NON-CORROSIVE PP/PEHD SERIES

UV DISINFECTION · EFFICIENT AND CHEMICAL-FREE WATER TREATMENT



WE PROTECT YOUR MOST VALUABLE RESOURCE

NON-CORROSIVE PP/PEHD SERIES

THE PP/PEHD SERIES IS DEVELOPED SPECIFICALLY FOR HARSH CORROSIVE **ENVIRONMENTS.**

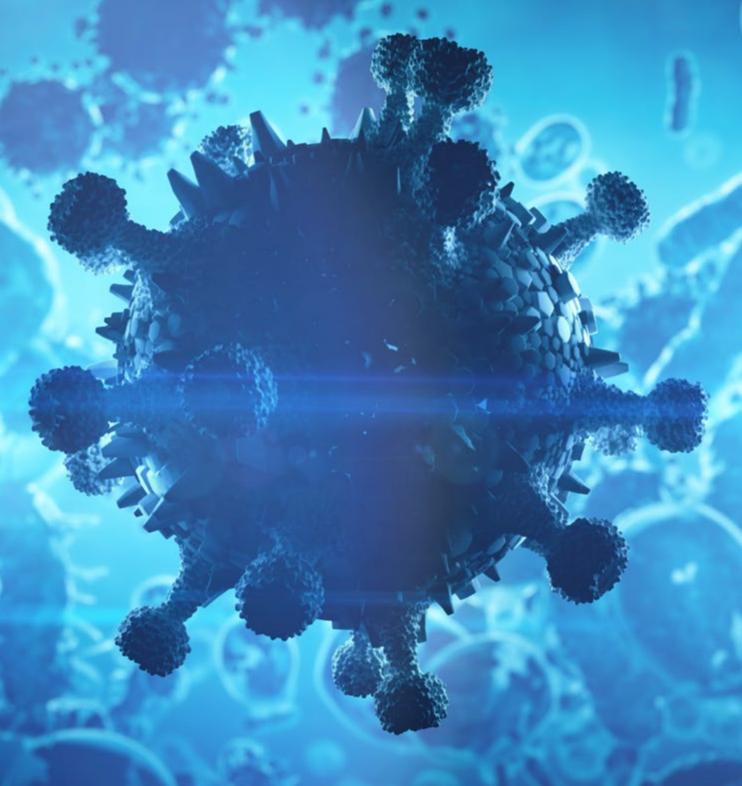
THE MATERIAL ENSURES OPERATIONAL **EXCELLENCE ACROSS SEVERAL APPLICATIONS, DUE TO ITS EXCEPTIONAL DURABILITY, TEMPERATURE RESISTANCE** AND PRESSURE RESISTANCE, BEING ABLE TO WITHSTAND THE MOST CORROSIVE **ENVIRONMENTS AROUND THE GLOBE.**

KEY HIGHLIGHTS

- Guaranteed 16.000-hour ULTRATHERM™ lamp lifetime
- Optimized for maximum efficiency
- 6 Easy maintenance and installation
- **6** Complete control with ULTRATOUCH™ control cabinets
- 6 Automated ULTRAWIPER™ quartz cleaning with tailored brush heads
- Extended 5 years warranty available subject to terms & conditions



MARKET LEADING ENERGY EFFICIENCY



CORE BENEFITS OF UV

UV TECHNOLOGY IS A GLOBALLY ACCEPTED SOLUTION FOR WATER DISINFECTION, EFFECTIVELY INACTIVATING BACTERIA, VIRUSES, AND PROTOZOA.

The demand for cost-efficient solutions to provide clean water are at an all-time high and will only increase in the future. UV disinfection solves this complex challenge, being able to meet the strictest requirements regarding bacteria and virus protection.

Due to recent developments, UV disinfection is now an effective alternative in a wide range of water qualities and applications. Improved technological and design configurations have made UV a viable OPEX and CAPEX solution for disinfection processes as well as in more advanced applications such as Advanced Oxidation Processes (AOP).

