NON-CORROSIVE PP/PEHD SERIES

UV DISINFECTION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT

ULTRAQUA

UV DISINFECTION SYSTEMS

WE PROTECT YOUR MOST VALUABLE RESOURCE

NON-CORROSIVE PP/PEHD SERIES

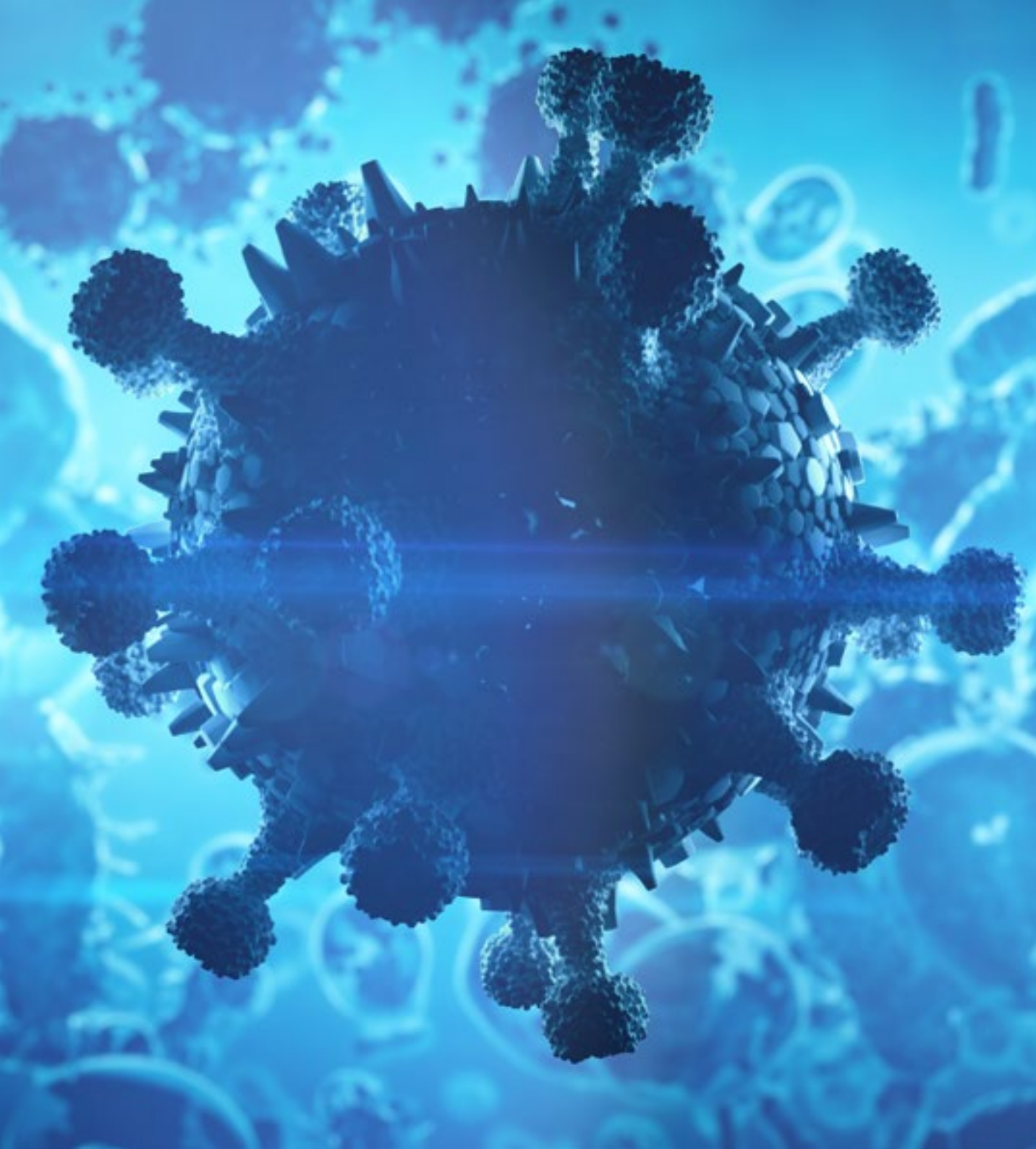
THE PP/PEHD SERIES IS DEVELOPED SPECIFICALLY FOR HARSH CORROSIVE ENVIRONMENTS.

