

## Subtype AQUATOP T43H

Certificate Holder	ELCO GmbH
Address	Hohenzollernstrasse 31
ZIP	72379
City	Hechingen
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	AQUATOP T43H
Registration number	011-1W0312
Heat Pump Type	Brine/Water and Water/Water
Refrigerant	R407c
Mass of Refrigerant	7.4 kg
Certification Date	04.05.2019

## Model AQUATOP T43H

Model name	AQUATOP T43H
Application	Heating (medium temp)
Units	Indoor
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

## Brine/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	61 dB(A)	61 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	192 %	180 %
Prated	44.40 kW	41.30 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
Cdh Tj = -7 °C		
Pdh Tj = +2°C	46.18 kW	45.84 kW
COP Tj = +2°C	5.02	4.65
Cdh Tj = +2 °C		
Pdh Tj = +7°C	47.06 kW	47.50 kW
COP Tj = +7°C	5.24	5.46
Cdh Tj = +7 °C		
Pdh Tj = 12°C	47.95 kW	49.56 kW
COP Tj = 12°C	5.54	6.39
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	44.40 kW	41.30 kW
COP Tj = Tbiv	4.40	3.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	44.40 kW	41.30 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.40	3.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	18311 kWh	18195 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	61 dB(A)	61 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	197 %	187 %
Prated	44.40 kW	41.30 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
Cdh Tj = -7 °C		
Pdh Tj = +2°C	47.06 kW	47.50 kW
COP Tj = +2°C	5.24	5.30
Cdh Tj = +2 °C		
Pdh Tj = +7°C	47.51 kW	49.15 kW
COP Tj = +7°C	5.46	6.01
Cdh Tj = +7 °C		
Pdh Tj = 12°C	47.95 kW	50.39 kW
COP Tj = 12°C	5.54	6.51
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	44.40 kW	41.30 kW
COP Tj = Tbiv	4.40	3.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	44.40 kW	41.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.40	3.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q <sub>he</sub>	21336 kWh	20905 kWh

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	61 dB(A)	61 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	193 %	181 %
Prated	44.40 kW	41.30 kW
SCOP	5.04	4.74
T <sub>biv</sub>	2 °C	2 °C
TOL	-22 °C	-22 °C
P <sub>dh</sub> T <sub>j</sub> = +2°C	44.40 kW	41.30 kW
COP T <sub>j</sub> = +2°C	4.40	3.10
C <sub>dh</sub> T <sub>j</sub> = +2 °C		
P <sub>dh</sub> T <sub>j</sub> = +7°C	45.73 kW	44.19 kW
COP T <sub>j</sub> = +7°C	4.84	4.12
C <sub>dh</sub> T <sub>j</sub> = +7 °C		
P <sub>dh</sub> T <sub>j</sub> = 12°C	47.06 kW	48.32 kW
COP T <sub>j</sub> = 12°C	5.32	5.74
C <sub>dh</sub> T <sub>j</sub> = +12 °C		
P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>	44.40 kW	41.30 kW
COP T <sub>j</sub> = T <sub>biv</sub>	4.40	3.10
P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	44.40 kW	41.30 kW
COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	4.40	3.10
C <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>	1.000	1.000
WTOL	60 °C	60 °C
P <sub>off</sub>	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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q <sub>he</sub>	11777 kWh	11648 kWh

#### Water/Water

#### EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

#### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	61 dB(A)	61 dB(A)

#### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	224 %	199 %
Prated	58.60 kW	54.50 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
Cdh Tj = -7 °C		
Pdh Tj = +2°C	60.38 kW	59.04 kW
COP Tj = +2°C	5.81	5.11
Cdh Tj = +2 °C		
Pdh Tj = +7°C	61.26 kW	60.70 kW
COP Tj = +7°C	6.02	5.92
Cdh Tj = +7 °C		
Pdh Tj = 12°C	62.15 kW	62.76 kW
COP Tj = 12°C	6.33	6.85
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	58.60 kW	54.50 kW
COP Tj = Tbiv	5.19	3.56
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	58.60 kW	54.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.19	3.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	20831 kWh	21775 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
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Sound power level indoor	61 dB(A)	61 dB(A)
EN 14825   Colder Climate		
	Low temperature	Medium temperature
$\eta_s$	228 %	203 %
Prated	58.60 kW	54.50 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
Cdh Tj = -7 °C		
Pdh Tj = +2°C	61.26 kW	60.70 kW
COP Tj = +2°C	6.02	5.76
Cdh Tj = +2 °C		
Pdh Tj = +7°C	61.71 kW	62.35 kW
COP Tj = +7°C	6.25	6.47
Cdh Tj = +7 °C		
Pdh Tj = 12°C	62.15 kW	63.59 kW
COP Tj = 12°C	6.33	6.97
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	58.60 kW	54.50 kW
COP Tj = Tbiv	5.19	3.56
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	58.60 kW	54.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.19	3.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	24485 kWh	25527 kWh

EN 12102-1   Warmer Climate		
	Low temperature	Medium temperature
Sound power level indoor	61 dB(A)	61 dB(A)
EN 14825   Warmer Climate		
	Low temperature	Medium temperature
$\eta_s$	225 %	201 %

Prated	58.60 kW	54.50 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
Cdh Tj = +2 °C		
Pdh Tj = +7°C	59.93 kW	57.39 kW
COP Tj = +7°C	5.63	4.58
Cdh Tj = +7 °C		
Pdh Tj = 12°C	61.26 kW	61.52 kW
COP Tj = 12°C	6.11	6.20
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	58.60 kW	54.50 kW
COP Tj = Tbiv	5.19	3.56
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	58.60 kW	54.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.19	3.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	13422 kWh	13929 kWh