Choosing UV as the disinfection method ensures optimal CAPEX and OPEX conditions compared to its alternatives, making UV the best solution for a wide range of installations.

ULTRAAQUA UV disinfection systems are easy to install, maintain, and thoroughly cost-optimized. The third-party approvals for performance and quality ensure complete peace of mind, employing the best available solution for complete biosecurity.





MAXIMUM PERFORMANCE IN CORROSIVE ENVIRONMENTS

The material ensures operational excellence across several applications, due to its exceptional durability, temperature resistance and pressure resistance, being able to withstand the most corrosive environments.

EASY MAINTENANCE AND INSTALLATION

With a design that allows for easy maintenance and single sided access, the system is easily installable and can be serviced using no special tools.

The unique interlocking electrical and mechanical lamp connectors make servicing of the system safe, quick, and fool proof.

OPTIONAL AUTOMATED ULTRAWIPER™

The automatic wiping mechanism keeps the quartz sleeves and UV sensor clean.

EXCEPTIONAL LAMP LIFETIME

The integrated ULTRATHERM™ lamps offer the very latest low pressure Amalgam UV lamp technology, being optimized for energy efficiency and robustness. The substantial 16.000 hours of lamp lifetime offers market leading lamp efficiency in UV-C output density.

SUITABLE FOR COMPLEX INSTALLATION CONDITIONS ULTRATOUCH™ **CONTROL CABINETS -TOUCH SCREEN HMI** INTERLOCKING LAMP CONNECTORS WALL MOUNTED **PANEL OPTIONS MULTIPLE FLANGE OPTIONS + UP TO 6 BAR CHAMBER PRESSURE HORIZONTAL OR VERTICAL MOUNTING HORIZONTAL MOUNTING -OPTIONAL ORIENTATION INLET &**

OUTLET CHANGES



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 adjust any standard UV system to accommodate specific requirements.

The customization requirements can vary from adjustments such as reactor shape or flange size, to adding new advanced features. This makes the ULTRAAQUA design department function as a consulting agency, working towards an optimized customized solution. This means that we can ensure on site validation to various standards, fitting your exact requirements.

The following possibilities are available for all customized UV units:

Customized services

- Integrated CFD Analysis
- Particle tracing modeling analysis
- Determining fluence rate
- Physical testing
- Onsite validation testing
- Advanced UV disinfection support

Customized products

- **6** Custom UV systems for advanced applications
- Packaged plant equipment
 - 6 Including mobile treatment container
 - Skid packages

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 UV disinfection, supplying customers with the best available solutions.

ULTRAQUA
UV DISINFECTION SYSTEMS





0.		
pecifications are subject to change without notice, version: 23.		
notice.		
WITHOUT		
change		
subject to		
ons are s		
pecification		
^		

