ULTRAQUBE GFRP SERIES (6-18)

OZONE OXIDATION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT

ULTRAQUA

OZONE SYSTEMS

WE PROTECT YOUR MOST VALUABLE RESOURCE

ULTRAQUBE GFRP SERIES

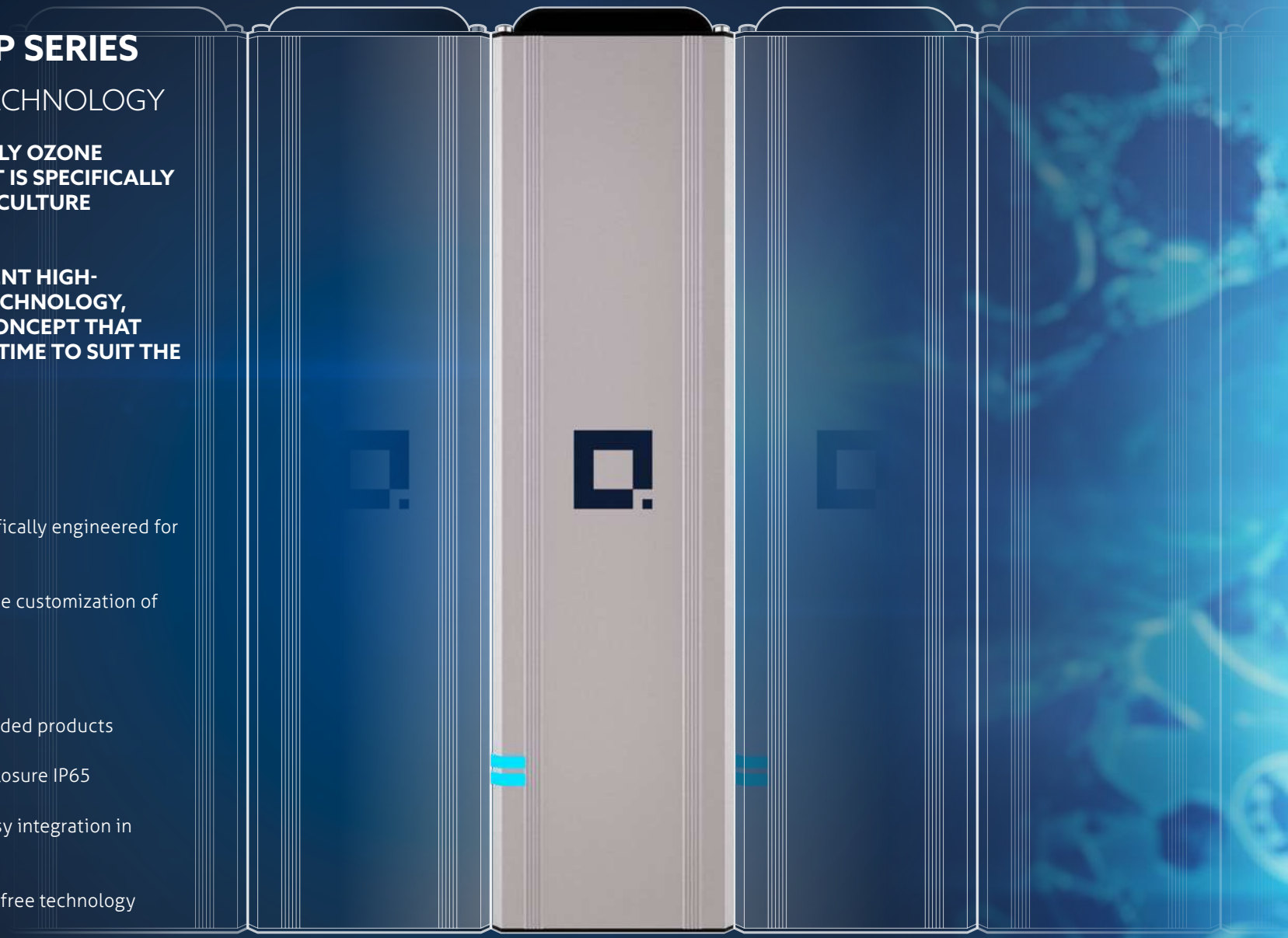
OPTIMIZED OZONE TECHNOLOGY

THE ULTRAQUBE™ IS THE ONLY OZONE SYSTEM IN THE WORLD THAT IS SPECIFICALLY ENGINEERED FOR THE AQUACULTURE INDUSTRY.

