OPEN CHANNEL (PP) SERIES

UV DISINFECTION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT

ULTRAAQUA

UV DISINFECTION SYSTEMS

WE PROTECT YOUR MOST VALUABLE RESOURCE

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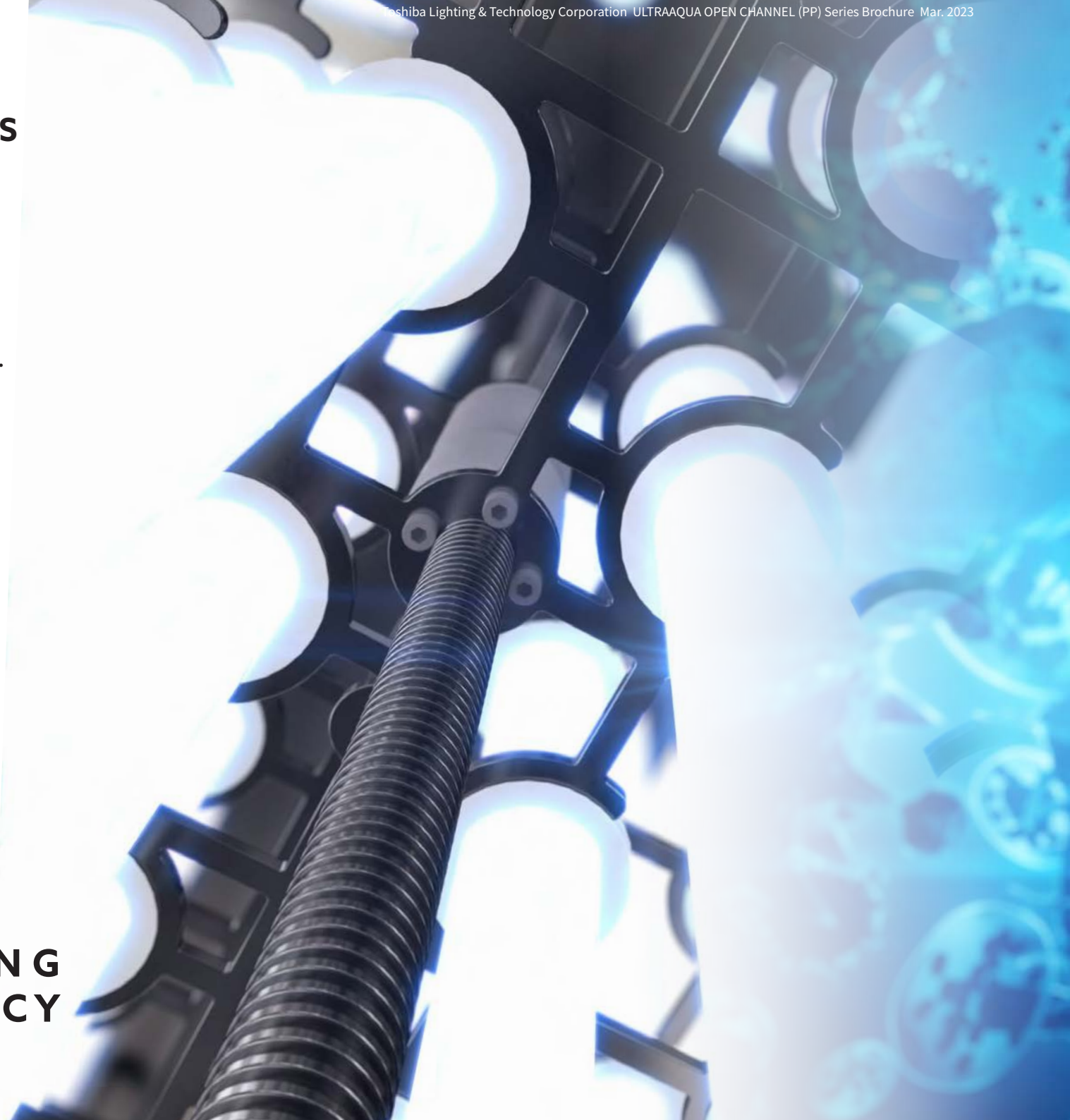
OPEN CHANNEL (PP) SERIES

