

# **QUERY®WATER**

## **QW1000**

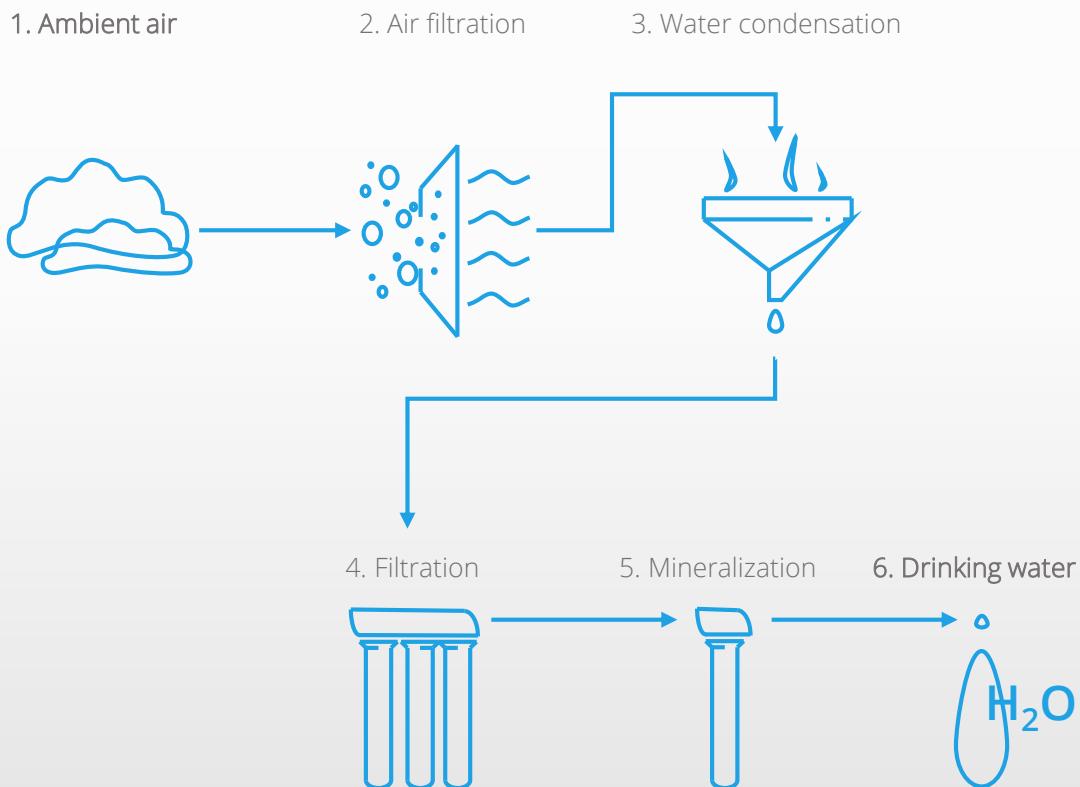


**Technical datasheet**  
**Atmospheric water generator „AWG“**

### How it works

Technology for making drinking water uses the characteristics of an absorber cooler, where air humidity condenses on the heat exchanger. The condensed water is then filtered through a seven-stage treatment and subsequently mineralized. The water is then treated with UV filtration to remove 99.9% of organic bacteria. Furthermore, the patented filter technology of drinking water will make the water more tasty and fresh, providing clean and safe water, that is ready for drink. For industrial units above 100 liters, units can be equipped with additional water cooling or heating (cold 6°C, warm 82°C). Additional technology, which can be included, is „Always pure“ automatic cycling mode, which provides every three hours water protection through the treatment.

The principle can be summarized into easy points:



### Main advantages

- **It produces up to 1000 liters of pure water per day!** Stable water supply every day.
- The innovative control system can adjust the operation to save the electrical energy more efficiently for the maximum possible use during continuous operation.
- It produces low noise level, because there are specially designed fans.
- The new 4th generation saves 50% of energy, compared to other common technologies.
- Compatibility of control and modularity.

## QW1000 - Atmospheric water generator

### Description

The atmospheric water generator, type QW1000, is designed for larger scale industrial purposes for producing clean drinking water under operating conditions from 20% air humidity and 15°C air temperature. They can be used both in the outdoor environment and inside environment as the air dehumidifier or air purifier.

To ensure that water quality is maintained throughout the entire production process, units consists of fully automatized system with seven-stage filtration technology, including UV treatment and mineralization.

Primary areas of use are in need of clean drinking water. Especially for drinking regime and then for irrigation. It can also be used in industry, where water quality is needed.