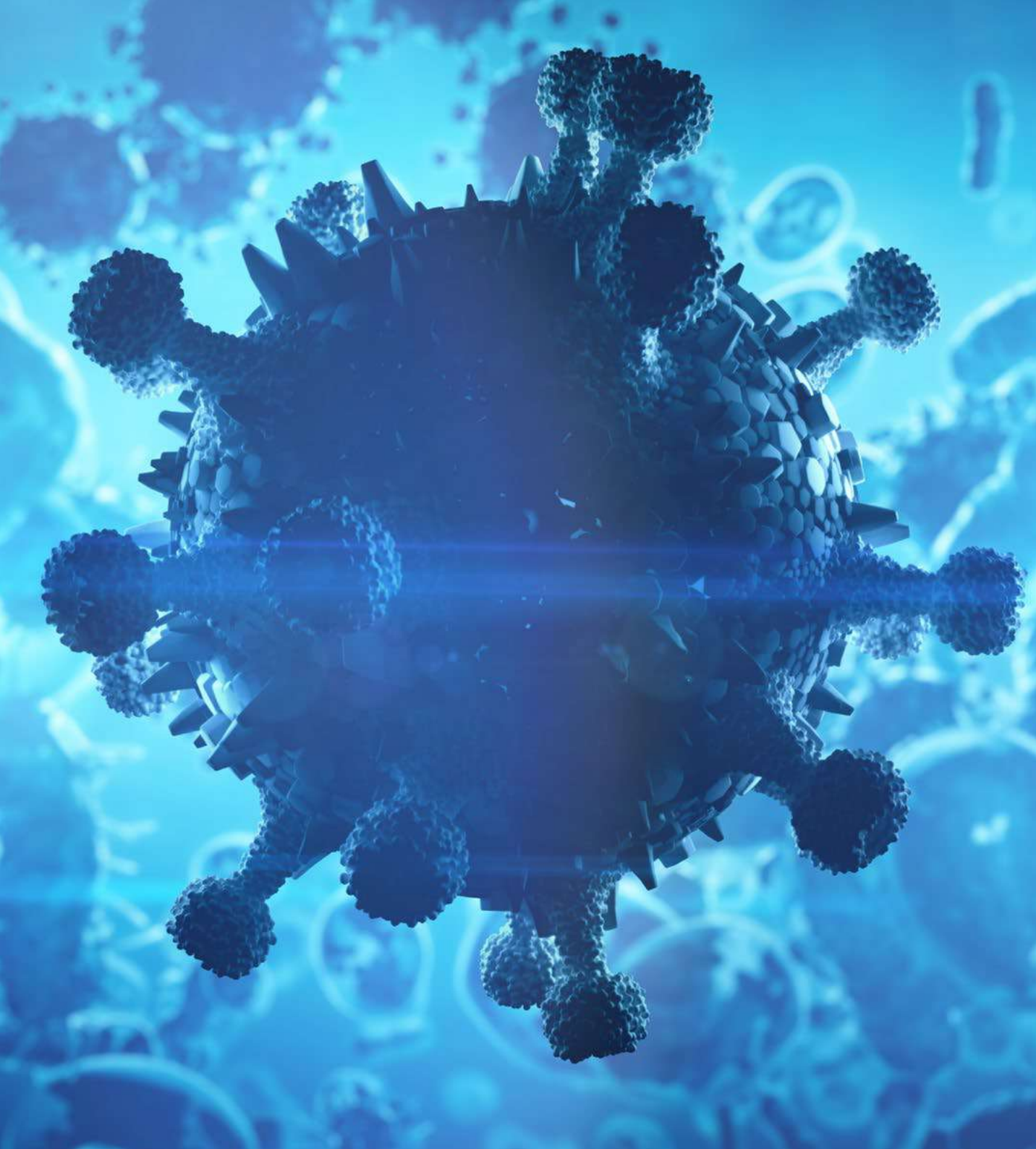
IT FEATURES ENERGY-EFFICIENT HIGH-CONCENTRATION OZONE TECHNOLOGY, DESIGNED AS A SCALABLE CONCEPT THAT FITS CUSTOMIZATION OVER TIME TO SUIT THE EXACT REQUIREMENTS.

KEY HIGHLIGHTS

- The only ozone generator specifically engineered for the Aquaculture industry
- Scalable concept for trouble-free customization of ozone demand
- 9-20 wt% ozone concentration
- Full ozone system with value added products
- Non-corrosive plastic GFRP enclosure IP65
- Robust and compact unit for easy integration in complex environments
- Safe, sustainable, and chemical-free technology



MARKET LEADING ENERGY EFFICIENCY



CORE BENEFITS OF OZONE

OZONE TECHNOLOGY IS A GLOBALLY RECOGNIZED SOLUTION FOR WATER DISINFECTION, EFFECTIVELY OXIDIZING A WIDE RANGE OF CONTAMINANTS, INCLUDING BACTERIA, VIRUSES, AS WELL AS ORGANIC AND INORGANIC SUBSTANCES.

The need for economical and effective solutions to provide clean water is at an all-time high and continuously increasing. Ozone treatment addresses this complex issue, meeting the most stringent requirements for bacteria and virus protection, as well as improving the overall quality of water.

Ozone technology provides an effective solution across various water qualities and applications, being one of the strongest oxidizing agents available for water treatment. The broad disinfection spectrum makes ozone extremely efficient against a wide range of microorganisms to provide a high level of biosecurity.

With the proper installation conditions, ozone disinfection leaves no chemical residue, as it decomposes back into oxygen. This makes facilities worldwide able to reduce their dependency on chemical treatment, leading to both environmental benefits and potential cost savings.

ULTRAAQUA ozone disinfection systems offers market-leading ozone efficiency while being thoroughly cost-optimized. The tailored design allows for comprehensive scalability and modularity, allowing flexibility to adjust for additional demand.