Event Log

UV Dose

UV Dose Alarm

UV SYSTEM	MR1-75PP STD	MR2-75PP STD	MR3-75PP STD	MR4-75PP STD	MR1-75PP ADV	MR2-75PP ADV	MR3-75PP ADV
Product ID	22052	22060	22070	22080	22052	22060	22070
Approvals				CE (Option UL/ cUL)			
UV LAMPS & MONITORING							
Lamp Number	1	2	3	4	1	2	3
ULTRATHERM™ LPHO Lamp				75W			
Guaranteed Lamp Lifetime				9 000 Hours			
UV Monitoring		N.	/A		U\	/ Intensity sensor non-corrosive P	TFE
Variable Power		N.	/A			50-100%	
UV CHAMBER							
Connection Size	1½" BSP	3" BSP	3" BSP	3" BSP	1½" BSP	3" BSP	3" BSP
Connection Type				PN10			
Design Pressure	8 Bar	6 Bar	6 Bar	6 Bar	8 Bar	6 Bar	6 Bar
Chamber Material			Non-Corro	sive UV-Stabilized Polypropylene (Op	otion PEHD)		
Internal & External Finish				Machined			
Lamp/Wiper Access Single Ended				Yes			
Quartz Type			High	Purity Fused Quartz Transmittance >	95%		
Mounting			Free	Standing (Option Horizontal Plastic S	tand)		
ULTRAWIPER™ System				N/A			
Temperature Probe				PTC Sensor			
Vent & Drain Ports		1/2"	1/2"	1/2"		1/2"	1/2"
Ingress Protection				IP65			
Installation				Horizontal / Vertical			
Minor Wetted Parts				FDA approved PTFE, PVDF, VITON			
CONTROL CABINET							
Cabinet Material				GFRP (Option SS304/SS316)			
Cabinet Sizes (H x W x D)	400x300x210mm	400x300x210mm	400x600x210mm	400x600x210mm	400x600x210mm	400x600x210mm	400x600x210mm
Cable Length				4 Meters (Max. 30 Meters)			
Installation & Ambient		Wallmount 0-40 °C		Wallmount 0-35 °C		Wallmount 0-40 °C	
Ingress Protection				IP65			
Thermal Control			Passive I	Dissipation (Option Fan / AC / Heat Ex	changer)		
Control Logic						Microprocessor	
Interface/HMI		Status LED Indicato	ors & Hour Counter		4 L	ine LCD with System State Indicat	tion
External Wiring					Remote O	N/OFF, Safety ON/OFF, System Sta	atus, Alarm
Power Consumption	0,08 kW	0,16 kW	0,24 kW	0,32 kW	0,08 kW	0,16 W	0,24 W
Power Supply				230VAC +/- 10% +N+PE 50/60Hz			
ADV. CONTROLLER FEATURES							
SCADA Communication						MODBUS RTU	
Analogue 4-20mA I/O						Flow Input/UV Irradiance Output	

Alarms

On Display, UV Intensity

UV Intensity Pre-Alarm & Alarm

UV SYSTEM	MR4-75PP ADV
Product ID	22080
Approvals	CE (Option UL/ cUL)

UV LAMPS & MONITORING	
Lamp Number	4
ULTRATHERM™ LPHO Lamp	75W
Guaranteed Lamp Lifetime	9 000 Hours
UV Monitoring	UV Intensity Sensor Non-Corrosive PTFE
Variable Power	50-100%

UV CHAMBER		
Connection Size	3" BSP	
Connection Type	PN10	
Design Pressure	6 Bar	
Chamber Material	Non-Corrosive UV-Stabilized Polypropylene (Option PEHD)	
Internal & External Finish	Machined	
Lamp/Wiper Access Single Ended	Yes	
Quartz Type	High Purity Fused Quartz Transmittance >95%	
Mounting	Free Standing (Option Horizontal Plastic Stand)	
ULTRAWIPER™ System	N/A	
Temperature Probe	PTC Sensor	
Vent & Drain Ports	1/2"	
Ingress Protection	IP65	
Installation	Horizontal / Vertical	
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON	

CONTROL CABINET	
Cabinet Material	GFRP (Option SS304/SS316)
Cabinet Sizes (H x W x D)	400x600x210mm
Cable Length	4 Meters (Max. 30 Meters)
Installation & Ambient	Wallmount 0-35 °C
Ingress Protection	IP65
Thermal Control	Passive Dissipation (Option Fan / AC / Heat Exchanger)
Control Logic	Microprocessor
Interface/HMI	4 Line LCD with System State Indication
External Wiring	Remote ON/OFF, Safety ON/OFF, System Status, Alarm
Power Consumption	0,32 kW
Power Supply	230VAC +/- 10% +N+PE 50/60Hz

ADV. CONTROLLER FEATURES					
SCADA Communication	MODBUS RTU				
Analogue 4-20mA I/O	Flow Input/UV Irradiance Output				
Event Log	Alarms				
UV Dose	On Display, UV Intensity				
UV Dose Alarm	UV Intensity Pre-Alarm & Alarm				

CONTROL CABINET VARIANTS

ONE LAMP STANDARD



ONE LAMP ADVANCED



MULTI LAMP



MULTI LAMP



UV SYSTEM	MR1-220PP STD	MR1-220PP ADV	MR3-220PP	MR4-220PP	MR6-220PP	MR8-220PP
Product ID	22110	22111	22112	22114	22116	22118
Product ID (Incl. ULTRAWIPER)			22113	22115	22117	22119
Approvals	CE (Option UL/ cUL)					