### Another benefits

- **Excellent water quality** meets and exceeds the US EPA (Environmental Protection Agency), the World Health Organization and US military specifications.
- **Certification** of quality and management: GB/T19001-2008 idt., ISO9001: 2008 and **European standards**: EN60335-2-24-2010, EN60335-2-15-2002 + A1: 2005 + A2: 2008 + A11: 2012, EN60335-1: 2012, EN62233:2008
- **Significant water quality** provides drinking water for up to 450 people per day (according to FEMA - Federal Emergency Response Agency, a normally an active person needs 1.5 to 3 liters of water per day)
- **Price** is favorable and highly competitive and more economical, than existing solutions in water production.
- **Support alternative sources** of energy from solar panels, wind power plants or from water power plants...
- **Energy saving** and innovative energy management system can save up to half of energy, which means saving money.
- **Working teoretically in any environment**, even in non-adaptive conditions. The units are condensing water from the ambient air by absorbing cooling and then are also suitable for areas with low humidity.
- **Modular solutions** are scalable and can be built for everyday use of water with less than a hundred people up to several thousands people.



QW1000 - Atmospheric water generator



Rear view with open door



Right side



Service door



Left side

## Draft tables

QUERY®WATER - QW1000								
Temp.	Tab.1 Water production per day [liter]							
	Humid.	25%	30%	40%	50%	60%	70%	80%
15°C		87,72	93,50	128,10	175,44	224,92	321,91	350,88
20°C		142,55	151,90	208,10	285,10	318,65	395,13	450,45
25°C		180,54	192,40	263,60	361,07	454,95	641,48	763,36
30°C		230,70	245,80	336,80	461,40	632,11	884,96	1000,00
35°C		272,22	295,25	404,55	544,45	745,89	1044,25	1180,00
40°C		313,60	344,99	472,71	627,20	859,27	1202,97	1359,36
45°C		356,56	394,73	540,87	713,13	976,99	1367,78	1545,59
50°C		396,50	444,47	609,03	793,00	1086,41	1520,97	1718,70
55°C		440,11	494,21	677,19	880,23	1205,91	1688,28	1907,76
								2403,77

QUERY®WATER - QW1000								
Temp.	Tab. 2 Days needed to full fill [day]							
	Humid.	25%	30%	40%	50%	60%	70%	80%
15°C		11,40	10,70	7,81	5,70	4,45	3,11	2,85
20°C		7,02	6,58	4,81	3,51	3,14	2,53	2,22
25°C		5,54	5,20	3,79	2,77	2,20	1,56	1,31
30°C		4,33	4,07	2,97	2,17	1,58	1,13	1,00
35°C		3,67	3,39	2,47	1,84	1,34	0,96	0,85
40°C		3,19	2,90	2,12	1,59	1,16	0,83	0,74
45°C		2,80	2,53	1,85	1,40	1,02	0,73	0,65
50°C		2,52	2,25	1,64	1,26	0,92	0,66	0,58
55°C		2,27	2,02	1,48	1,14	0,83	0,59	0,52
								0,42

QUERY®WATER - QW1000								
Temp.	Tab.3 Water production [%]							
	Humid.	25%	30%	40%	50%	60%	70%	80%
15°C		9%	9%	13%	18%	22%	32%	35%
20°C		14%	15%	21%	29%	32%	40%	45%
25°C		18%	19%	26%	36%	45%	64%	76%
30°C		23%	25%	34%	46%	63%	88%	100%
35°C		27%	30%	40%	54%	75%	104%	118%
40°C		31%	34%	47%	63%	86%	120%	136%
45°C		36%	39%	54%	71%	98%	137%	155%
50°C		40%	44%	61%	79%	109%	152%	172%
55°C		44%	49%	68%	88%	121%	169%	191%
								240%

## QW1000 - Atmospheric water generator

### QUERY®WATER - QW1000

Temp. Humid.	Tab.4 Power consumption for full load [kWh]							
	25%	30%	40%	50%	60%	70%	<b>80%</b>	90%
15°C	3365,28	3157,22	2304,45	1682,64	1312,46	917,04	841,32	647,17
20°C	2070,89	1943,38	1418,55	1035,44	926,39	747,09	655,34	474,89
25°C	1635,14	1534,30	1119,88	817,57	648,86	460,19	386,71	314,40
<b>30°C</b>	1279,60	1200,98	876,48	639,80	467,01	333,58	<b>295,20</b>	234,29
35°C	1084,40	999,83	729,70	542,20	395,77	282,69	250,17	198,55
40°C	941,32	855,68	624,48	470,66	343,55	245,39	217,16	172,35
45°C	827,90	747,85	545,79	413,95	302,15	215,82	190,99	151,58
50°C	744,52	664,16	484,71	372,26	271,72	194,09	171,76	136,32
55°C	670,73	597,32	435,92	335,37	244,79	174,85	154,74	122,81

