

Subtype AEROTOP T20 / T20R

Certificate Holder	ELCO GmbH
Address	Hohenzollernstrasse 31
ZIP	72379
City	Hechingen
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	AEROTOP T20 / T20R
Registration number	011-1W0300
Heat Pump Type	Outdoor Air/Water
Refrigerant	R407c
Mass of Refrigerant	6 kg
Certification Date	04.05.2019

**Model AEROTOP T20**

Model name	AEROTOP T20
Application	Heating (medium temp)
Units	Indoor, 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	3x230V 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	22.40 kW	19.95 kW
EI input	5.90 kW	7.50 kW
COP	3.80	2.66

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	139 %	107 %
Prated	14.00 kW	12.00 kW
SCOP	3.56	2.75
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.66 kW	12.81 kW
COP Tj = -7°C	2.64	1.99
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	17.48 kW	15.81 kW
COP Tj = +2°C	3.48	2.59
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	23.38 kW	22.28 kW

COP Tj = +7°C	4.35	3.73
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	25.43 kW	25.02 kW
COP Tj = 12°C	4.74	4.33
Cdh Tj = +12 °C	1.000	1.000
Pdh Tj = Tbiv	25.29 kW	12.00 kW
COP Tj = Tbiv	2.50	1.90
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.90 kW	12.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.50	1.90
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	57 °C	57 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	80 W	80 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	8071 kWh	10203 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	127 %	91 %
Prated	14.83 kW	18.80 kW
SCOP	3.25	2.34
Tbiv	-15 °C	-10 °C
TOL	-20 °C	-10 °C
Pdh Tj = -7°C	15.08 kW	13.63 kW
COP Tj = -7°C	2.80	2.25
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	17.89 kW	16.50 kW
COP Tj = +2°C	3.70	2.95
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	23.63 kW	22.77 kW
COP Tj = +7°C	4.48	4.01
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	25.43 kW	25.16 kW
COP Tj = 12°C	4.74	4.47
Cdh Tj = +12 °C	1.000	1.000

Pdh Tj = Tbiv	12.10 kW	12.86 kW
COP Tj = Tbiv	2.37	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.05 kW	12.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.34	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	57 °C	57 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	80 W	80 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	14.83 kW	18.80 kW
Annual energy consumption Qhe	11167 kWh	20867 kWh
Pdh Tj = -15°C (if TOL)	0.01	0.01
COP Tj = -15°C (if TOL)	0.01	0.01
Cdh Tj = -15 °C	0.900	0.900

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	156 %	108 %
Prated	16.78 kW	14.00 kW
SCOP	3.97	2.77
Tbiv	2 °C	2 °C
TOL	-10 °C	-10 °C
Pdh Tj = +2°C	16.78 kW	14.00 kW
COP Tj = +2°C	3.10	1.89
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	22.89 kW	21.05 kW
COP Tj = +7°C	4.07	3.11
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	25.29 kW	24.75 kW
COP Tj = 12°C	4.60	2.17
Cdh Tj = +12 °C	1.000	1.000
Pdh Tj = Tbiv	16.78 kW	14.00 kW
COP Tj = Tbiv	3.10	1.89
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	16.78 kW	14.00 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.10	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	57 °C	57 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	80 W	80 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6362 kWh	9220 kWh

**Model AEROTOP T20R**

Model name	AEROTOP T20R
Application	Heating (medium temp)
Units	Indoor, 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	3x230V 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	22.40 kW	19.95 kW
EI input	5.90 kW	7.50 kW
COP	3.80	2.66

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	66 dB(A)	66 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	145 %	110 %
Prated	13.90 kW	12.00 kW
SCOP	3.69	2.84
Tbiv	-10 °C	-10 °C
TOL	-20 °C	-10 °C
Pdh Tj = -7°C	14.66 kW	12.81 kW
COP Tj = -7°C	2.64	1.99
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	17.48 kW	15.81 kW
COP Tj = +2°C	3.48	2.59
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	23.38 kW	22.28 kW

COP Tj = +7°C	4.35	3.73
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	25.43 kW	25.02 kW
COP Tj = 12°C	4.74	4.33
Cdh Tj = +12 °C	1.000	1.000
Pdh Tj = Tbiv	13.90 kW	12.00 kW
COP Tj = Tbiv	2.50	1.90
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.90 kW	12.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.50	1.90
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	57 °C	57 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	80 W	80 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	7777 kWh	9910 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	66 dB(A)	66 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	129 %	91 %
Prated	14.83 kW	18.80 kW
SCOP	3.30	2.36
Tbiv	-15 °C	-10 °C
TOL	-20 °C	-10 °C
Pdh Tj = -7°C	15.08 kW	13.63 kW
COP Tj = -7°C	2.80	2.25
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	17.89 kW	16.50 kW
COP Tj = +2°C	3.70	2.95
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	23.63 kW	22.77 kW
COP Tj = +7°C	4.48	4.01
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	25.43 kW	25.16 kW
COP Tj = 12°C	4.48	4.47
Cdh Tj = +12 °C	1.000	1.000

Pdh Tj = Tbiv	12.10 kW	12.86 kW
COP Tj = Tbiv	2.37	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.05 kW	12.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.34	2.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	57 °C	57 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	80 W	80 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	14.83 kW	18.80 kW
Annual energy consumption Qhe	10990 kWh	20690 kWh
Pdh Tj = -15°C (if TOL)	0.01	0.01
COP Tj = -15°C (if TOL)	0.01	0.01
Cdh Tj = -15 °C	0.900	0.900

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	66 dB(A)	66 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	165 %	112 %
Prated	16.78 kW	14.00 kW
SCOP	4.20	2.88
Tbiv	2 °C	2 °C
TOL	-20 °C	-10 °C
Pdh Tj = +2°C	16.78 kW	14.00 kW
COP Tj = +2°C	3.10	1.89
Cdh Tj = +2 °C	1.000	1.000
Pdh Tj = +7°C	22.89 kW	21.05 kW
COP Tj = +7°C	4.07	3.11
Cdh Tj = +7 °C	1.000	1.000
Pdh Tj = 12°C	25.29 kW	24.75 kW
COP Tj = 12°C	4.60	2.17
Cdh Tj = +12 °C	1.000	1.000
Pdh Tj = Tbiv	16.78 kW	14.00 kW
COP Tj = Tbiv	3.10	4.05
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	16.78 kW	14.00 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.10	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	57 °C	57 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	80 W	80 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6009 kWh	8867 kWh