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Summary of	AQUATOP T43H	Reg. No.	011-1W0312
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	TÜV Rheinland Energy GmbH		
Subtype title	AQUATOP T43H		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R407c		
Mass Of Refrigerant	7.4 kg		
Certification Date	04.05.2019		

Model: AQUATOP T43H

General Data	
Power supply	3x230V 50Hz

Brine/Water Heat Pump

Heating

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

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	44.44 kW	41.30 kW
El input	10.00 kW	13.50 kW
COP	4.40	3.10
Indoor water flow rate	7.39 m³/h	5.46 m³/h

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	61 dB(A)	61 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	192 %	180 %
Prated	44.00 kW	41.00 kW
SCOP	5.01	4.69
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	44.84 kW	42.54 kW
COP Tj = -7°C	4.49	3.38
Pdh Tj = +2°C	46.18 kW	45.84 kW
COP Tj = +2°C	5.02	4.65
Pdh Tj = +7°C	47.06 kW	47.50 kW
COP Tj = +7°C	5.24	5.46
Pdh Tj = 12°C	47.95 kW	49.56 kW
COP Tj = 12°C	5.54	6.39
Pdh Tj = Tbiv	44.40 kW	41.30 kW
COP Tj = Tbiv	4.40	3.10

Pdh Tj = TOL	44.40 kW	41.30 kW
COP Tj = TOL	4.40	3.10
Cdh	1.00	1.00
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	18311 kWh	18195 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	61 dB(A)	61 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	193 %	181 %
Prated	44.00 kW	41.00 kW

SCOP	5.04	4.74
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	44.40 kW	41.30 kW
COP Tj = +2°C	4.40	3.10
Pdh Tj = +7°C	45.73 kW	44.19 kW
COP Tj = +7°C	4.84	4.12
Pdh Tj = 12°C	47.06 kW	48.32 kW
COP Tj = 12°C	5.32	5.74
Pdh Tj = Tbiv	44.40 kW	41.30 kW
COP Tj = Tbiv	4.40	3.10
Pdh Tj = TOL	44.40 kW	41.30 kW
COP Tj = TOL	4.40	3.10
Cdh	1.00	1.00
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Qhe	11777 kWh	11648 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	61 dB(A)	61 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	197 %	187 %
Prated	44.00 kW	41.00 kW
SCOP	5.13	4.87
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	46.18 kW	45.02 kW
COP Tj = -7°C	5.02	4.37
Pdh Tj = +2°C	47.06 kW	47.50 kW
COP Tj = +2°C	5.24	5.30
Pdh Tj = +7°C	47.51 kW	49.15 kW
COP Tj = +7°C	5.46	6.01
Pdh Tj = 12°C	47.95 kW	50.39 kW

COP Tj = 12°C	5.54	6.51
Pdh Tj = Tbiv	44.40 kW	41.30 kW
COP Tj = Tbiv	4.40	3.10
Pdh Tj = TOL	44.40 kW	41.30 kW
COP Tj = TOL	4.40	3.10
Cdh	1.00	1.00
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	21336 kWh	20905 kWh

Water/Water Heat Pump

Heating

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

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	47.30 kW	54.50 kW
El input	11.30 kW	39.20 kW
COP	5.20	3.60
Indoor water flow rate	10.10 m³/h	7.21 m³/h

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	61 dB(A)	61 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	224 %	199 %

Prated	59.00 kW	55.00 kW
SCOP	5.81	5.17
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	59.04 kW	55.74 kW
COP Tj = -7°C	5.28	3.84
Pdh Tj = +2°C	60.38 kW	59.04 kW
COP Tj = +2°C	5.81	5.11
Pdh Tj = +7°C	61.26 kW	60.70 kW
COP Tj = +7°C	6.02	5.92
Pdh Tj = 12°C	62.15 kW	62.76 kW
COP Tj = 12°C	6.33	6.85
Pdh Tj = Tbiv	58.60 kW	54.50 kW
COP Tj = Tbiv	5.19	3.56
Pdh Tj = TOL	58.60 kW	54.50 kW
COP Tj = TOL	5.19	3.56
Cdh	1.00	1.00
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	20831 kWh	21775 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	61 dB(A)	61 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	225 %	201 %
Prated	59.00 kW	55.00 kW
SCOP	5.83	5.23
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	58.60 kW	54.50 kW
COP Tj = +2°C	5.19	3.56
Pdh Tj = +7°C	59.93 kW	57.39 kW
COP Tj = +7°C	5.63	4.58

Pdh Tj = 12°C	61.26 kW	61.52 kW
COP Tj = 12°C	6.11	6.20
Pdh Tj = Tbiv	58.60 kW	54.50 kW
COP Tj = Tbiv	5.19	3.56
Pdh Tj = TOL	58.60 kW	54.50 kW
COP Tj = TOL	5.19	3.56
Cdh	1.00	1.00
WTOL	60 °C	60 °C
Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	13422 kWh	13929 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	61 dB(A)	61 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	228 %	203 %
Prated	59.00 kW	55.00 kW
SCOP	5.90	5.26
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	60.38 kW	58.22 kW
COP Tj = -7°C	5.81	4.83
Pdh Tj = +2°C	61.26 kW	60.70 kW
COP Tj = +2°C	6.02	5.76
Pdh Tj = +7°C	61.71 kW	62.35 kW
COP Tj = +7°C	6.25	6.47
Pdh Tj = 12°C	62.15 kW	63.59 kW
COP Tj = 12°C	6.33	6.97
Pdh Tj = Tbiv	58.60 kW	54.50 kW
COP Tj = Tbiv	5.19	3.56
Pdh Tj = TOL	58.60 kW	54.50 kW
COP Tj = TOL	5.19	3.56
Cdh	1.00	1.00
WTOL	60 °C	60 °C

Poff	0 W	0 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Elektrizität	Elektrizität
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	24485 kWh	25527 kWh