	65 °C	65 °C
Poff	16 W	16 W
РТО	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	11.20 kW	11.61 kW
Annual energy consumption Qhe	7597 kWh	9351 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.10	9.70
COP Tj = -15°C (if TOL<-20°C)	2.25	2.10
Cdh	0.90	0.90