### QUERY®WATER - QW1000

Temp. Humid.	Tab.5 Electricity consumption per 1 liter of water [kWh]							
	25%	30%	40%	50%	60%	70%	<b>80%</b>	90%
15°C	3,37	3,16	2,30	1,68	1,31	0,92	0,84	0,65
20°C	2,07	1,94	1,42	1,04	0,93	0,75	0,66	0,47
25°C	1,64	1,53	1,12	0,82	0,65	0,46	0,39	0,31
<b>30°C</b>	1,28	1,20	0,88	0,64	0,47	0,33	<b>0,30</b>	0,23
35°C	1,08	1,00	0,73	0,54	0,40	0,28	0,25	0,20
40°C	0,94	0,86	0,62	0,47	0,34	0,25	0,22	0,17
45°C	0,83	0,75	0,55	0,41	0,30	0,22	0,19	0,15
50°C	0,74	0,66	0,48	0,37	0,27	0,19	0,17	0,14
55°C	0,67	0,60	0,44	0,34	0,24	0,17	0,15	0,12

### QUERY®WATER - QW1000

Temp. Humid.	Tab.6 Production price 1 liter of water [USD]							
	25%	30%	40%	50%	60%	70%	<b>80%</b>	90%
15°C	\$ 0,36	\$ 0,34	\$ 0,25	\$ 0,18	\$ 0,14	\$ 0,10	\$ 0,09	\$ 0,07
20°C	\$ 0,22	\$ 0,21	\$ 0,15	\$ 0,11	\$ 0,10	\$ 0,08	\$ 0,07	\$ 0,05
25°C	\$ 0,18	\$ 0,17	\$ 0,12	\$ 0,09	\$ 0,07	\$ 0,05	\$ 0,04	\$ 0,03
<b>30°C</b>	\$ 0,14	\$ 0,13	\$ 0,09	\$ 0,07	\$ 0,05	\$ 0,04	<b>\$ 0,03</b>	\$ 0,03
35°C	\$ 0,12	\$ 0,11	\$ 0,08	\$ 0,06	\$ 0,04	\$ 0,03	\$ 0,03	\$ 0,02
40°C	\$ 0,10	\$ 0,09	\$ 0,07	\$ 0,05	\$ 0,04	\$ 0,03	\$ 0,02	\$ 0,02
45°C	\$ 0,09	\$ 0,08	\$ 0,06	\$ 0,04	\$ 0,03	\$ 0,02	\$ 0,02	\$ 0,02
50°C	\$ 0,08	\$ 0,07	\$ 0,05	\$ 0,04	\$ 0,03	\$ 0,02	\$ 0,02	\$ 0,01
55°C	\$ 0,07	\$ 0,06	\$ 0,05	\$ 0,04	\$ 0,03	\$ 0,02	\$ 0,02	\$ 0,01

At electricity price \$ 0,11 per 1kW

## Technical details

QUERY®WATER model type		QW1000
Power supply		3/N/PE AC 380V 50Hz or AC 440V 60Hz Three-phase voltage
Power consumption	Total consumption	12,3 kW
	Compressor consumption	11 kW
Rated current	Starting / working current	77,0 A / 14,2 A
Compressor	Compressor type	Copeland / Emerson
	Number of compressors	2 pieces
	Protections	- Delay protection - Phase-sequence Protection - Hi & low pressure protection - Overheat & overload protection
Refrigerant	Gas type	R407c
	Control type	External balance type, thermal expansion valve
	Gas amount	2x 4,7 kg
Evaporator type	Efficient copper tube, coated with aluminum fin	
Condenser type	Efficient copper tube, coated with aluminum fin	

Working conditions	Standard working temperature	Standard working temperature: 15°C - 45°C. In case the temp below 15°C or higher 45°C, system needs to be customized.
	Air humidity	20% - 100%
Control	Control	Touch screen
	Control system	PLC
	Errors reporting	On display

