

This information was generated by the HP KEYMARK database on 17 Dec 2020

Summary of	TTL 20 A, TTL 20 AC	Reg. No.	011-1W0072
Certificate Holder			
Name	tecalor GmbH		
Address	Fürstenbergerstr. 77	Zip	37603
City	Holzminen	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Name of testing laboratory	VDE Prüf- und Zertifizierungsinstitut GmbH		
Subtype title	TTL 20 A, TTL 20 AC		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	Other		
Mass Of Refrigerant	4.7 kg		
Certification Date	10.04.2017		

## Model: TTL 20 A

### General Data

Power supply	3x400V 50Hz
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## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	7.84 kW	7.36 kW
El input	1.54 kW	2.33 kW
COP	5.09	3.16
Indoor water flow rate	1.44 m <sup>3</sup> /h	0.82 m <sup>3</sup> /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	54 dB(A)	54 dB(A)

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**EN 14825**

	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	185 %	143 %
Prated	11.00 kW	12.00 kW
SCOP	4.70	3.65
Tbiv	-5 °C	-5 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.50 kW	10.60 kW
COP Tj = -7°C	3.30	2.69
Cdh	0.90	0.90
Pdh Tj = +2°C	8.30 kW	8.40 kW
COP Tj = +2°C	4.72	3.51
Cdh	0.90	0.90
Pdh Tj = +7°C	8.00 kW	7.80 kW
COP Tj = +7°C	6.16	4.61
Cdh	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	8.11	6.66
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.80 kW	9.90 kW
COP Tj = Tbiv	3.46	2.81

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Pdh Tj = TOL	9.53 kW	9.48 kW
COP Tj = TOL	3.15	2.29
WTOL	65 °C	65 °C
Poff	10 W	10 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	38 W	38 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.48 kW	0.69 kW
Annual energy consumption Qhe	4839 kWh	6801 kWh

## Warmer Climate

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	214 %	163 %
Prated	7.00 kW	8.00 kW
SCOP	5.44	4.14
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.30 kW	8.40 kW
COP Tj = +2°C	4.14	2.74

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Cdh	0.90	0.90
Pdh Tj = +7°C	7.90 kW	7.50 kW
COP Tj = +7°C	5.47	3.64
Cdh	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	7.72	6.11
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.30 kW	8.40 kW
COP Tj = Tbiv	4.14	2.74
Pdh Tj = TOL	11.90 kW	12.90 kW
COP Tj = TOL	2.98	2.45
WTOL	65 °C	65 °C
Poff	10 W	10 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	38 W	38 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1720 kWh	2581 kWh

## Colder Climate

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**EN 14825**

	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	165 %	132 %
Prated	15.00 kW	17.00 kW
SCOP	4.20	3.38
Tbiv	-7 °C	-7 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.20 kW	10.10 kW
COP Tj = -7°C	3.50	2.91
Cdh	0.90	0.90
Pdh Tj = +2°C	8.30 kW	8.30 kW
COP Tj = +2°C	5.15	3.92
Cdh	0.90	0.90
Pdh Tj = +7°C	8.00 kW	7.90 kW
COP Tj = +7°C	6.57	5.12
Cdh	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	8.11	6.95
Cdh	0.90	0.90
Pdh Tj = Tbiv	9.20 kW	10.10 kW
COP Tj = Tbiv	3.50	2.41

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Pdh Tj = TOL	11.80 kW	12.60 kW
COP Tj = TOL	3.06	2.56
WTOL	65 °C	65 °C
Poff	10 W	10 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	38 W	38 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	15.27 kW	16.65 kW
Annual energy consumption Qhe	8804 kWh	12405 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.80	12.60
COP Tj = -15°C (if TOL<-20°C)	3.06	2.56
Cdh	0.90	0.90

## Model: TTL 20 AC

### General Data

Power supply	3x400V 50Hz
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## Heating

### EN 14511-2

	Low temperature	Medium temperature
Heat output	7.84 kW	7.36 kW
El input	1.54 kW	2.33 kW
COP	5.09	3.16
Indoor water flow rate	1.44 m <sup>3</sup> /h	0.82 m <sup>3</sup> /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	54 dB(A)	54 dB(A)



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**EN 14825**

	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	192 %	147 %
Prated	11.00 kW	12.00 kW
SCOP	4.87	3.74
Tbiv	-5 °C	-5 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.50 kW	10.60 kW
COP Tj = -7°C	3.30	2.69
Cdh	0.90	0.90
Pdh Tj = +2°C	8.30 kW	8.40 kW
COP Tj = +2°C	4.72	3.51
Cdh	0.90	0.90
Pdh Tj = +7°C	8.00 kW	7.80 kW
COP Tj = +7°C	6.16	4.61
Cdh	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	8.11	6.66
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.80 kW	9.90 kW
COP Tj = Tbiv	3.46	2.81

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Pdh Tj = TOL	9.53 kW	9.48 kW
COP Tj = TOL	3.15	2.29
WTOL	65 °C	65 °C
Poff	10 W	10 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	38 W	38 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.48 kW	0.69 kW
Annual energy consumption Qhe	4663 kWh	6625 kWh

## Warmer Climate

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	245 %	177 %
Prated	7.00 kW	8.00 kW
SCOP	6.20	4.51
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.30 kW	8.40 kW
COP Tj = +2°C	4.14	2.74

This information was generated by the HP KEYMARK database on 17 Dec 2020

Cdh	0.90	0.90
Pdh Tj = +7°C	7.90 kW	7.50 kW
COP Tj = +7°C	5.47	3.64
Cdh	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	7.72	6.11
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.30 kW	8.40 kW
COP Tj = Tbiv	4.14	2.74
Pdh Tj = TOL	11.90 kW	12.90 kW
COP Tj = TOL	2.98	2.45
WTOL	65 °C	65 °C
Poff	10 W	10 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	38 W	38 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1508 kWh	2369 kWh

## Colder Climate

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**EN 14825**

	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	167 %	133 %
Prated	15.00 kW	17.00 kW
SCOP	4.25	3.41
Tbiv	-7 °C	-7 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.20 kW	10.10 kW
COP Tj = -7°C	3.50	2.91
Cdh	0.90	0.90
Pdh Tj = +2°C	8.30 kW	8.30 kW
COP Tj = +2°C	5.15	3.92
Cdh	0.90	0.90
Pdh Tj = +7°C	8.00 kW	7.90 kW
COP Tj = +7°C	6.57	5.12
Cdh	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	8.11	6.95
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Pdh Tj = Tbiv	9.20 kW	10.10 kW
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Pdh Tj = TOL	11.80 kW	12.60 kW
COP Tj = TOL	3.06	2.56
WTOL	65 °C	65 °C
Poff	10 W	10 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	38 W	38 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	15.27 kW	16.65 kW
Annual energy consumption Qhe	8698 kWh	12299 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.80	12.60
COP Tj = -15°C (if TOL<-20°C)	3.06	2.56
Cdh	0.90	0.90