

Subtype TTL 3.5 ACS

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 3.5 ACS
Registration number	011-1W0116
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	1.1 kg
Certification Date	19.01.2017

**Model TTL 3.5 ACS + HSBB 200 classic, HSBB 200 S classic**

Model name	TTL 3.5 ACS + HSBB 200 classic, HSBB 200 S classic
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 50Hz
Off-peak product	No

**Outdoor Air/Water**
**EN 16147 | Average Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	113 %
COP	2.70
Heating up time	1:50 h:min
Standby power input	35.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	245 l

**EN 16147 | Colder Climate**

Declared load profile	XL
Efficiency $\eta_{DHW}$	104 %
COP	1.00
Heating up time	2:52 h:min
Standby power input	42.1 W
Reference hot water temperature	52.9 °C
Mixed water at 40°C	245 l

**EN 16147 | Warmer Climate**

Declared load profile	XL
Efficiency $\eta_{DHW}$	104 %
COP	1.00
Heating up time	2:52 h:min
Standby power input	42.1 W
Reference hot water temperature	52.9 °C
Mixed water at 40°C	245 l

**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	2.27 kW	1.92 kW
El input	0.50 kW	0.74 kW
COP	4.54	2.59

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	33 dB(A)	33 dB(A)
Sound power level outdoor	52 dB(A)	52 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	116 %
Prated	3.62 kW	3.83 kW
SCOP	4.22	2.96
Tbiv	-7 °C	-5 °C
TOL	-10 °C	-7 °C
Pdh Tj = -7°C	3.20 kW	2.79 kW
COP Tj = -7°C	2.88	2.01
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	1.95 kW	2.01 kW
COP Tj = +2°C	4.11	2.94
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	1.59 kW	1.25 kW
COP Tj = +7°C	5.81	4.13
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	1.66 kW	1.54 kW
COP Tj = 12°C	6.34	5.13
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	3.20 kW	3.09 kW
COP Tj = Tbiv	2.88	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.04 kW	2.79 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.51	2.01
Rated airflow rate	0 m³/h	0 m³/h
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	17 W	17 W
PTO	30 W	30 W
PSB	17 W	17 W

PCK	5 W	5 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.58 kW	3.83 kW
Annual energy consumption Qhe	1771 kWh	2672 kWh

**Model TTL 3.5 ACS**

Model name	TTL 3.5 ACS
Application	Heating (low temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 50Hz
Off-peak product	No

**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	2.27 kW	
El input	0.50 kW	
COP	4.54	

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	
Sound power level outdoor	52 dB(A)	

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	
Prated	3.62 kW	
SCOP	4.22	
Tbiv	-7 °C	
TOL	-10 °C	
Pdh Tj = -7°C	3.20 kW	
COP Tj = -7°C	2.88	
Cdh Tj = -7 °C	0.900	
Pdh Tj = +2°C	1.95 kW	
COP Tj = +2°C	4.11	
Cdh Tj = +2 °C	0.900	

Pdh Tj = +7°C	1.59 kW
COP Tj = +7°C	5.81
Cdh Tj = +7 °C	0.900
Pdh Tj = 12°C	1.66 kW
COP Tj = 12°C	6.34
Cdh Tj = +12 °C	0.900
Pdh Tj = Tbiv	3.20 kW
COP Tj = Tbiv	2.88
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.07
Rated airflow rate	0 m³/h
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900
WTOL	60 °C
Poff	17 W
PTO	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.58 kW
Annual energy consumption Qhe	1771 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	0 dB(A)	
Sound power level outdoor	52 dB(A)	

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	148 %	
Prated	3.38 kW	
SCOP	3.77	
Tbiv	-15 °C	
TOL	-20 °C	
Pdh Tj = -7°C	2.05 kW	
COP Tj = -7°C	3.20	
Cdh Tj = -7 °C	0.900	
Pdh Tj = +2°C	1.25 kW	
COP Tj = +2°C	4.55	
Cdh Tj = +2 °C	0.900	
Pdh Tj = +7°C	1.39 kW	
COP Tj = +7°C	6.03	
Cdh Tj = +7 °C	0.900	
Pdh Tj = 12°C	1.64 kW	

COP Tj = 12°C	6.22
Cdh Tj = +12 °C	0.900
Pdh Tj = Tbiv	2.76 kW
COP Tj = Tbiv	2.56
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.13
Rated airflow rate	0 m³/h
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900
WTOL	60 °C
Poff	17 W
PTO	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	3.38 kW
Annual energy consumption Qhe	2208 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 indoor	0 dB(A)	
Sound power level outdoor	52 dB(A)	

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	200 %	
Prated	3.00 kW	
SCOP	5.07	
Tbiv	2 °C	
TOL	2 °C	
Pdh Tj = -7°C	0.00 kW	
COP Tj = -7°C	0.00	
Pdh Tj = +2°C	3.04 kW	
COP Tj = +2°C	3.39	
Cdh Tj = +2 °C	0.900	
Pdh Tj = +7°C	1.95 kW	
COP Tj = +7°C	5.18	
Cdh Tj = +7 °C	0.900	
Pdh Tj = 12°C	1.63 kW	
COP Tj = 12°C	6.14	
Cdh Tj = +12 °C	0.900	

Pdh Tj = Tbiv	3.04 kW
COP Tj = Tbiv	3.39
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.39
Rated airflow rate	0 m <sup>3</sup> /h
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900
WTOL	60 °C
Poff	17 W
PTO	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	791 kWh

**Model TTL 3.5 ACS + HSBC 200, HSBC 200 S**

Model name	TTL 3.5 ACS + HSBC 200, HSBC 200 S
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	n/a
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 50Hz
Off-peak product	No

**Outdoor Air/Water**
**EN 16147 | Average Climate**

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COP	1.00
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Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

Defrost test	passed	
Starting and operating test	passed	
<b>EN 14511-2   Heating</b>		
	Low temperature	Medium temperature
Heat output	2.27 kW	1.92 kW
El input	0.50 kW	0.74 kW
COP	4.54	2.59
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	Low temperature	Medium temperature
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<b>EN 14825   Average Climate</b>		
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Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	1.59 kW	1.25 kW
COP Tj = +7°C	5.81	4.13
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	1.66 kW	1.54 kW
COP Tj = 12°C	6.34	5.13
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Pdh Tj = Tbiv	3.20 kW	3.09 kW
COP Tj = Tbiv	2.88	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.20 kW	3.09 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.88	2.20
Rated airflow rate	0 m³/h	0 m³/h
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	60 °C	60 °C
Poff	17 W	17 W
PTO	30 W	30 W
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