THE OPEN CHANNEL UV DISINFECTION SYSTEMS OFFERS SAFE, CHEMICAL-FREE DISINFECTION FOR A WIDE RANGE OF APPLICATIONS, AVAILABLE IN BOTH STAINLESS STEEL (SS) AND POLYPROPYLENE (PP).
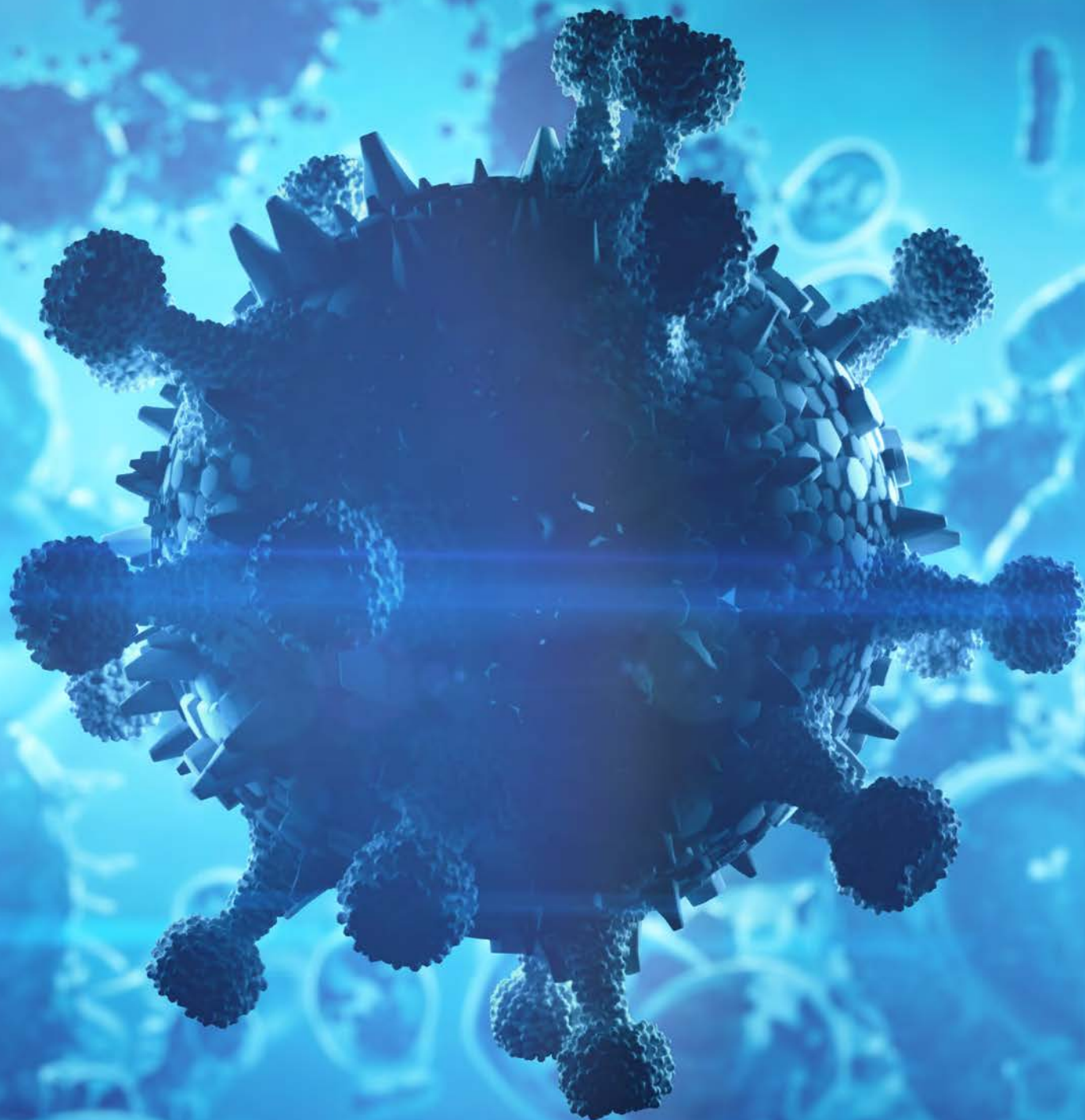
THE SYSTEMS CAN BE CUSTOMIZED TO FIT INTO VIRTUALLY ANY CHANNEL DIMENSION.