ULTRAAQUA

ROBUST INNOVATIVE DESIGN
The selection of high quality components ensures robustness and durability that lets the ULTRAQUBE endure the test of time.

OXYGEN VALVE
The valve closes automatically upon emergency stop and when no gas flow is required for increased safety and to save gas.

SAMPLE PORT
Easy integration with connection of an external gas analyser, allowing to adjust the gas flow on concentration.

COOLING WATER VALVE
The cooling water valve closes automatically when no cooling water is required.

COMPACT DESIGN
The ULTRAQUBE features a compact innovative reactor design that allows easy integration in complex environments.

AUTOMATED ACCURATE DOSING
The dosing is automatically controlled by Redox or flow values.

OPTIMIZED OZONE EFFICIENCY
The ULTRAQUBE™ features energy-efficient high-concentration ozone technology, with each integrated inverter producing 88 grams of ozone per hour.

SCALABLE AND FLEXIBLE
The integrated inverter produces 88 grams of ozone per hour. If the demand increases, additional modules can be integrated to meet the requirements.

CUSTOMIZED SOLUTIONS

ULTRAAQUA EMPLOYS AN ENTIRE DEPARTMENT OF ENGINEERS WHO ARE SPECIALIZED IN THE DESIGN AND CONSTRUCTION OF UV SYSTEMS.

Multiple years of experience within relevant applications makes it possible to tailor the individual ozone system to accommodate specific requirements.

As ozone systems consist of several components which each contributes to the effectiveness and efficiency of the system, the needs for customization can vary from gas distribution management to cooling modules. This makes the ULTRAAQUA design department function as a consulting agency, working towards an optimized customized solution.

The possibilities below are available for all customized ozone systems.

CUSTOMIZED PRODUCTS & SERVICES:

- Custom Ozone systems for advanced applications
- Physical testing
- Onsite validation testing
- Advanced Ozone disinfection support

Comprehensive technical knowledge makes the engineers able to assist with installation details such as weir design, water level control devices, and many other project-specific matters.

R&D CAPACITIES

SINCE 1996, THE R&D DEPARTMENT HAS BEEN THE BACKBONE OF ULTRAAQUA.

Employing the brightest industry specialists with great diversity for continuous innovation has been vital to the success of the company.

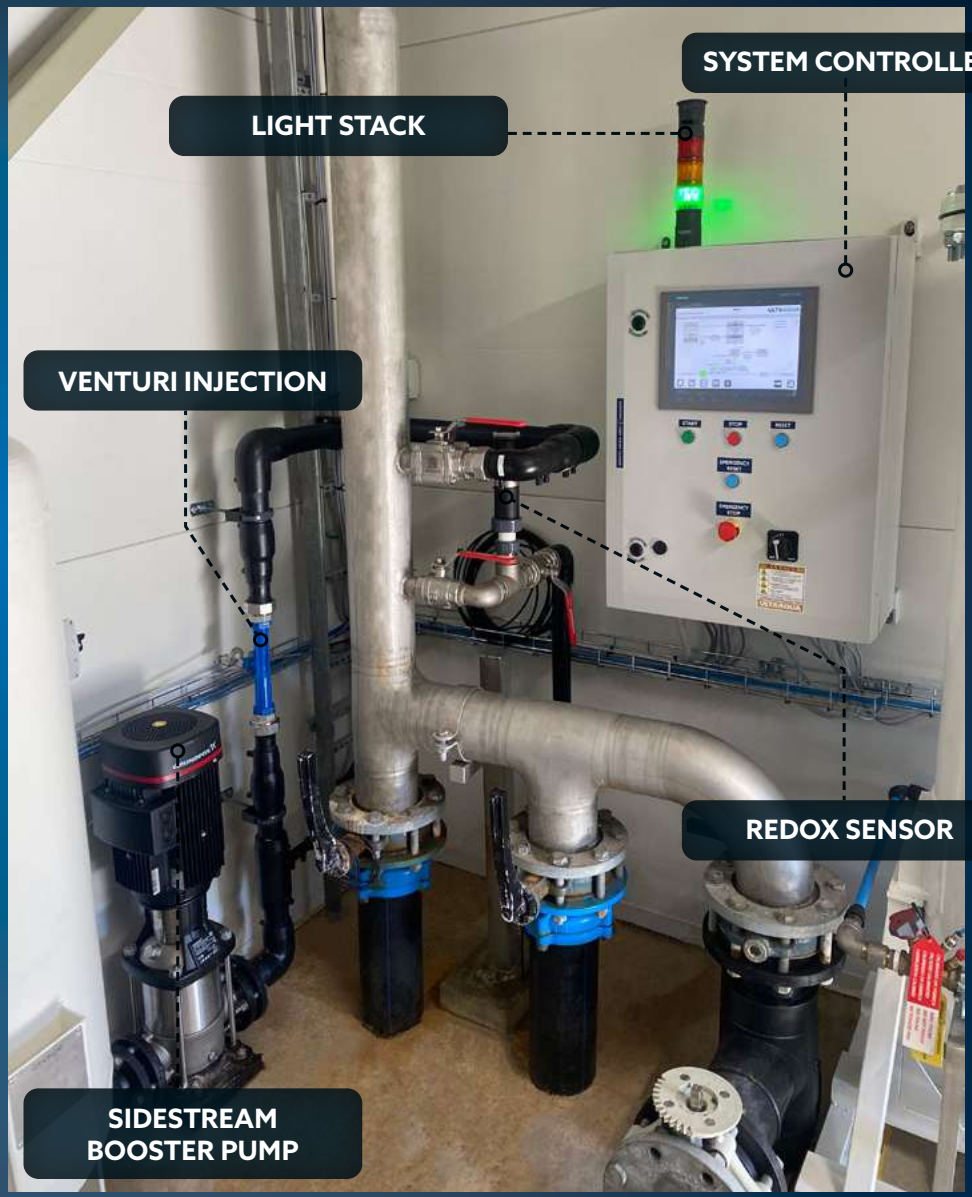
The ULTRAAQUA R&D department conducts, supports, and pioneers some of the latest developmental work within the water industry. These projects are often done in collaboration with specialists from municipalities, universities, top tier consultancies and international companies. The projects are primarily focused on developing unique and advanced chemical-free disinfection solution for some of the worlds most complex water quality problems.