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
- Easy maintenance and installation
- Complete control with ULTRATOUCH™ control cabinets
- Automated ULTRAWIPER™ quartz cleaning
- An extended 5 year guaranteed warranty

MARKET LEADING ENERGY EFFICIENCY



CORE BENEFITS OF UV

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

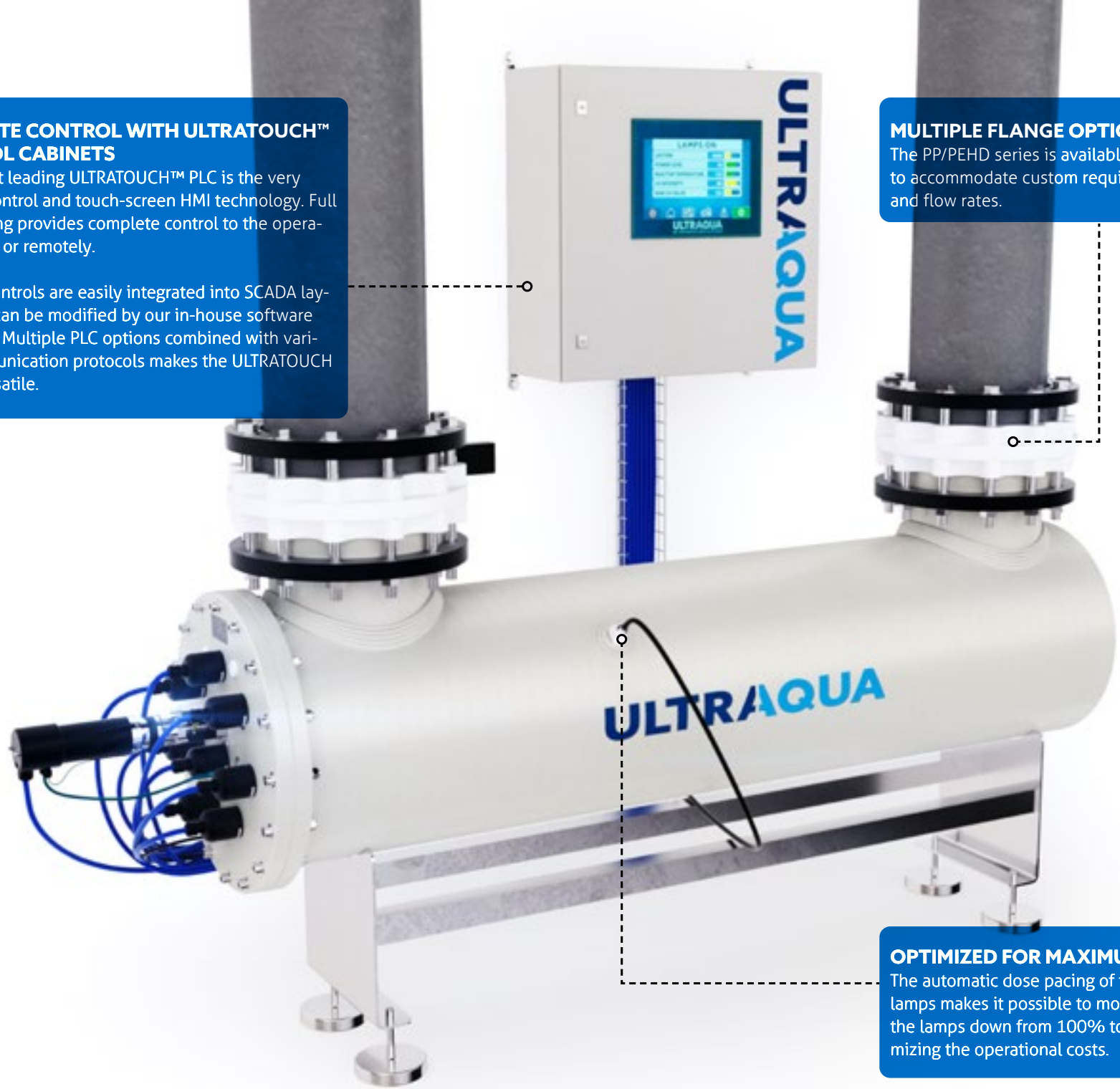
The demand for cost-efficient solutions to provide clean water are at an all-time high and will only increase in the future. UV disinfection solves this complex challenge, being able to meet the strictest requirements regarding bacteria and virus protection.