KEY HIGHLIGHTS

- ULTRATHERM™ lamp   Lifetime 16,000-hours

- Optimal design for high disinfection performance.

- Easy maintenance and installation

- Easily integrated in complex environments

- Complete control with ULTRATOUCH™ control cabinets

- Automated ULTRAWIPER™ quartz cleaning with tailored brush heads

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.

ULTRAAQUA
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.

OPTIMIZED FOR MAXIMUM EFFICIENCY

The CFD optimized crossline lamp arrangement ensures ultimate pathogen exposure with minimized energy requirements. The safe top compartment significantly reduces the maintenance requirements, as it can be done while the UV system is submerged.

AUTOMATIC DOSE PACING

The automatic dose pacing ensures optimized efficiency by reducing power consumption while ensuring a stable dose under operation. The ability to control the power increments ensures that issues related to overdosing and temperature issues are well mitigated.

CLEANING WITH TAILORED BRUSH HEADS
The automatic sleeve wiping mechanism keeps both the quartz sleeves and the UV sensor clean while preventing harsh fouling. Keeping the quartz sleeves clean at all times contributes to a consistent and stable disinfection process.

EXCELLENT INSTALLATION CONDITIONS
The innovative lamp bank design with its safe top compartment provides exceptional operational convenience, especially for large-scale projects with multiple lamp bank installations.

This allows for retrofitting in various channel depths and widths, as well as being available for wall mount installation.

CUSTOMIZABLE FOR VIRTUALLY ANY REQUIREMENTS
The Open Channel series allow a high level of construction versatility to treat flows of almost any size.

LAMP LIFETIME   16,000hours
The integrated ULTRATHERM™ lamps offer the very latest low pressure Amalgam UV lamp technology, being optimized for energy efficiency and robustness.