The comprehensive in-house testing area facilitates optimal conditions for research, development, and innovation. With the ability to run full scale pilot trials and a 40 ft research container to support local testing combined with cutting edge engineering, makes us confident that ULTRAAQUA is the right partner for your organization.

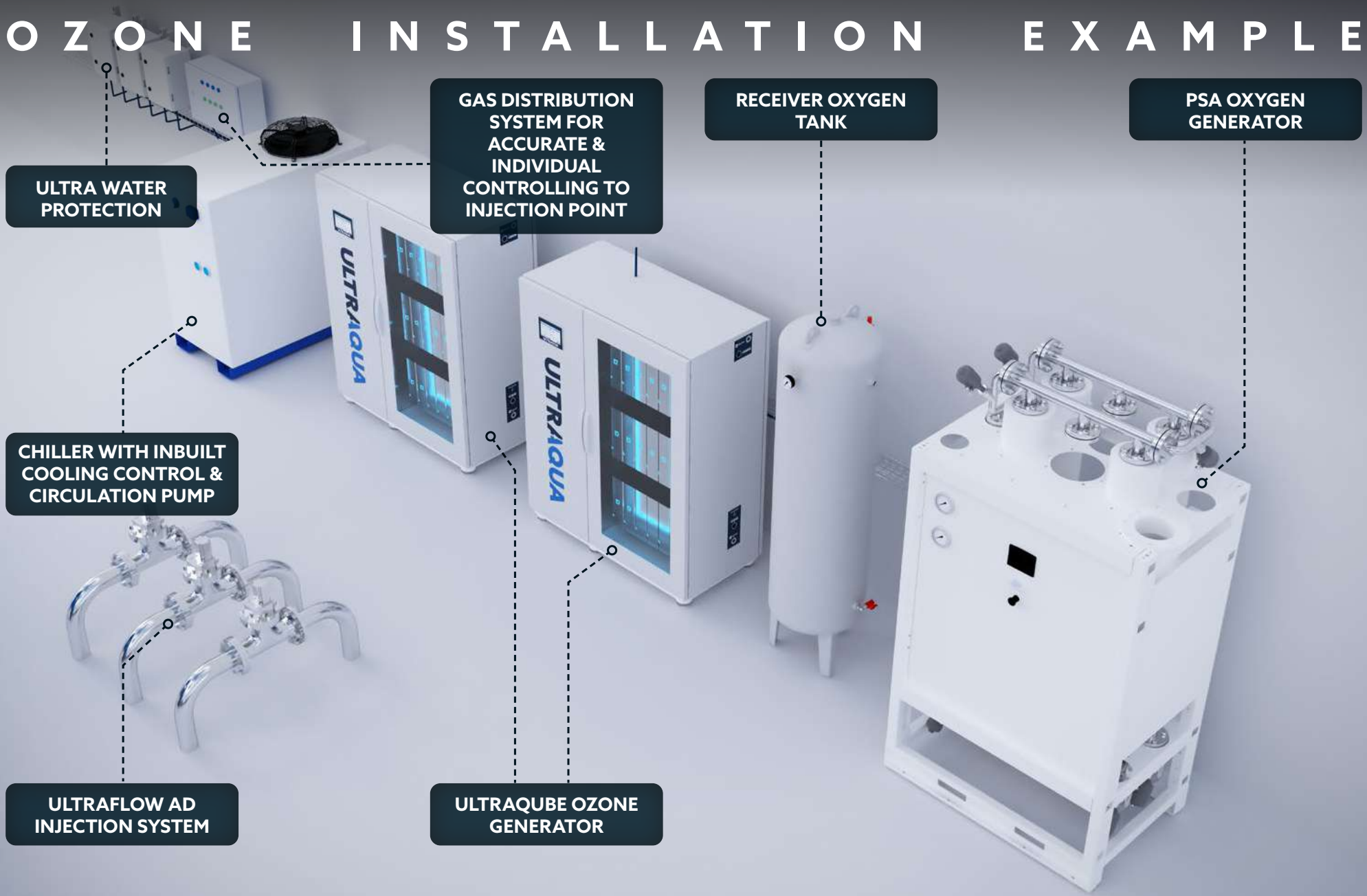
This ultimately allows ULTRAAQUA to position itself amongst the industry leaders within Ozone and UV disinfection, supplying customers with the best available solutions.

