

Subtype TTL 13.1 AC comfort

Certificate Holder	tecalor GmbH
Address	Lütztringer Weg 3
ZIP	37603
City	Holzminden
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	TTL 13.1 AC comfort
Registration number	011-1W0985
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	2.15 kg
Certification Date	04.02.2025
Testing basis	HP KEYMARK certification scheme rules rev. 14

**Model TTL 13.1 AC comfort**

Model name	TTL 13.1 AC comfort
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	3x400V 50Hz
Off-peak product	n/a

**Outdoor Air/Water****EN 14511-4 | Heating**

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	5.79 kW	5.10 kW
El input	1.07 kW	1.56 kW
COP	5.41	3.26

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level outdoor	45 dB(A)	45 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	193 %	157 %
Prated	14.58 kW	14.84 kW
SCOP	4.89	4.01
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.90 kW	13.19 kW
COP Tj = -7°C	3.11	2.60
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.68 kW	7.99 kW
COP Tj = +2°C	4.54	3.81
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.27 kW	5.07 kW

COP Tj = +7°C	7.03	5.37
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	6.05 kW	5.93 kW
COP Tj = 12°C	8.59	6.56
Cdh Tj = +12 °C	0.960	0.980
Pdh Tj = Tbiv	12.90 kW	13.19 kW
COP Tj = Tbiv	3.11	2.60
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.21 kW	12.43 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.91	2.38
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	75 °C	75 °C
Poff	1 W	13 W
PTO	30 W	18 W
PSB	13 W	13 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.37 kW	2.41 kW
Annual energy consumption Qhe	6759 kWh	7653 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level outdoor	45 dB(A)	45 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	171 %	139 %
Prated	14.45 kW	14.12 kW
SCOP	4.35	3.56
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	8.82 kW	8.58 kW
COP Tj = -7°C	3.53	2.96
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	5.25 kW	5.13 kW
COP Tj = +2°C	5.23	4.13
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.33 kW	5.20 kW
COP Tj = +7°C	7.12	5.53
Cdh Tj = +7 °C	0.960	0.980
Pdh Tj = 12°C	6.04 kW	6.07 kW
COP Tj = 12°C	8.28	6.66
Cdh Tj = +12 °C	0.960	0.980
Pdh Tj = Tbiv	11.79 kW	11.52 kW

COP Tj = Tbiv	2.85	2.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.45 kW	9.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.41	1.87
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	75 °C	75 °C
Poff	13 W	13 W
PTO	30 W	18 W
PSB	13 W	13 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.00 kW	4.92 kW
Annual energy consumption Qhe	8486 kWh	9773 kWh
Pdh Tj = -15°C (if TOL)	11.79	11.52
COP Tj = -15°C (if TOL)	2.85	2.44
Cdh Tj = -15 °C	0.900	0.900

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level outdoor	45 dB(A)	45 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	255 %	180 %
Prated	8.10 kW	8.14 kW
SCOP	6.45	4.57
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.10 kW	8.14 kW
COP Tj = +2°C	4.10	2.89
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.20 kW	5.13 kW
COP Tj = +7°C	6.08	4.04
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	6.05 kW	5.92 kW
COP Tj = 12°C	7.93	5.68
Cdh Tj = +12 °C	0.960	0.980
Pdh Tj = Tbiv	8.10 kW	8.14 kW
COP Tj = Tbiv	4.10	2.89
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.10 kW	8.14 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.10	2.89

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL  
< Tdesignh

WTOL	75 °C	75 °C
Poff	13 W	13 W
PTO	30 W	18 W
PSB	13 W	13 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1677 kWh	2380 kWh