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 has made UV a viable OPEX and CAPEX solution for disinfection processes as well as in more advanced applications such as AOP processes.

Choosing UV as the disinfection method ensures optimal CAPEX and OPEX 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 ensures complete peace of mind, employing the best available solution for complete biosecurity.

ULTRAQUA
UV DISINFECTION SYSTEMS



COMPLETE CONTROL WITH ULTRATOUCH™ CONTROL CABINETS

The market leading ULTRATOUCH™ PLC is the very latest in control and touch-screen HMI technology. Full data logging provides complete control to the operator, on site or remotely.

The PLC controls are easily integrated into SCADA layouts, and can be modified by our in-house software engineers. Multiple PLC options combined with various communication protocols makes the ULTRATOUCH highly versatile.

MULTIPLE FLANGE OPTIONS

The PP/PEHD series is available in multiple flange sizes to accommodate custom requirements for installation and flow rates.

OPTIMIZED FOR MAXIMUM EFFICIENCY

The automatic dose pacing of the ULTRATHERM™ lamps makes it possible to modify the power output of the lamps down from 100% to 30%, significantly optimizing the operational costs.

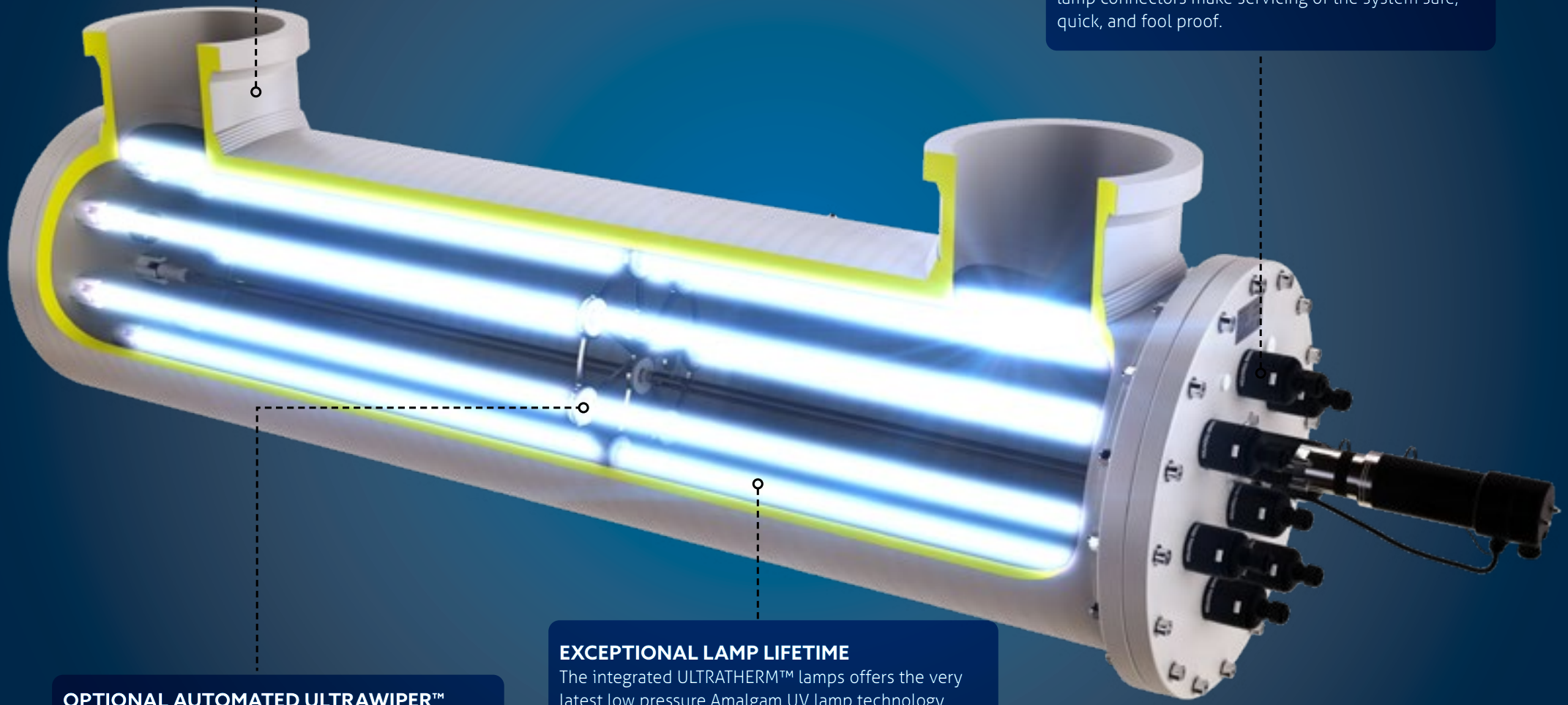
MAXIMUM PERFORMANCE IN CORROSIVE ENVIRONMENTS

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.