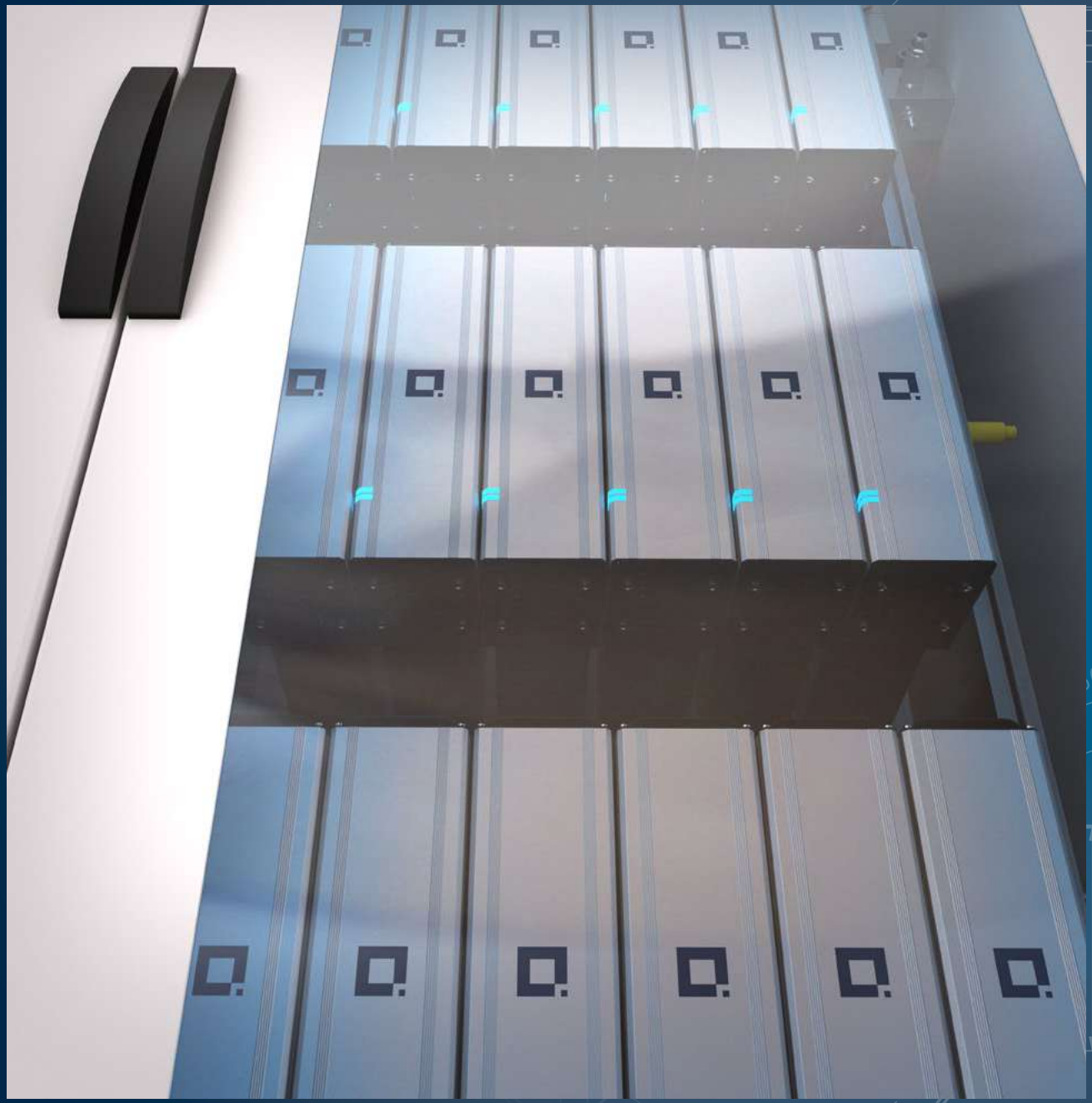
ULTRAAQUA

INSTALLATION CASE



OZONE INSTALLATION EXAMPLE





SCALABILITY & MODULARITY

The ULTRAQUBE is scalable with an integrated inverter that produces 88 grams of ozone per hour.

If the demand increases, additional modules can be integrated to meet the requirements.

