

Subtype TTL 13.1 AC comfort

Certificate Holder	tecalor GmbH
Address	Lüchtringer 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
η_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
η_s	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

$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$

WTOL	75 °C	75 °C
P _{off}	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 Q _{he}	1677 kWh	2380 kWh