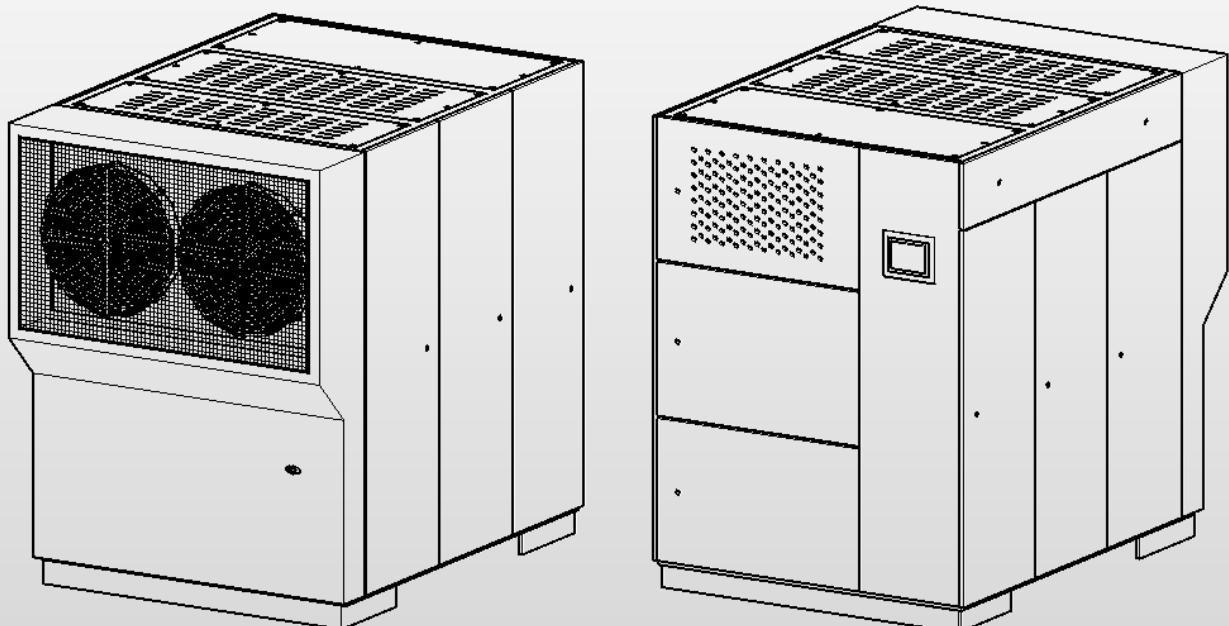
Amount of circulating air	5900 m <sup>3</sup> /h	
Amount of hot exhausting air	7800 m <sup>3</sup> /h	
Operation sound level	≤ 70 dB	
External static pressure	0 Pa	
Air supply fan	Type	High efficient centrifugal fan
	Amount	2 pieces
Air filter A	Dimensions	1450x530x46 mm (LxHxW)
	Type	G3 non woven
Air filter B	Dimensions	1450x440x46 mm (LxHxW)
	Type	G3 non-woven

Water tanks	Drinking water tank	2x 53 l
	Condensed water tank	70 l
	Pressure vessel	2x 75 l
	Material	Stainless steel sheet
Water production	Up to 1000 liters in 24 hours	
Connecting to external tank (connector dimension)	1/2"	

## QW1000 - Atmospheric water generator

Filter cartridges	Air filter A	1 piece
	Air filter B	1 piece
	UV fluorescent tube	1 piece
	Sediment filter	1 piece
	Filter with active carbon	1 piece
	Membrane filter	1 piece
	Carbon filter	1 piece
	Mineralisation	1 piece
Frequency of replacing filters	Air filter A	1 year
	Air filter B	1 year
	UV fluorescent tube	2 years
	Sediment filter	6 months
	Filter with active carbon	6 months
	Membrane filter	1 year
	Carbon filter	1 year
	Mineralisation	1 year

Machine dimensions	2165x1550x2076 mm (LxWxH)	
Machine weight	Net	1070 kg





QW1000 - Atmospheric water generator

## Notes

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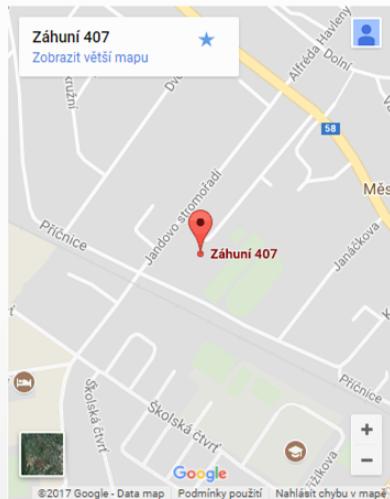
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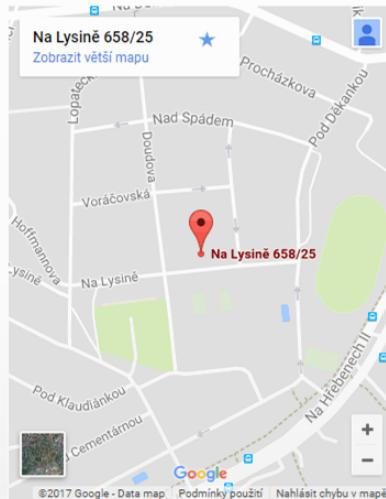
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