- 230 / 400 VAC
- Cooling water up to 30°C
- Beijer/Siemens Control System 7" HMI

Frame Size 2 (6 modules) - (18 modules)
Frame Size 3 (12 modules) - (36 modules)
Frame Size 4 (24 modules) - (48 modules)

- 36 reactors = 3,2 kg O3/hour
- 48 reactors = 4,2 kg O3/hour

PERFORMANCE / CONC.	ULTRAQUBE-1 GFRP	ULTRAQUBE-2 GFRP	ULTRAQUBE-3 GFRP	ULTRAQUBE-4 GFRP	ULTRAQUBE-5 GFRP
140 g/Nm³ 10% wt/wt	88 g/hr (4.66 lbs/day)	176 g/hr (9.31 lbs/day)	264 g/hr (13.97 lbs/day)	352 g/hr (18.62 lbs/day)	440 g/hr (23.28 lbs/day)
200 g/Nm³ 14% wt/wt	74 g/hr (3.92 lbs/day)	150 g/hr (7.94 lbs/day)	224 g/hr (11.85 lbs/day)	300 g/hr (15.87 lbs/day)	376 g/hr (19.89 lbs/day)
250 g/Nm³ 17,5% wt/wt	52 g/hr (2,75 lbs/day)	106 g/hr (5.61 lbs/day)	160 g/hr (8.47 lbs/day)	214 g/hr (11.32 lbs/day)	268 g/hr (14.18 lbs/day)
300 g/Nm³ 20% wt/wt	40 g/hr (2.12 lbs/day)	82 g/hr (4.34 lbs/day)	124 g/hr (6.56 lbs/day)	166 g/hr (8.78 lbs/day)	208 g/hr (11.01 lbs/day)

Working Conditions: At 12°C cooling water, 98% oxygen purity, 100% power

CABINET SPECIFICATIONS					
Weight	56 kg / 122 lbs	64 kg / 141 lbs	73 kg / 160 lbs	81 kg / 179 lbs	90 kg / 197 lbs
Length	420 mm / 16.5 in				
Width	1250 mm / 49.2 in				
Height	500 mm / 19.7 in				
Ingress Protection	IP65 / NEMA 4X				
Temperature	5-40° C				
Humidity	< 95% Non-Condensing				
Noise Level	< 53dB				
Cabinet Material	Glass Fiber Reinforced Plastic (GFRP)				

ELECTRICAL SPECIFICATIONS					
Power (100%)	7.5 kW	1.5 kW	2.25 kW	3.0 kW	3.75 kW
Energy Consumption	<8.5 kW per kg O³ / 3,63 kW/lbs*				
Power Supply	3x400V + N + PE, AC 50 / 60 Hz				
Power Factor	0.95				
Control Range	20-100%				
Circuit Breaker Type - Power Supply	Use C-Characteristic Fuses on the Incoming Power Supply				
SCADA Communication	MODBUS TCP				

** At an ozone gas concentration of 140 g/Nm³ and cooling water temperature at 12°C.*

FEED GAS SPECIFICATIONS					
Feed Gas Amount	0.65 m³/hr (23 ft³/hr)	1.3 m³/hr (46 ft³/hr)	1.95 m³/hr (69 ft³/hr)	2.6 m³/hr (92 ft³/hr)	3.25 m³/hr (115 ft³/hr)
Max Gas Pressure at Inlet	3 bar(g) / 43,5 psi(g)				
Oxygen Purity	>92%				
Oxygen Dew Point	<-40°C / <-40°F				
Oxygen Connector	¼ Internal Threaded BSP				

COOLING SPECIFICATIONS					
Min. Cooling Water Flow	0.12 m³/hr (4.24 ft³/hr)	0.24 m³/hr (8.48 ft³/hr)	0.36 m³/hr (12.71 ft³/hr)	0.48 m³/hr (16.95 ft³/hr)	0.6 m³/hr (21.19 ft³/hr)
Cooling Demand	0.7 kW	1.4 kW	2.1 kW	2.8 kW	3.5 kW
Cooling Water Temp. Range	2-30°C / 36 - 86°F				
Max Cooling Water Pressure	6 bar(g) / 87 psi(g)				
Cooling Water Connection	½" Internal Threaded BSP				
Cooling Agent Composition	30 % Ethylene Glycol and 70 % Water				
Water Hardness	< 10° dH / < 9,5 gpg				
Water Quality	Drinking Water (98/83/EC), Closed Loop System				
Target Temp. Ozone Generator	12°C / 54°F				

PERFORMANCE / CONC.	ULTRAQUBE-6 GFRP	ULTRAQUBE-7 GFRP	ULTRAQUBE-8 GFRP	ULTRAQUBE-9 GFRP	ULTRAQUBE-10 GFRP	ULTRAQUBE-11 GFRP
140 g/Nm³ 10% wt/wt	528 g/hr (27.94 lbs/day)	616 g/hr (32.59 lbs/day)	704 g/hr (37.25 lbs/day)	792 g/hr (41.91 lbs/day)	880 g/hr (46.56 lbs/day)	968 g/hr (51.22 lbs/day)
200 g/Nm³ 14% wt/wt	450 g/hr (23.81 lbs/day)	526 g/hr (27.83 lbs/day)	602 g/hr (31.85 lbs/day)	676 g/hr (35.77 lbs/day)	752 g/hr (39.79 lbs/day)	828 g/hr (43.81 lbs/day)
250 g/Nm³ 17,5% wt/wt	322 g/hr (17.04 lbs/day)	376 g/hr (19.89 lbs/day)	430 g/hr (22.75 lbs/day)	484 g/hr (25.61 lbs/day)	538 g/hr (28.47 lbs/day)	592 g/hr (31.32 lbs/day)
300 g/Nm³ 20% wt/wt	250 g/hr (13.23 lbs/day)	292 g/hr (15.45 lbs/day)	334 g/hr (17.67 lbs/day)	376 g/hr (19.89 lbs/day)	418 g/hr (22.12 lbs/day)	460 g/hr (24.34 lbs/day)