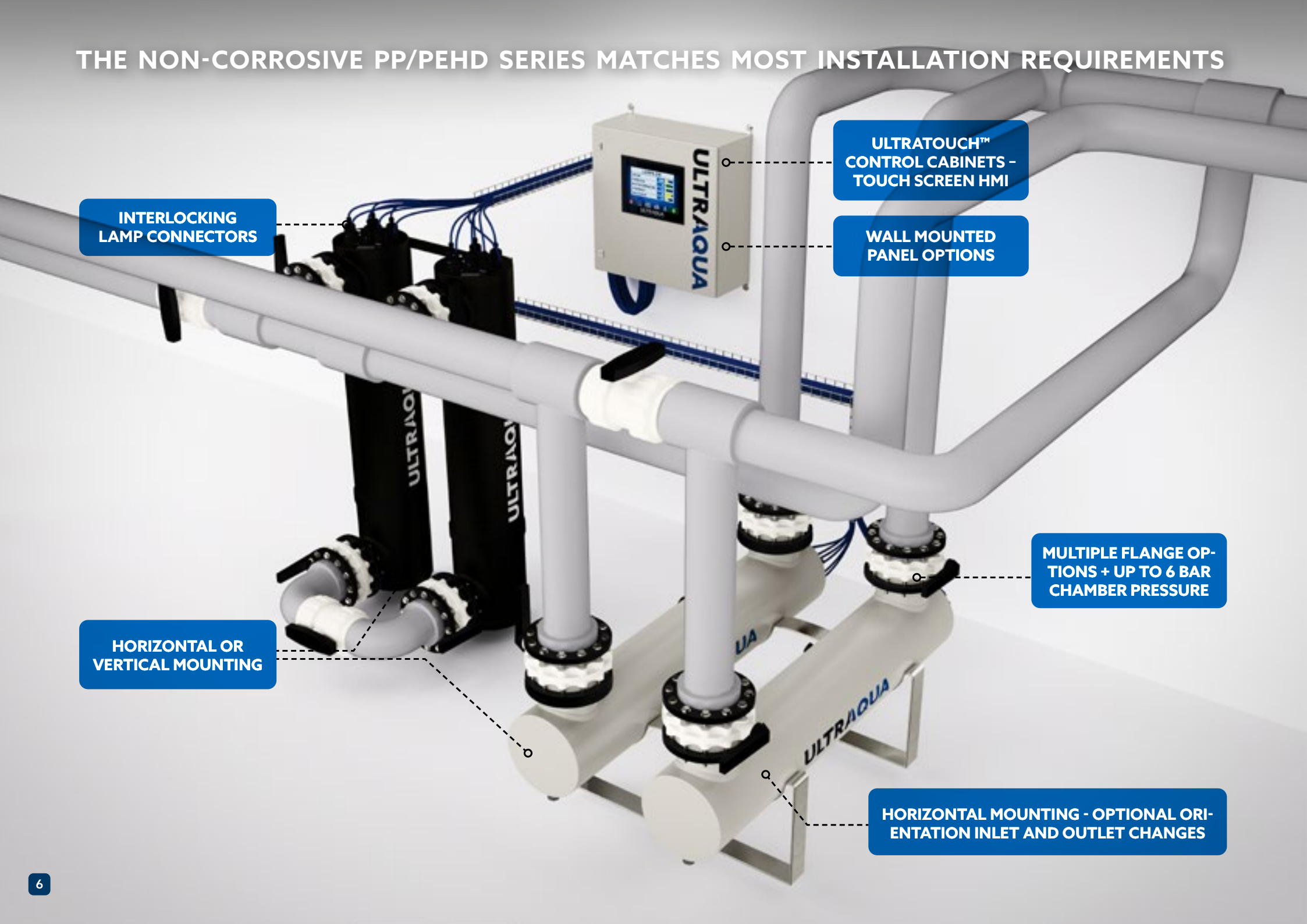
OPTIONAL AUTOMATED ULTRAWIPER™

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

EXCEPTIONAL LAMP LIFETIME

The integrated ULTRATHERM™ lamps offers 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.

THE NON-CORROSIVE PP/PEHD SERIES MATCHES MOST INSTALLATION 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 alter and adjust any standard UV system to accommodate the 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

- Custom UV systems for advanced applications
- Packaged plant equipment
  - 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

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 the extensive network of regional offices.

The technical support team in our head office provides 24-hour remote service upon agreement, ensuring complete protection to avoid potential emergencies.

At ULTRAAQUA, we wish to provide a complete product experience for our customers, from the very start of determining requirements to the ongoing operational maintenance. This means that our responsibility does not stop after the UV 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.

UV SYSTEM	MR1-75PP STD	MR2-75PP STD	MR3-75PP STD	MR4-75PP STD	MR1-75PP ADV	MR2-75PP ADV	MR3-75PP ADV
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	Not available				UV Intensity sensor non-corrosive PTFE		
Variable Power	Not available				50-100%		
UV CHAMBER							
Connection Size	1½" BSP	3" BSP	3" BSP	1½" 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-corrosive UV-stabilized Polypropylene (option PEHD)						
Internal & External Finish	Machined						
Lamp Access Single Ended	Yes						
Quartz Type	High purity fused quartz transmittance >95%						
