

This information was generated by the HP KEYMARK database on 23 Jun 2022

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Summary of	TTL 20 AC	Reg. No.	011-1W0489
Certificate Holder			
Name	tecalor GmbH		
Address	Fürstenbergerstr. 77	Zip	37603
City	Holzminden	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Subtype title	TTL 20 AC		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R410A		
Mass of Refrigerant	5.5 kg		
Certification Date	10.04.2017		

## Model: TTL 20 AC

Configure model	
Model name	TTL 20 AC
Application	Heating (medium temp)
Units	Outdoor
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	7.84 kW	7.36 kW
El input	1.54 kW	2.33 kW
COP	5.09	3.16

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

### Average Climate

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### EN 12102-1

	Low temperature	Medium temperature
Sound power level outdoor	54 dB(A)	54 dB(A)

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	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 Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.30 kW	8.40 kW
COP Tj = +2°C	4.72	3.51
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	8.00 kW	7.80 kW
COP Tj = +7°C	6.16	4.61
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW

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COP Tj = 12°C	8.11	6.66
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.80 kW	9.90 kW
COP Tj = Tbiv	3.46	2.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.53 kW	9.48 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	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

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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
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	7.90 kW	7.50 kW
COP Tj = +7°C	5.47	3.64
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	9.10 kW	9.00 kW
COP Tj = 12°C	7.72	6.11
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.30 kW	8.40 kW
COP Tj = Tbiv	4.14	2.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.90 kW	12.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	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

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Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q <sub>he</sub>	1508 kWh	2369 kWh

## Colder Climate

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	167 %	133 %
Prated	15.00 kW	17.00 kW
SCOP	4.25	3.41
T <sub>biv</sub>	-7 °C	-7 °C
TOL	-20 °C	-20 °C
P <sub>dh</sub> T <sub>j</sub> = -7°C	9.20 kW	10.10 kW
COP T <sub>j</sub> = -7°C	3.50	2.91
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.90	0.90
P <sub>dh</sub> T <sub>j</sub> = +2°C	8.30 kW	8.30 kW
COP T <sub>j</sub> = +2°C	5.15	3.92
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.90	0.90
P <sub>dh</sub> T <sub>j</sub> = +7°C	8.00 kW	7.90 kW
COP T <sub>j</sub> = +7°C	6.57	5.12
C <sub>dh</sub> T <sub>j</sub> = +7 °C	0.90	0.90
P <sub>dh</sub> T <sub>j</sub> = 12°C	9.10 kW	9.00 kW

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COP Tj = 12°C	8.11	6.95
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.20 kW	10.10 kW
COP Tj = Tbiv	3.50	2.41
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.80 kW	12.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	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 Tj = -15 °C	0.90	0.90