Working Conditions: At 12°C cooling water, 98% oxygen purity, 100% power

CABINET SPECIFICATIONS						
Weight	228 kg / 503 lbs	244 kg / 537 lbs	252 kg / 556 lbs	261 kg / 574 lbs	269 kg / 593 lbs	278 kg / 612 lbs
Length	620 mm / 24.4 in					
Width	1250 mm / 49.2 in					
Height	1500 mm / 59.1 in					
Ingress Protection	IP65 / NEMA 4X					
Temperature	5-40° C					
Humidity	< 95% Non-Condensing					
Noise Level	< 53dB					
Cabinet Material	Glass Fiber Reinforced Plastic (GFRP)					

ELECTRICAL SPECIFICATIONS						
Power (100%)	4.5 kW	5.25 kW	6.0 kW	6.75 kW	7.5 kW	8.25 kW
Energy Consumption	<8.5 kW per kg O³ / 3,63 kW/lbs*					
Power Supply	3x400V + N + PE, AC 50 / 60 Hz					
Power Factor	0.95					
Control Range	10-100%					
Circuit Breaker Type - Power Supply	Use C-Characteristic Fuses on the Incoming Power Supply					
SCADA Communication	MODBUS TCP					

** At an ozone gas concentration of 140 g/Nm³ and cooling water temperature at 12°C.*

FEED GAS SPECIFICATIONS						
Feed Gas Amount	3.9 m³/hr (138 ft³/hr)	4.55 m³/hr (161 ft³/hr)	5.2 m³/hr (184 ft³/hr)	5.85 m³/hr (207 ft³/hr)	6.5 m³/hr (230 ft³/hr)	7.15 m³/hr (253 ft³/hr)
Max Gas Pressure at Inlet	3 bar(g) / 43,5 psi(g)					
Oxygen Purity	>92%					
Oxygen Dew Point	<-40°C / <-40°F					
Oxygen Connector	¼ Internal Threaded BSP					

COOLING SPECIFICATIONS						
Min. Cooling Water Flow	0.72 m³/hr (25.43 ft³/hr)	0.84 m³/hr (29.66 ft³/hr)	0.96 m³/hr (33.9 ft³/hr)	1.08 m³/hr (38.14 ft³/hr)	1.2 m³/hr (42.38 ft³/hr)	1.32 m³/hr (46.62 ft³/hr)
Cooling Demand	4.2 kW	4.9 kW	5.6 kW	6.3 kW	7.0 kW	7.7 kW
Cooling Water Temp. Range	2-30°C / 36 - 86°F					
Max Cooling Water Pressure	6 bar(g) / 87 psi(g)					
Cooling Water Connection	½" Internal Threaded BSP					
Cooling Agent Composition	30 % Ethylene Glycol and 70 % Water					
Water Hardness	< 10° dH / < 9,5 gpg					
Water Quality	Drinking Water (98/83/EC), Closed Loop System					
Target Temp. Ozone Generator	12°C / 54°F					

PERFORMANCE / CONC.	ULTRAQUBE-12 GFRP	ULTRAQUBE-13 GFRP	ULTRAQUBE-14 GFRP	ULTRAQUBE-15 GFRP	ULTRAQUBE-16 GFRP	ULTRAQUBE-17 GFRP	ULTRAQUBE-18 GFRP
140 g/Nm³ 10% wt/wt	1056 g/hr (55.87 lbs/day)	1144 g/hr (60.53 lbs/day)	1232 g/hr (65.19 lbs/day)	1320 g/hr (69.84 lbs/day)	1408 g/hr (74.50 lbs/day)	1496 g/hr (79.15 lbs/day)	1584 g/hr (83.81 lbs/day)
200 g/Nm³ 14% wt/wt	902 g/hr (47.73 lbs/day)	978 g/hr (51.75 lbs/day)	1054 g/hr (55.77 lbs/day)	1128 g/hr (59.68 lbs/day)	1204 g/hr (63.70 lbs/day)	1280 g/hr (67.72 lbs/day)	1354 g/hr (71.64 lbs/day)
250 g/Nm³ 17,5% wt/wt	646 g/hr (34.18 lbs/day)	700 g/hr (37.04 lbs/day)	754 g/hr (39.89 lbs/day)	808 g/hr (42.75 lbs/day)	862 g/hr (45.61 lbs/day)	916 g/hr (48.47 lbs/day)	970 g/hr (51.32 lbs/day)
300 g/Nm³ 20% wt/wt	502 g/hr (26.56 lbs/day)	544 g/hr (28.78 lbs/day)	586 g/hr (31.01 lbs/day)	628 g/hr (33.23 lbs/day)	670 g/hr (35.45 lbs/day)	712 g/hr (37.67 lbs/day)	754 g/hr (39.89 lbs/day)