Mounting	Free standing (option horizontal plastic stand)						
ULTRAWIPER™ System	Not available						
Temperature Probe	1x PT100						
Vent & Drain Ports		½"	½"	½"		½"	½"
Ingress Protection	IP65						
Installation	Horizontal/vertical						
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON						
CONTROL CABINET							
Cabinet Material	GFRP (option SS304/SS316)						
Cabinet Sizes	400x300x210mm	400x300x210mm	400x300x210mm	400x300x210mm	400x600x210mm	400x600x210mm	400x600x210mm
Cable Length	4 meters (max. 30 meters)						
Installation & Ambient	Wallmount 0-40 °C						
Ingress Protection	IP65						
Thermal Control	Passive dissipation (option Fan/AC/Heat exchanger)						
Control Logic					Microprocessor		
Interface/HMI	Status LED indicators & hour counter				4 line LCD with system state indication		
External Wiring					Remote ON/OFF, Safety ON/OFF, System Status, 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		
Event Log					Alarms		
UV Dose					On Display, UV Intensity		
UV Dose Alarm					UV Intensity Pre-alarm and Alarm		

Specifications are subject to change without notice. Version: 22.0

UV SYSTEM	MR4-75PP ADV
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 Access Single Ended	Yes
Quartz Type	High purity fused quartz transmittance >95%
Mounting	Free standing (option horizontal plastic stand)
ULTRAWIPER™ System	Not available
Temperature Probe	1x PT100
Vent & Drain Ports	½"
Ingress Protection	IP65
Installation	Horizontal/vertical
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON

CONTROL CABINET	
Cabinet Material	GFRP (option SS304/SS316)
Cabinet Sizes	400x600x210mm
Cable Length	4 meters (max. 30 meters)
Installation & Ambient	Wallmount 0-40 °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 and Alarm