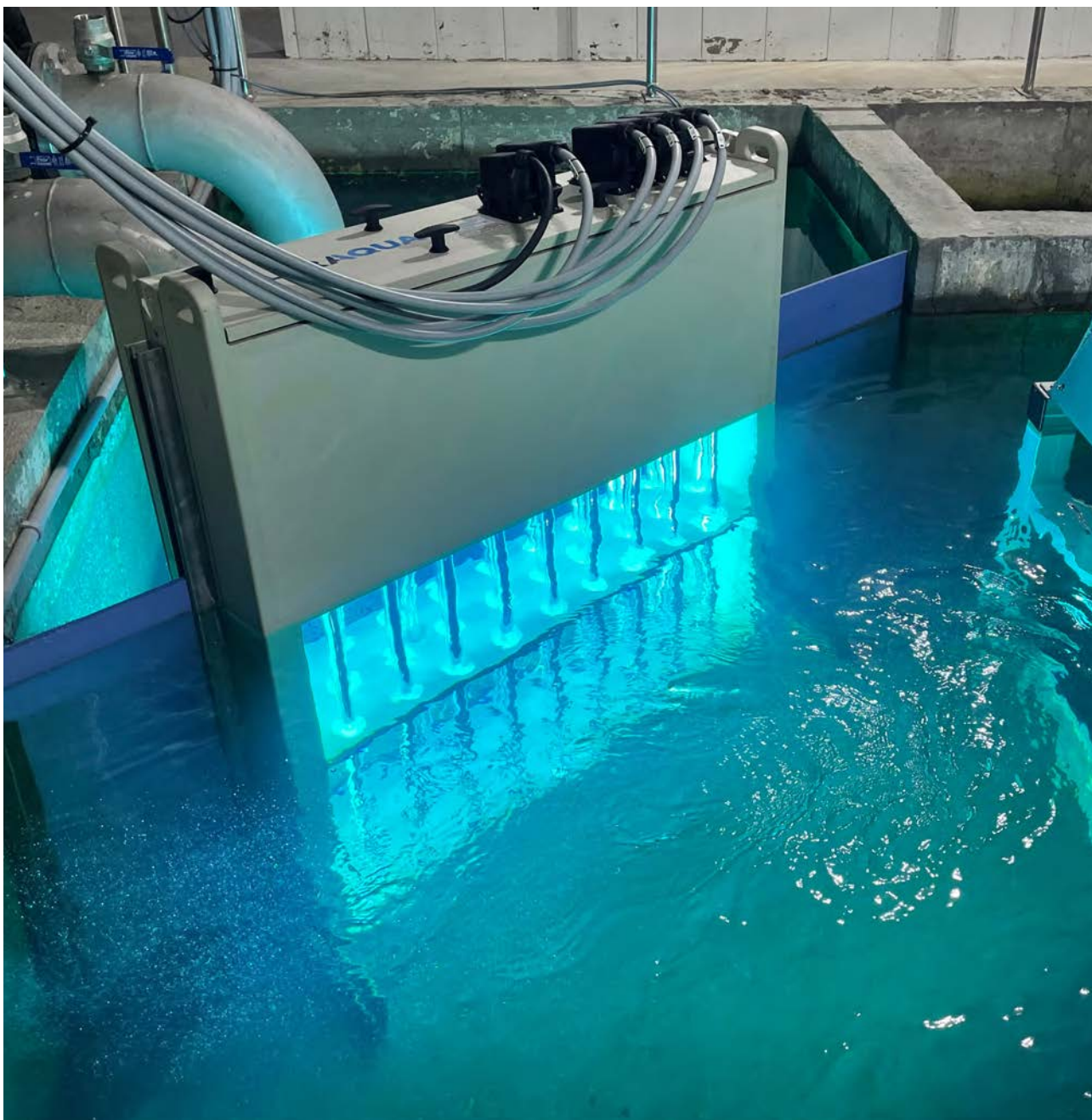# SUITABLE FOR COMPLEX INSTALLATION CONDITIONS

PP MATERIAL FOR CORROSIVE ENVIRONMENTS

ULTRATOUCH™ CONTROL CABINETS

CONVENIENT TOP COMPARTMENT FOR EASY MAINTENANCE

FISH FARMS

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
- 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.

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 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	MR4-220PP C	MR6-220PP C	MR8-220PP C	MR12-220PP C
Product ID	23110	23112	23114	23116
Approvals	CE (Option UL/ cUL)			

UV LAMPS & MONITORING				
Lamp Number	4	6	8	12
ULTRATHERM™ LPHO Lamp	220W			
Lamp Lifetime	16 000 Hours			
UV Monitoring	UV Intensity Sensor Non-Corrosive PTFE			
Variable Power	50-100%			

UV MODULE				
Channel Width	550mm (± 8mm) [21,65 in]	790mm (± 8mm) [31,10 in]	1030mm (± 8mm) [40,55 in]	850mm (± 8mm) [33,46 in]
Channel Depth	165mm (± 5mm) [6,50 in]	165mm (± 5mm) [6,50 in]	165mm (± 5mm) [6,50 in]	205mm (± 5mm) [8,07 in]
Min/Max Water Level	1230mm/1600mm [48,43 in/ 62,99 in]			
Chamber Material	Non-Corrosive UV-Stabilized Polypropylene			
Internal & External Finish	Machined			
Lamp/Wiper Access Single Ended	Yes			
Quartz Type	High Purity Fused Quartz Transmittance >95%			
Mounting	Free Standing in PP Mounting Rails			
ULTRAWIPER™ System	(Optional Automatic Mechanical with PTFE/Fiber Rings (Electrical))			
Temperature Probe	1x PT100			
Flood Protection Switch	Yes			
Ingress Protection	IP55			
Installation	Vertical/Inclined			
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON			