Working Conditions: At 12°C cooling water, 98% oxygen purity, 100% power

CABINET SPECIFICATIONS							
Weight	293 kg / 646 lbs	302 kg / 665 lbs	310 kg / 683 lbs	319 kg / 702 lbs	327 kg / 721 lbs	336 kg / 740 lbs	344 kg / 758 lbs
Length	620 mm / 24.4 in						
Width	1250 mm / 49.2 in						
Height	1500 mm / 59.1 in						
Ingress Protection	IP65 / NEMA 4X						
Temperature	5-40° C						
Humidity	< 95% Non-Condensing						
Noise Level	< 53dB						
Cabinet Material	Glass Fiber Reinforced Plastic (GFRP)						

ELECTRICAL SPECIFICATIONS							
Power (100%)	9.0 kW	9.75 kW	10.5 kW	11.25 kW	12.0 kW	12.75 kW	13.5 kW
Energy Consumption	<8.5 kW per kg O³ / 3,63 kW/lbs*						
Power Supply	3x400V + N + PE, AC 50 / 60 Hz						
Power Factor	0.95						
Control Range	10-100%						
Circuit Breaker Type - Power Supply	Use C-Characteristic Fuses on the Incoming Power Supply						
SCADA Communication	MODBUS TCP						

** At an ozone gas concentration of 140 g/Nm³ and cooling water temperature at 12°C.*

FEED GAS SPECIFICATIONS							
Feed Gas Amount	7.8 m³/hr (276 ft³/hr)	8.45 m³/hr (299 ft³/hr)	9.1 m³/hr (322 ft³/hr)	9.75 m³/hr (345 ft³/hr)	10.4 m³/hr (368 ft³/hr)	11.05 m³/hr (391 ft³/hr)	11.7 m³/hr (414 ft³/hr)
Max Gas Pressure at Inlet	3 bar(g) / 43,5 psi(g)						
Oxygen Purity	>92%						
Oxygen Dew Point	<-40°C / <-40°F						
Oxygen Connector	¼ Internal Threaded BSP						

COOLING SPECIFICATIONS							
Min. Cooling Water Flow	1.44 m³/hr (50.85 ft³/hr)	1.56 m³/hr (55.09 ft³/hr)	1.68 m³/hr (59.33 ft³/hr)	1.8 m³/hr (63.57 ft³/hr)	1.92 m³/hr (67.8 ft³/hr)	2.04 m³/hr (72.04 ft³/hr)	2.16 m³/hr (76.28 ft³/hr)
Cooling Demand	8.4 kW	9.1 kW	9.8 kW	10.5 kW	11.2 kW	11.9 kW	12.6 kW
Cooling Water Temp. Range	2-30°C / 36 - 86°F						
Max Cooling Water Pressure	6 bar(g) / 87 psi(g)						
Cooling Water Connection	½" Internal Threaded BSP						
Cooling Agent Composition	30 % Ethylene Glycol and 70 % Water						
Water Hardness	< 10° dH / < 9,5 gpg						
Water Quality	Drinking Water (98/83/EC), Closed Loop System						
Target Temp. Ozone Generator	12°C / 54°F						

SERVICE & SUPPORT

ULTRAAQUA IS A GLOBAL COMPANY OFFERING WORLDWIDE SERVICE AND SUPPORT, WITH ITS HEAD OFFICE BASED IN DENMARK.

With operations in over 120 countries and an install base of 10.000 systems, ULTRAAQUA is able to offer extensive support regarding installation and maintenance with its wide-ranging network of regional offices.

The technical support team in our head office provides 24-hour remote service upon agreement, ensuring that potential emergencies are avoided.

At ULTRAAQUA, we wish to provide a complete product experience for our customers, from the very start of determining requirements to ongoing operational maintenance. This means that our responsibility does not stop after the Ozone system reaches its destination. By establishing a close collaboration with all clients, a streamlined process is effectively ensured throughout all post-installation activities.

Our support services include, but are not limited to:

- General technical support
- Advanced 24-hour support upon agreement
- Spare part ordering and shipping services
- Commissioning
- On-site training
- On-site technical support

If needed, qualified engineers are available for on-site training and technical support, being able to assist in setting up the entire system. Extensive information and technical knowledge is always provided, to ensure maximum performance and system reliability.

COMPANY HISTORY

ULTRAAQUA IS AN INTERNATIONAL MANUFACTURER OF ADVANCED UV AND OZONE WATER DISINFECTION SYSTEMS SOLUTIONS FOR A WIDE RANGE OF WATER TREATMENT APPLICATIONS.

The company was founded in 1996 by two Danish scientists, with the mission of solving the increasing global water safety challenges, by combining extensive research, innovation, and technology. Today, more than 10.000 disinfection systems have been supplied worldwide, to help create a more sustainable world.

ULTRAAQUA operates through a carefully selected partner network, with activity in more than 120 countries. The partner network has been key to the success of ULTRAAQUA, making it possible to deliver cutting-edge disinfection systems across the globe.

Continuous research and innovation activities have made it possible to maintain the position of delivering cutting-edge solutions to clients with diverse requirements in different applications.

Global experience combined with advanced knowledge of dealing with varying customer requirements, ensures an optimal solution to accommodate every client. Combined with a dedicated support experience, a streamlined operational process is guaranteed.

ULTRAQUA