UV LAMPS & MONITORING							
Lamp Number	1	1	3	4	6	8	
ULTRATHERM™ LPHO Lamp	220W						
Guaranteed Lamp Lifetime	16 000 Hours						
UV Monitoring	N/A	UV Intensity Sensor Non-Corrosive PTFE (Option ÖNORM M5873 Certified Duplex)					
Variable Power	N/A	ULTRADOSE™ pacing 50-100%					

UV CHAMBER						
Connection Size	DN80	DN80	DN150	DN150	DN150	DN200
Connection Type			PN1C)		
Design Pressure	10 Bar	10 Bar	6 Bar (Option 10 Bar)	6 Bar (Option 10 Bar)	5 Bar (Option 10 Bar)	4 Bar (Option 10 Bar)
Chamber Material			Non-Corrosive UV-Stabilized Po	lypropylene (Option PEHD)		
Internal & External Finish	Machined					
Lamp/Wiper Access Single Ended	Yes					
Quartz Type	High Purity Fused Quartz Transmittance >95%					
Mounting	Free Standing (Option Horizontal Duplex Stand)					
ULTRAWIPER™ System	N/A (Option Automatic Mechanical With PTFE/Fiber Rings (Electrical))					
Temperature Probe	PTC Sensor 1x PT100					
Vent & Drain Ports	¹∕∆"					
Ingress Protection	IP65					
Installation	Horizontal / Vertical					
Minor Wetted Parts			FDA approved PTFI	E, PVDF, VITON		

CONTROL CABINET						
Cabinet Material			GFRP (Option	SS304/SS316)		
Cabinet Sizes (H x W x D)	400x300x210mm	400x600x210mm	800x600x300mm	800x600x300mm	1000x750x320mm	1000x1000x320mm
Cable Length			4 Meters (Ma	ax. 30 Meters)		
Installation & Ambient	Wallmount 0-40 °C Wallmount 0-34 °C					
Ingress Protection	IP65					
Thermal Control	Passive Dissipation (Option Fan / AC / Heat Exchanger)					
Control Logic		Microprocessor	Р	LC		
Interface/HMI	Status LED Indicators & Hour Counter	4 Line LCD with System State Indication	7" ULTRA	ATOUCH™		
External Wiring			Remote ON/OFF, Safety ON	N/OFF, System Status, Alarm		
Power Consumption	0,2 kW	0,2 kW	0,7 kW	1,0 kW	1,4 kW	1,9 kW
Power Supply			230VAC +/- 10%	+N+PE 50/60Hz		

ADV. CONTROLLER FEATURES					
SCADA Communication	MODBUS RTU	MODBUS TCP/IP (Option PROFINET)			
Analogue 4-20mA I/O	Flow Input/UV Irradiance Output	Flow Input/UV Dose Output (Option UVT Input)			
ULTRADOSE™		Automatic UV Dose Pacing 50-100%			
Event Log	Alarms	UV Dose, UV Intensity, Flow			
UV Dose	On Display, UV Intensity	On HMI, Actual UV Dose & Target UV Dose			
UV Dose Alarm	UV Intensity Pre-Alarm & Alarm	Pre-Alarm & Alarm			

UV SYSTEM	MR1-350PP STD	MR1-350PP ADV	MR3-350PP	MR4-350PP	MR6-350PP	MR8-350PP	MR12-350PP
Product ID	22210	22211	22215	22220	22230	22240	22250
Product ID (Incl. ULTRAWIPER)			22216	22221	22231	22241	22251
Approvals				CE (Option UL/ cUL)			

UV LAMPS & MONITORING							
Lamp Number	1	1	3	4	6	8	12
ULTRATHERM™ LPHO Lamp		350W					
Guaranteed Lamp Lifetime	16 000 Hours						
UV Monitoring	N/A	N/A UV Intensity Sensor Non-Corrosive PTFE (Option ÖNORM M5873 Certified Duplex)					
Variable Power	N/A			50-100%			

