Summary of	AQUATOP T22H	Reg. No.	011-1W0309
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 T22H		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R407c		
Mass Of Refrigerant	4.1 kg		
Certification Date	04.05.2019		

Model: AQUATOP T22H

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	21.00 kW	20.40 kW
El input	4.60 kW	7.00 kW
COP	4.60	2.90
Indoor water flow rate	3.65 m³/h	2.58 m³/h

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	201 %	167 %
Prated	21.00 kW	20.00 kW
SCOP	5.23	4.38
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	21.21 kW	21.01 kW
COP Tj = -7°C	4.69	3.16
Pdh Tj = +2°C	21.84 kW	22.64 kW
COP Tj = +2°C	5.24	4.35
Pdh Tj = +7°C	22.26 kW	23.46 kW
COP Tj = +7°C	5.47	5.10
Pdh Tj = 12°C	22.68 kW	24.48 kW
COP Tj = 12°C	5.80	5.97
Pdh Tj = Tbiv	21.00 kW	20.40 kW
COP Tj = Tbiv	4.60	2.90

Pdh Tj = TOL	21.00 kW	20.40 kW
COP Tj = TOL	4.60	2.90
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	8297 kWh	9624 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	202 %	169 %
Prated	21.00 kW	20.00 kW

SCOP	5.25	4.42
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	21.00 kW	20.40 kW
COP Tj = +2°C	4.60	2.90
Pdh Tj = +7°C	21.63 kW	21.83 kW
COP Tj = +7°C	5.06	3.86
Pdh Tj = 12°C	22.26 kW	23.87 kW
COP Tj = 12°C	5.57	5.37
Pdh Tj = Tbiv	21.00 kW	20.40 kW
COP Tj = Tbiv	4.60	2.90
Pdh Tj = TOL	21.00 kW	20.40 kW
COP Tj = TOL	4.60	2.90
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW

Annual energy consumption Qhe	5341 kWh	6160 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	206 %	174 %
Prated	21.00 kW	20.00 kW
SCOP	5.35	4.54
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	21.84 kW	22.24 kW
COP Tj = -7°C	5.24	4.09
Pdh Tj = +2°C	22.26 kW	23.46 kW
COP Tj = +2°C	5.47	4.96
Pdh Tj = +7°C	22.47 kW	24.28 kW
COP Tj = +7°C	5.70	5.63
Pdh Tj = 12°C	22.68 kW	24.89 kW

COP Tj = 12°C	5.80	6.09
Pdh Tj = Tbiv	21.00 kW	20.40 kW
COP Tj = Tbiv	4.60	2.90
Pdh Tj = TOL	21.00 kW	20.40 kW
COP Tj = TOL	4.60	2.90
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	9677 kWh	11077 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	25.90 kW	25.60 kW
El input	4.70 kW	7.30 kW
COP	5.50	3.90
Indoor water flow rate	4.45 m³/h	3.19 m³/h

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	240 %	193 %

Prated	26.00 kW	26.00 kW
SCOP	6.20	5.03
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	26.11 kW	26.17 kW
COP Tj = -7°C	5.64	3.78
Pdh Tj = +2°C	26.74 kW	27.80 kW
COP Tj = +2°C	6.19	4.97
Pdh Tj = +7°C	27.16 kW	28.62 kW
COP Tj = +7°C	6.42	5.72
Pdh Tj = 12°C	27.58 kW	29.64 kW
COP Tj = 12°C	6.74	6.59
Pdh Tj = Tbiv	25.90 kW	25.56 kW
COP Tj = Tbiv	5.55	3.52
Pdh Tj = TOL	25.90 kW	25.56 kW
COP Tj = TOL	5.55	3.53
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	8634 kWh	10501 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	54 dB(A)	54 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	241 %	195 %
Prated	26.00 kW	26.00 kW
SCOP	6.22	5.08
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	25.90 kW	25.56 kW
COP Tj = +2°C	5.55	3.52
Pdh Tj = +7°C	26.53 kW	26.99 kW
COP Tj = +7°C	6.00	4.48

Pdh Tj = 12°C	27.16 kW	29.03 kW
COP Tj = 12°C	6.51	5.99
Pdh Tj = Tbiv	25.90 kW	25.56 kW
COP Tj = Tbiv	5.55	3.52
Pdh Tj = TOL	25.90 kW	25.56 kW
COP Tj = TOL	5.55	3.52
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	5566 kWh	6720 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	54 dB(A)	54 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	244 %	197 %
Prated	26.00 kW	26.00 kW
SCOP	6.29	5.12
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	26.74 kW	27.40 kW
COP Tj = -7°C	6.19	4.71
Pdh Tj = +2°C	27.16 kW	28.62 kW
COP Tj = +2°C	6.42	5.58
Pdh Tj = +7°C	27.37 kW	29.44 kW
COP Tj = +7°C	6.64	6.25
Pdh Tj = 12°C	27.58 kW	30.05 kW
COP Tj = 12°C	6.74	6.71
Pdh Tj = Tbiv	25.90 kW	25.56 kW
COP Tj = Tbiv	5.55	3.52
Pdh Tj = TOL	25.90 kW	25.56 kW
COP Tj = TOL	5.55	3.52
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	ElektrizitÃ¤t	ElektrizitÃ¤t
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	10151 kWh	12316 kWh