CONTROL CABINET				
Cabinet Material	GFRP (Option SS304/SS316)			
Cabinet Sizes (H x W x D)	800x600x300mm	1000x750x320mm	1000x1000x320mm	1250x1250x420mm
Cable Length	7 Meters (Max. 20 Meters)			
Installation & Ambient	Wallmount 0-34 °C	Wallmount 0-36 °C	Wallmount 0-34 °C	Wallmount 0-36°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	1,0 kW	1,4 kW	1,9 kW	2,9 kW
Power Supply	230VAC +/- 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	UV Dose, UV Intensity, Flow			
UV Dose	On HMI, Actual UV Dose & Target UV Dose			
UV Dose Alarm	Pre-Alarm & Alarm			

Specifications are subject to change without notice. Version: 22.2

UV SYSTEM	MR4-350PP C	MR6-350PP C	MR8-350PP C	MR12-350PP C	MR16-350PP C	MR20-350PP C	MR24-350PP C
Product ID	23140	23142	23144	23146	23148	23150	23152
Approvals				CE (Option UL/ cUL)			

UV LAMPS & MONITORING							
Lamp Number	4	6	8	12	16	20	24
ULTRATHERM™ LPHO Lamp				350W			
Lamp Lifetime				16 000 Hours			
UV Monitoring				UV Intensity Sensor PTFE 360 Degrees			
Variable Power				50-100%			

UV MODULE							
Channel Width	550mm (± 8mm) [21,65 in]	790mm (± 8mm) [31,10 in]	1030mm (± 8mm) [40,55 in]	850mm (± 8mm) [33,46 in]	1090mm (± 8mm) [42,91 in]	1330mm (± 8mm) [52,36 in]	1090mm (± 8mm) [42,91 in]
Channel Depth	165mm (± 5mm) [6,50 in]	165mm (± 5mm) [6,50 in]	165mm (± 5mm) [6,50 in]	205mm (± 5mm) [8,07 in]	205mm (± 5mm) [8,07 in]	205mm (± 5mm) [8,07 in]	309mm (± 5mm) [12,17 in]
Min/Max Water Level				1730mm/2100mm (68,11 in/ 82,68 in)			
Chamber Material				Non-Corrosive UV-Stabilized Polypropylene			
Internal & External Finish				Machined			
Lamp/Wiper Access Single Ended				Yes			
Quartz Type				High Purity Fused Quartz Transmittance >95%			
Mounting				Free Standing in PP Mounting Rails			
ULTRAWIPER™ System				(Option Automatic Mechanical With PTFE/Fiber Rings (Electrical))			
Temperature Probe				1x PT100			
Flood Protection Switch				Yes			
Ingress Protection				IP55			
Installation				Vertical/Inclined			
Minor Wetted Parts				FDA approved PTFE, PVDF, VITON			