UV CHAMBER							
Connection Size	DN100	DN100	DN150	DN150	DN200	DN250	DN250
Connection Type				PN10			
Design Pressure	10 Bar	10 Bar	6 Bar (Option 10 Bar)	6 Bar (Option 10 Bar)	5 Bar (Option 10 Bar)	4 Bar (Option 10 Bar)	2,5 Bar (Option 10 Bar)
Chamber Material	Non-Corrosive UV-Stabilized Polypropylene (Option PEHD)						
Internal & External Finish	Machined						
Lamp/Wiper Access Single Ended	Yes						
Quartz Type	High Purity Fused Quartz Transmittance > 95%						
Mounting	Free Standing (Option Horizontal Duplex Stand)						
ULTRAWIPER™ System	N/A (Option Automatic Mechanical With PTFE/Fiber Rings (Electrical))						
Temperature Probe	PTC	Sensor			1x PT100		
Vent & Drain Ports			¹½"				1"
Ingress Protection	IP65						
Installation	Horizontal / Vertical						
Minor Wetted Parts				FDA approved PTFE, PVDF, VITON	I		

CONTROL CABINET							
Cabinet Material			Nor	n-Corrosive GFRP (Option SS304/S	S316)		
Cabinet Sizes (H x W x D)	400x600x210mm	400x600x210mm	800x600x300mm	1000x750x320mm	1000x1000x320mm	1000x1000x320mm	1000x1250x320mm
Cable Length	4 Meters (Max. 30 Meters)						
Installation & Ambient	Wallmount 0-40 °C	Wallmount 0-40 °C	Wallmount 0-35 °C	Wallmount 0-38 °C	Wallmount 0-35 °C	Wallmount 0-30 °C	Wallmount 0-26 °C
Ingress Protection	IP65						
Thermal Control			Passive D	Dissipation (Option Fan / AC / Heat	Exchanger)		
Control Logic		Microprocessor		PLC			
Interface/HMI	Status LED indicators	4 Line LCD with System State Indication		7" ULTRATOUCH™			
External Wiring		Remote ON/OFF, Safety ON/OFF, System Status, Alarm					
Power Consumption	0,4 kW	0,4 kW	1,1 kW	1,5 kW	2,3 kW	3,0 kW	4,5 kW
Power Supply		23	OVAC +/- 10% +N+PE 50/60Hz	<u>.</u>		3x400VAC +/- 109	% +N+PE 50/60Hz

ADV. CONTROLLER FEATURES			
SCADA Communication	MODBUS RTU	MODBUS TCP/IP (Option PROFINET)	
Analogue 4-20mA I/O	Flow Input/UV Irradiance Output	Flow Input/UV Dose Output (Option UVT Input)	
ULTRADOSE™		Automatic UV Dose Pacing 50-100%	
Event Log	Alarms	UV Dose, UV Intensity, Flow	
UV Dose	On Display, UV Intensity	On HMI, Actual UV Dose & Target UV Dose	
UV Dose Alarm	UV Intensity Pre-Alarm & Alarm	Pre-Alarm & Alarm	

_
ŭ
C
ċ
7
.,
ú
0
2
1
þ
.,
t
5
7
+
7
>
÷
÷
- 2
d
E
- 2
0
2
L
0
+
+
7
.,
2
Ξ
U
9
d
2
>
٠,
+
è
*
٧
ò
2

UV SYSTEM	MR16-350PP	MR18-350PP	MR20-350PP
Product ID	22260	22342	22291
Product ID (Incl. ULTRAWIPER)	22261	22343	22292
Approvals		CE (Option UL/ cUL)	

UV LAMPS & MONITORING				
Lamp Number	16	18	20	
ULTRATHERM™ LPHO Lamp		350W		
Guaranteed Lamp Lifetime		16 000 Hours		
UV Monitoring	UV Intensity Sensor Non-Corrosive PTFE (Option ÖNORM M5873 Certified Duplex)			
Variable Power		50-100%		