Specifications are subject to change without notice. Version: 22.0

UV SYSTEM	MR1-350PP STD	MR1-350PP ADV	MR3-350PP	MR4-350PP	MR6-350PP	MR8-350PP	MR12-350PP
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	Not available	UV Intensity sensor non-corrosive PTFE (option ÖNORM M5873 certified Duplex)					
Variable Power	Not available	50-100%					
UV CHAMBER							
Connection Size	DN100	DN100	DN150	DN150	DN200	DN250	DN250
Connection Type	PN10						
Design Pressure	10 bar (option 16 bar)	10 bar (option 16 bar)	6 bar (option 10 bar)	6 bar (option 10 bar)	5 bar (option 10 bar)	2,5 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	Not available	Optional Automatic mechanical with PTFE/fiber rings (electrical)					
Temperature Probe	PT100						
Vent & Drain Ports	½"						1"
Ingress Protection	IP65						
Installation	Horizontal/vertical						
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON						
CONTROL CABINET							
Cabinet Material	Non-Corrosive GFRP (option SS304/SS316)						
Cabinet Sizes	400x600x210mm	400x600x210mm	800x600x300mm	800x600x300mm	1000x750x300mm	1000x750x300mm	1000x1250x320mm
Cable Length	4 meters (max. 30 meters)						
Installation & Ambient	Wallmount 0-40 °C	Wallmount 0-40 °C	Wallmount 0-35 °C	Wallmount 0-35 °C	Wallmount 0-35 °C	Wallmount 0-30 °C	Wallmount 0-30 °C
Ingress Protection	IP65						
Thermal Control	Passive 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	230VAC +/- 10% +N+PE 50/60Hz					3x400VAC +/- 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 and target UV Dose				
UV Dose Alarm		UV Intensity pre-alarm and alarm	Pre-alarm and Alarm				

Specifications are subject to change without notice. Version: 22.0

UV SYSTEM	MR16-350PP	MR18-350PP	MR20-350PP
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	Optional 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	Non-Corrosive GFRP (option SS304/SS316)		
Cabinet Sizes	1000x1250x320mm	1250x1250x420mm	1250x1250x420mm
Cable Length	4 meters (max. 30 meters)		
Installation & Ambient	Wallmount 0-25 °C	Wallmount 0-22 °C (higher optional)	Wallmount 0-22 °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 and target)
UV Dose Alarm	Pre-alarm and Alarm

Specifications are subject to change without notice. Version: 22.0

UV SYSTEM	MR1-220PP STD	MR1-220PP ADV	MR3-220PP	MR4-220PP	MR6-220PP	MR8-220PP
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	Not available	UV Intensity sensor non-corrosive PTFE (option ÖNORM M5873 certified Duplex)				
Variable Power	Not available	ULTRADOSE™ pacing 50-100%				

UV CHAMBER						
Connection Size	DN80	DN80	DN150	DN150	DN150	DN200
Connection Type	PN10					
Design Pressure	8 bar	8 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 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	Not available	Optional Automatic mechanical with PTFE/fiber rings (electrical)				
Temperature Probe	1x PT100					
Vent & Drain Ports	½"					
Ingress Protection	IP65					
Installation	Horizontal/vertical					
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON					

CONTROL CABINET						
Cabinet Material	GFRP (option SS304/SS316)					
Cabinet Sizes	400x300x210mm	400x600x210mm	800x600x300mm	800x600x300mm	800x600x300mm	1000x750x320mm
Cable Length	4 meters (max. 30 meters)					
Installation & Ambient	Wallmount 0-40 °C		Wallmount 0-35 °C			
Ingress Protection	IP65					
Thermal Control	Passive dissipation (option Fan/AC/Heat exchanger)					
Control Logic		Microprocessor	PLC			
Interface/HMI	Status LED indicators & hour counter	4 line LCD with system state indication	7" ULTRATOUCH™			
External Wiring	Remote ON/OFF, Safety ON/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 and target UV Dose	
UV Dose Alarm	UV Intensity pre-alarm and alarm	Pre-alarm and Alarm	

Specifications are subject to change without notice. Version: 22.0

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

DVGW

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.

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.

ETV

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

FHI

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.

ULTRAQUA
UV DISINFECTION SYSTEMS

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.

ULTRAQUA
UV DISINFECTION SYSTEMS