CONTROL CABINET							
Cabinet Material				Non-Corrosive GFRP			
Cabinet Sizes (H x W x D)	1000x750x320mm	1000x1000x320mm	1000x1000x320mm	1000x1250x320mm	1250x1250x420mm	1250x1250x420mm	1250x1250x420mm
Cable Length				7 Meters (Max. 30 Meters)			
Installation & Ambient	Wallmount 0-38 °C	Wallmount 0-35 °C	Wallmount 0-30 °C	Wallmount 0-26 °C	Wallmount 0-26 °C	Wallmount 0-20 °C	Wallmount 0-20 °C (Higher Optional)
Ingress Protection				IP65			
Thermal Control			Passive Dissipation (Option Fan/AC/Heat exchanger)				Cooling with Heat Exchanger
Control Logic				PLC			
Interface/HMI				7" ULTRATOUCH™			
External Wiring				Remote ON/OFF, Safety ON/OFF, System Status, Alarm			
Power Consumption	1,5 kW	2,3 kW	3,0 kW	4,5 kW	6,0 kW	7,5 kW	9,0 kW
Power Supply	230VAC +/- 10% +N+PE 50/60Hz			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				UV Dose, UV Intensity, Flow			
UV Dose				On HMI, Actual UV Dose & Target UV Dose			
UV Dose Alarm				Pre-Alarm & Alarm			

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UV SYSTEM	MR28-350PP C	MR32-350PP C	MR36-350PP C	MR40-350PP C	MR44-350PP C	MR48-350PP C
Product ID	23154	23156	23158	23160	23162	23164
Approvals	CE (Option UL/ cUL)					

UV LAMPS & MONITORING						
Lamp Number	28	32	36	40	44	48
ULTRATHERM™ LPHO Lamp	350W					
Lamp Lifetime	16 000 Hours					
UV Monitoring	UV Intensity Sensor PTFE 360 Degrees					
Variable Power	50-100%					

UV MODULE						
Channel Width	1270mm (± 8mm) [50,00 in]	1390mm (± 8mm) [42,91 in]	1210mm (± 8mm) [47,64 in]	1330mm (± 8mm) [52,36 in]	1210mm (± 8mm) [47,64 in]	1270mm (± 8mm) [50,00 in]
Channel Depth	309mm (± 5mm) [12,17 in]	309mm (± 5mm) [12,17 in]	440mm (± 5mm) [17,32 in]	440mm (± 5mm) [17,32 in]	540mm (± 5mm) [21,26 in]	540mm (± 5mm) [21,26 in]
Min/Max Water Level	1730mm/2100mm (68,11 in/ 82,68 in)					
Chamber Material	Non-Corrosive UV-Stabilized Polypropylene					
Internal & External Finish	Machined					
Lamp/Wiper Access Single Ended	Yes					
Quartz Type	High Purity Fused Quartz Transmittance >95%					
Mounting	Free Standing in PP Mounting Rails					
ULTRAWIPER™ System	(Option Automatic Mechanical With PTFE/Fiber Rings (Electrical))					
Temperature Probe	1x PT100					
Flood Protection Switch	Yes					
Ingress Protection	IP55					
Installation	Vertical/Inclined					
Minor Wetted Parts	FDA approved PTFE, PVDF, VITON					

CONTROL CABINET						
Cabinet Material	Non-Corrosive GFRP		Powder Painted Steel (Option 316L)			
Cabinet Sizes (H x W x D)	1250x1250x420mm		2000x1000x500mm			
Cable Length	7 Meters (Max. 30 Meters)					
Installation & Ambient	Wallmount 0-20 °C (Higher Optional)		Floor Standing 0-40 °C Non-Condensing			
Ingress Protection	IP65		IP54 (Option IP65/NEMA4X)			
Thermal Control	Cooling with Heat Exchanger		Fan with Filter (Option AC / Heat Exchanger)			
Control Logic	PLC					
Interface/HMI	7" ULTRATOUCH™					
External Wiring	Remote ON/OFF, Safety ON/OFF, System Status, Alarm					
Power Consumption	10,5 kW	12,0 kW	13,5 kW	15,0 kW	16,5 kW	18,0 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	UV Dose, UV Intensity, Flow					
UV Dose	On HMI, Actual UV Dose & Target UV Dose					
UV Dose Alarm	Pre-Alarm & Alarm					

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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 has 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.

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The information of this catalog is current as of March 2023.

TECHNOLOGY OVERVIEW & VALIDATIONS

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.

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.

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