Subtype TTL 15 AS, TTL 15 ACS

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 15 AS, TTL 15 ACS
Registration number	011-1W0048
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	4.2 kg
Certification Date	01.11.2016

Model TTL 15 AS

Model name	TTL 15 AS
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 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
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	4.68 kW	3.74 kW
El input	1.11 kW	1.37 kW
COP	4.23	2.73

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	50 dB(A)	50 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	151 %	122 %
Prated	8.00 kW	8.00 kW
SCOP	3.84	3.20
Tbiv	-8 °C	-8 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.10 kW
COP Tj = -7°C	2.49	2.18
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.04	3.30
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.20 kW
COP Tj = +7°C	5.08	4.07
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	4.40 kW	4.00 kW
COP Tj = 12°C	6.30	5.14
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.10 kW	7.40 kW
COP Tj = Tbiv	2.42	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.60 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.71	1.97
WTOL	65 °C	65 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4303 kWh	5300 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	137 %	118 %
Prated	11.00 kW	12.00 kW
SCOP	3.51	3.05
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.00 kW
COP Tj = -7°C	2.72	2.45
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.45	3.70
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.30 kW
COP Tj = +7°C	5.44	4.53
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	6.30	5.44
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.70 kW	7.90 kW
COP Tj = Tbiv	2.50	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.10 kW	9.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.25	2.10
WTOL	65 °C	65 °C
Poff	16 W	16 W
PTO	16 W	16 W

PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.20 kW	11.61 kW
Annual energy consumption Qhe	7727 kWh	9481 kWh
Pdh Tj = -15°C (if TOL	9.10	9.70
COP Tj = -15°C (if TOL	2.25	2.10
Cdh Tj = -15 °C	0.90	0.90

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	153 %	120 %
Prated	4.00 kW	4.00 kW
SCOP	3.91	2.99
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.20 kW	4.00 kW
COP Tj = +2°C	3.48	2.50
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.30 kW	3.90 kW
COP Tj = +7°C	4.46	3.16
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.30 kW	3.80 kW
COP Tj = 12°C	5.89	4.57
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.20 kW	4.00 kW
COP Tj = Tbiv	3.48	2.50
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.20 kW	9.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.15	1.98
WTOL	65 °C	65 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1367 kWh	1750 kWh

Model TTL 15 ACS

Model name	TTL 15 ACS
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 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
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	4.68 kW	3.74 kW
El input	1.11 kW	1.37 kW
COP	4.23	2.73

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	50 dB(A)	50 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	159 %	127 %
Prated	8.00 kW	8.00 kW
SCOP	4.04	3.34
Tbiv	-8 °C	-8 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.10 kW
COP Tj = -7°C	2.49	2.18
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.04	3.30
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.20 kW
COP Tj = +7°C	5.08	4.07
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	4.40 kW	4.00 kW
COP Tj = 12°C	6.30	5.14
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.10 kW	7.40 kW
COP Tj = Tbiv	2.42	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.60 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.71	1.97
WTOL	65 °C	65 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4086 kWh	5084 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	140 %	119 %
Prated	11.00 kW	12.00 kW
SCOP	3.57	3.09
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.80 kW	7.00 kW
COP Tj = -7°C	2.72	2.45
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.30 kW	4.20 kW
COP Tj = +2°C	4.45	3.70
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.50 kW	4.30 kW
COP Tj = +7°C	5.44	4.53
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.40 kW	4.10 kW
COP Tj = 12°C	6.30	5.44
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.70 kW	7.90 kW
COP Tj = Tbiv	2.50	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.10 kW	9.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.25	2.10
WTOL	65 °C	65 °C
Poff	16 W	16 W
PTO	16 W	16 W

PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	11.20 kW	11.61 kW
Annual energy consumption Qhe	7597 kWh	9351 kWh
Pdh Tj = -15°C (if TOL	9.10	9.70
COP Tj = -15°C (if TOL	2.25	2.10
Cdh Tj = -15 °C	0.90	0.90

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	190 %	142 %
Prated	4.00 kW	4.00 kW
SCOP	4.83	3.50
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	4.20 kW	4.00 kW
COP Tj = +2°C	3.48	2.50
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.30 kW	3.90 kW
COP Tj = +7°C	4.46	3.16
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.30 kW	3.80 kW
COP Tj = 12°C	5.89	4.57
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.20 kW	4.00 kW
COP Tj = Tbiv	3.48	2.50
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.20 kW	9.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.15	1.98
WTOL	65 °C	65 °C
Poff	16 W	16 W
PTO	16 W	16 W
PSB	16 W	16 W
PCK	43 W	43 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1106 kWh	1489 kWh