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Summary of	AQUATOP S11	Reg. No.	011-1W0306
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	AQUATOP S11		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R410a		
Mass Of Refrigerant	2.9 kg		
Certification Date	04.05.2019		

Model: AQUATOP S11

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		
	Medium temperature	**Low temperature**
Heat output	10.49 kW	9.10 kW
El input	2.11 kW	3.20 kW
COP	4.98	2.84
Indoor water flow rate	1.85 m³/h	1.03 m³/h

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	38 dB(A)	38 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	198 %	153 %
Prated	11.00 kW	10.00 kW
SCOP	5.15	4.04
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	10.80 kW	9.99 kW
COP Tj = -7°C	4.80	3.12
Pdh Tj = +2°C	10.97 kW	10.44 kW
COP Tj = +2°C	5.18	4.06
Pdh Tj = +7°C	11.11 kW	10.70 kW
COP Tj = +7°C	5.46	4.62
Pdh Tj = 12°C	11.24 kW	10.97 kW
COP Tj = 12°C	5.75	5.18
Pdh Tj = Tbiv	10.75 kW	9.86 kW
COP Tj = Tbiv	4.71	2.84

Pdh Tj = TOL	10.75 kW	9.86 kW
COP Tj = TOL	4.71	2.84
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	20 W	20 W
PSB	20 W	20 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	4316 kWh	5046 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	38 dB(A)	38 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	199 %	154 %
Prated	11.00 kW	10.00 kW

SCOP	5.18	4.05
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	10.75 kW	9.86 kW
COP Tj = +2°C	4.71	2.84
Pdh Tj = +7°C	10.93 kW	10.26 kW
COP Tj = +7°C	5.08	3.68
Pdh Tj = 12°C	11.15 kW	10.79 kW
COP Tj = 12°C	5.55	4.80
Pdh Tj = Tbiv	10.75 kW	9.86 kW
COP Tj = Tbiv	4.71	2.84
Pdh Tj = TOL	10.75 kW	9.86 kW
COP Tj = TOL	4.71	2.84
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	20 W	20 W
PSB	20 W	20 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	2772 kWh	3252 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	38 dB(A)	38 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	202 %	158 %
Prated	11.00 kW	10.00 kW
SCOP	5.25	4.15
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	10.97 kW	10.35 kW
COP Tj = -7°C	5.18	3.87
Pdh Tj = +2°C	11.11 kW	10.66 kW
COP Tj = +2°C	5.46	4.52
Pdh Tj = +7°C	11.20 kW	10.88 kW
COP Tj = +7°C	5.65	4.99
Pdh Tj = 12°C	11.24 kW	11.06 kW

COP Tj = 12°C	5.74	5.36
Pdh Tj = Tbiv	10.75 kW	9.86 kW
COP Tj = Tbiv	4.71	2.84
Pdh Tj = TOL	10.75 kW	9.86 kW
COP Tj = TOL	4.71	2.84
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	20 W	20 W
PSB	20 W	20 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	5050 kWh	5859 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	13.34 kW	12.51 kW
El input	2.19 kW	3.31 kW
COP	6.08	3.78
Indoor water flow rate	2.31 m³/h	1.38 m³/h

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	258 %	207 %

Prated	13.00 kW	13.00 kW
SCOP	6.65	5.38
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	13.40 kW	12.67 kW
COP Tj = -7°C	6.20	4.15
Pdh Tj = +2°C	13.61 kW	13.25 kW
COP Tj = +2°C	6.69	5.40
Pdh Tj = +7°C	13.79 kW	13.58 kW
COP Tj = +7°C	7.05	6.15
Pdh Tj = 12°C	13.95 kW	13.92 kW
COP Tj = 12°C	7.41	6.89
Pdh Tj = Tbiv	13.34 kW	12.51 kW
COP Tj = Tbiv	6.08	3.78
Pdh Tj = TOL	13.34 kW	12.51 kW
COP Tj = TOL	6.08	3.78
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	20 W	20 W
PSB	20 W	20 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	4145 kWh	4801 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	259 %	207 %
Prated	13.00 kW	13.00 kW
SCOP	6.68	5.38
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	13.34 kW	12.51 kW
COP Tj = +2°C	6.08	3.78
Pdh Tj = +7°C	13.56 kW	13.02 kW
COP Tj = +7°C	6.56	4.90

Pdh Tj = 12°C	13.84 kW	13.69 kW
COP Tj = 12°C	7.16	6.39
Pdh Tj = Tbiv	13.34 kW	12.51 kW
COP Tj = Tbiv	6.08	3.78
Pdh Tj = TOL	13.34 kW	12.51 kW
COP Tj = TOL	6.08	3.78
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	0 W	0 W
PTO	20 W	20 W
PSB	20 W	20 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	2668 kWh	3105 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	34 dB(A)	34 dB(A)

EN 14825

	Medium temperature	Low temperature
η_s	262 %	212 %
Prated	13.00 kW	13.00 kW
SCOP	6.75	5.51
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	13.61 kW	13.13 kW
COP Tj = -7°C	6.69	5.15
Pdh Tj = +2°C	13.79 kW	13.53 kW
COP Tj = +2°C	7.05	6.02
Pdh Tj = +7°C	13.90 kW	13.80 kW
COP Tj = +7°C	7.29	6.64
Pdh Tj = 12°C	13.95 kW	14.03 kW
COP Tj = 12°C	7.41	7.13
Pdh Tj = Tbiv	13.34 kW	12.51 kW
COP Tj = Tbiv	6.08	3.78
Pdh Tj = TOL	13.34 kW	12.51 kW
COP Tj = TOL	6.08	3.78
Cdh	1.00	1.00
WTOL	65 °C	65 °C

Poff	0 W	0 W
PTO	20 W	20 W
PSB	20 W	20 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	4869 kWh	5595 kWh