UV CHAMBER	
Connection Size	DN300
Connection Type	PN10
Design Pressure	2 Bar (Option 6 Bar)
Chamber Material	Non-Corrosive UV Stabilized Polypropylene (PP)
Internal & External Finish	Machined
Lamp/Wiper Access Single Ended	Yes
Quartz Type	High Purity Fused Quartz Transmittance >95%
Mounting	Free Standing (Option Horizontal SS316 Stand)
ULTRAWIPER™ System	(Option Automatic Mechanical With PTFE/Fiber Rings (Electrical))
Temperature Probe	PT100
Vent & Drain Ports	1"
Ingress Protection	IP65
Installation	Horizontal / Vertical
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON

CONTROL CABINET				
Cabinet Material	N	on-Corrosive GFRP (Option SS304/SS	5316)	
Cabinet Sizes (H x W x D)		1250x1250x420mm		
Cable Length	4 Meters (Max. 30 Meters)			
Installation & Ambient	Wallmount 0-26 °C	Wallmount 0-22 °C (Higher Optional)	Wallmount 0-20 °C (Higher Optional)	
Ingress Protection		IP65		
Thermal Control	Passive Dissipation (Option Fan / AC / Heat Exchanger)			
Control Logic	PLC			
Interface/HMI	7" ULTRATOUCH™			
External Wiring	Remote ON/OFF, Safety ON/OFF, System Status, Alarm			
Power Consumption	6,0 kW	6,8 kW	7,5 kW	
Power Supply	3x400VAC +/- 10% +N+PE 50/60Hz			

ADV. CONTROLLER FEATURES	
SCADA Communication	MODBUS TCP/IP (Option PROFINET)
Analogue 4-20mA I/O	Flow Input/UV Dose Output (Option UVT Input)
ULTRADOSE™	Automatic UV Dose Pacing 50-100%
Event Log	Yes (UV Dose, UV Intensity, Flow)
UV Dose	On Display (Actual & Target)
UV Dose Alarm	Pre-Alarm & Alarm



TECHNOLOGY OVERVIEW & VALIDATIONS

THE UV SYSTEMS OF ULTRAAQUA HAS UNDERGONE EXTENSIVE TESTING AND PASSED THE WORLD'S MOST RIGOROUS TESTS FOR VALIDATION AND APPROVAL BY RECOGNIZED LEADING CERTIFICATE PROVIDERS.

This means that reliable and thoroughly tested solutions are guaranteed.

ÖNORM M 5873-1

The SSV Drinking Water Series has been validated by the internationally recognized Austrian standard – **ÖNORM M 5873-1**. This allows the SSV series to offer ultimate security for drinking water disinfection.

AMS

The AMS (Analog Mixed Signal) verification ensures that the electronic components are compliant with the latest industry-standard, allowing smooth and quick signal transmission among the electrical components used in data tracking and storage.



The NIPH (Norwegian Institute of Public Health) type approval ensures that all UV disinfection units meets the requirements for UV dosage. The approval means that ULTRAAQUA is able to distribute selected UV systems in Norway and The Faroe Islands.



The **DVGW certification** assures that critical technical requirements are met regarding hygiene, safety, and general functionality. DVGW is an unbiased technical-scientific association based in Germany, specialized in gas and water industries.



The **ETV-EU verification** is a third-party validation of new innovative environmental technologies, ensuring product credibility for the buyer.



The Norwegian Veterinary Institute (NVI) is the national leading center of expertise in biosecurity for fish and land animals. The ULTRABARRIER™ series has been officially approved by the NVI for intake water disinfection in the Norwegian aquaculture industry.





COMPANY HISTORY

ULTRAAQUA IS AN INTERNATIONAL MANUFACTURER OF ADVANCED UV WATER DISINFECTION SYSTEMS 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 UV 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 UV 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.

The validity, experience, and trustworthiness are proven through our wide range of acquired certificates, patents, and trademarks.

