

## Subtype TTL 47

Certificate Holder	tecalor GmbH
Address	Fürstenbergerstr. 77
ZIP	37603
City	Holzminden
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	TTL 47
Registration number	011-1W0513
Heat Pump Type	Outdoor Air/Water
Refrigerant	R407c
Mass of Refrigerant	7.3 kg
Certification Date	07.06.2023
Testing basis	HP KEYMARK certification scheme rules V11

## Model TTL 47

Model name	TTL 47
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
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 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	149 %	111 %
Prated	29.00 kW	29.00 kW
SCOP	3.79	2.86
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	22.10 kW	22.70 kW
COP Tj = -7°C	3.16	2.33
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	26.70 kW	25.80 kW
COP Tj = +2°C	3.86	2.70
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	27.40 kW	26.80 kW
COP Tj = +7°C	4.41	3.43
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	26.80 kW	26.60 kW
COP Tj = 12°C	4.84	4.10
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	23.10 kW	23.20 kW
COP Tj = Tbiv	3.34	2.41

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	20.60 kW	22.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.94	2.26
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °C
Poff	7 W	7 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.40 kW	6.90 kW
Annual energy consumption Qhe	15805 kWh	20964 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	124 %	99 %
Prated	30.00 kW	31.00 kW
SCOP	3.16	2.56
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	21.90 kW	22.40 kW
COP Tj = -7°C	3.39	2.60
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	26.90 kW	26.10 kW
COP Tj = +2°C	4.14	3.09
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	27.50 kW	27.10 kW
COP Tj = +7°C	4.62	3.76
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	26.80 kW	26.70 kW
COP Tj = 12°C	4.81	4.29
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	20.30 kW	21.40 kW
COP Tj = Tbiv	3.15	2.50
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	15.60 kW	19.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.39	2.35
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		

WTOL	60 °C	60 °C
Poff	7 W	7 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	25 W	25 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	30.00 kW	31.00 kW
Annual energy consumption Qhe	23368 kWh	29861 kWh
Pdh Tj = -15°C (if TOL		
COP Tj = -15°C (if TOL		
Cdh Tj = -15 °C		

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	69 dB(A)	69 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	145 %	106 %
Prated	27.00 kW	25.00 kW
SCOP	3.70	2.73
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	26.50 kW	25.00 kW
COP Tj = +2°C	3.53	2.18
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	27.30 kW	26.20 kW
COP Tj = +7°C	4.08	2.81
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	26.80 kW	26.50 kW
COP Tj = 12°C	4.65	3.78
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	26.50 kW	25.00 kW
COP Tj = Tbiv	3.53	2.18
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	26.50 kW	25.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.53	2.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
WTOL	60 °C	60 °C
Poff	7 W	7 W
PTO	7 W	7 W
PSB	7 W	7 W
PCK	25 W	25 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q <sub>he</sub>	9746 kWh	12229 kWh