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Summary of	AEROTOP T20 / T20R	Reg. No.	011-1W0300
Certificate Holder			
Name	ELCO GmbH		
Address	Hohenzollernstrasse 31	Zip	72379
City	Hechingen	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH		
Name of testing laboratory	Wärmepumpen-Testzentrum WPZ		
Subtype title	AEROTOP T20 / T20R		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R407c		
Mass Of Refrigerant	6 kg		
Certification Date	04.05.2019		

Model: AEROTOP T20

General Data	
Power supply	3x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	22.40 kW	19.95 kW
El input	5.90 kW	7.50 kW
COP	3.80	2.66
Indoor water flow rate	3.85 m³/h	2.86 m³/h

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

Average Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	139 %	107 %
Prated	14.00 kW	14.00 kW
SCOP	3.56	2.75
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	1.00	1.00
Pdh Tj = +2°C	17.48 kW	15.81 kW
COP Tj = +2°C	3.48	2.59
Cdh	1.00	1.00
Pdh Tj = +7°C	23.38 kW	22.28 kW
COP Tj = +7°C	4.35	3.73
Cdh	1.00	1.00

Pdh Tj = 12°C	25.43 kW	25.02 kW
COP Tj = 12°C	4.74	4.33
Cdh	1.00	1.00
Pdh Tj = Tbiv	25.29 kW	12.00 kW
COP Tj = Tbiv	2.50	1.90
Pdh Tj = TOL	13.90 kW	12.00 kW
COP Tj = TOL	2.50	1.90
Cdh	1.00	1.00
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	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	8071 kWh	10203 kWh

Warmer Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	156 %	108 %
Prated	19.00 kW	19.00 kW
SCOP	3.97	2.77
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	1.00	1.00
Pdh Tj = +7°C	22.89 kW	21.05 kW
COP Tj = +7°C	4.07	3.11
Cdh	1.00	1.00
Pdh Tj = 12°C	25.29 kW	24.75 kW
COP Tj = 12°C	4.60	2.17
Cdh	1.00	1.00

Pdh Tj = Tbiv	16.78 kW	14.00 kW
COP Tj = Tbiv	3.10	1.89
Pdh Tj = TOL	16.78 kW	14.00 kW
COP Tj = TOL	3.10	1.89
Cdh	1.00	1.00
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	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6362 kWh	9220 kWh

Colder Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**

η_s	127 %	91 %
Prated	15.00 kW	20.00 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	1.00	1.00
Pdh Tj = +2°C	17.89 kW	16.50 kW
COP Tj = +2°C	3.70	2.95
Cdh	1.00	1.00
Pdh Tj = +7°C	23.63 kW	22.77 kW
COP Tj = +7°C	4.48	4.01
Cdh	1.00	1.00
Pdh Tj = 12°C	25.43 kW	25.16 kW
COP Tj = 12°C	4.74	4.47
Cdh	1.00	1.00
Pdh Tj = Tbiv	12.10 kW	12.86 kW
COP Tj = Tbiv	2.37	2.12
Pdh Tj = TOL	12.05 kW	12.86 kW

COP Tj = TOL	2.34	2.12
Cdh	1.00	1.00
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	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	11167 kWh	20867 kWh
Pdh Tj = -15°C (if TOL<-20°C)	0.01	0.01
COP Tj = -15°C (if TOL<-20°C)	0.01	0.01
Cdh	0.90	0.90

Model: AEROTOP T20R

General Data	
Power supply	3x230V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	22.40 kW	19.95 kW
El input	5.90 kW	7.50 kW
COP	3.80	2.66
Indoor water flow rate	3.85 m³/h	2.86 m³/h

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

Average Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	145 %	110 %
Prated	14.00 kW	14.00 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	1.00	1.00
Pdh Tj = +2°C	17.48 kW	15.81 kW
COP Tj = +2°C	3.48	2.59
Cdh	1.00	1.00
Pdh Tj = +7°C	23.38 kW	22.28 kW
COP Tj = +7°C	4.35	3.73
Cdh	1.00	1.00

Pdh Tj = 12°C	25.43 kW	25.02 kW
COP Tj = 12°C	4.74	4.33
Cdh	1.00	1.00
Pdh Tj = Tbiv	13.90 kW	12.00 kW
COP Tj = Tbiv	2.50	1.90
Pdh Tj = TOL	13.90 kW	12.00 kW
COP Tj = TOL	2.50	1.90
Cdh	1.00	1.00
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	7777 kWh	9910 kWh

Warmer Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**
η_s	165 %	112 %
Prated	19.00 kW	19.00 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	1.00	1.00
Pdh Tj = +7°C	22.89 kW	21.05 kW
COP Tj = +7°C	4.07	3.11
Cdh	1.00	1.00
Pdh Tj = 12°C	25.29 kW	24.75 kW
COP Tj = 12°C	4.60	2.17
Cdh	1.00	1.00

Pdh Tj = Tbiv	16.78 kW	14.00 kW
COP Tj = Tbiv	3.10	4.05
Pdh Tj = TOL	16.78 kW	14.00 kW
COP Tj = TOL	3.10	1.89
Cdh	1.00	1.00
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6009 kWh	8867 kWh

Colder Climate

EN 12102-1		
	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		
	Low temperature	**Medium temperature**

η_s	129 %	91 %
Prated	15.00 kW	20.00 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	1.00	1.00
Pdh Tj = +2°C	17.89 kW	16.50 kW
COP Tj = +2°C	3.70	2.95
Cdh	1.00	1.00
Pdh Tj = +7°C	23.63 kW	22.77 kW
COP Tj = +7°C	4.48	4.01
Cdh	1.00	1.00
Pdh Tj = 12°C	25.43 kW	25.16 kW
COP Tj = 12°C	4.48	4.47
Cdh	1.00	1.00
Pdh Tj = Tbiv	12.10 kW	12.86 kW
COP Tj = Tbiv	2.37	2.12
Pdh Tj = TOL	12.05 kW	12.86 kW

COP Tj = TOL	2.34	2.12
Cdh	1.00	1.00
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	10990 kWh	20690 kWh
Pdh Tj = -15°C (if TOL<-20°C)	0.01	0.01
COP Tj = -15°C (if TOL<-20°C)	0.01	0.01
Cdh	0.90	0.90