

# ULTRABARRIER™ SERIES

UV DISINFECTION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT



**ULTRAAQUA**  
UV DISINFECTION SYSTEMS

WE PROTECT YOUR MOST VALUABLE RESOURCE

Distributed by **Toshiba Lighting & Technology Corporation**

## ULTRABARRIER™ SERIES

THE ULTRABARRIER SERIES IS DEVELOPED SPECIFICALLY FOR EXCELLENT INTAKE WATER UV DISINFECTION IN THE AQUACULTURE INDUSTRY.

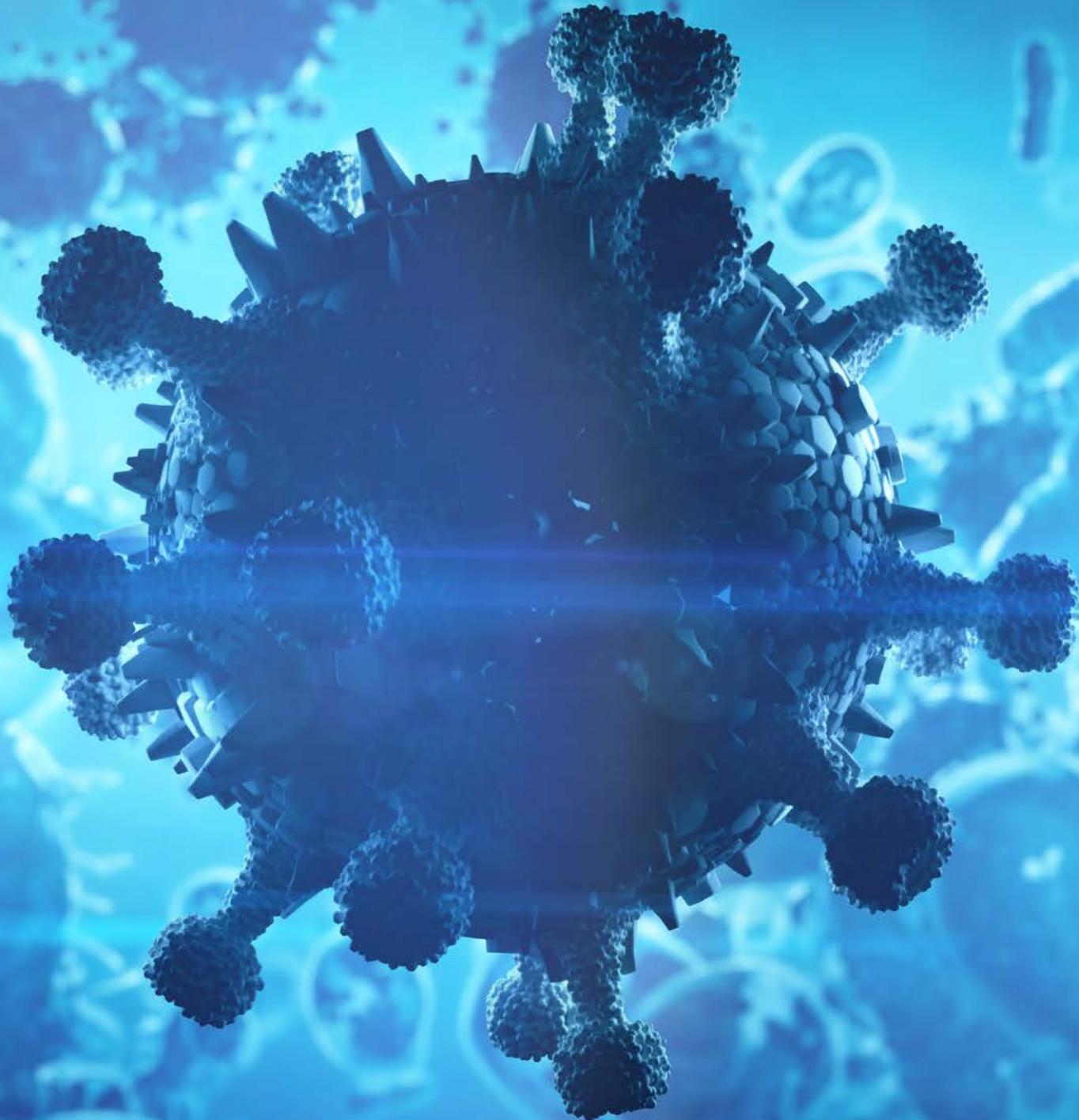
BEING AVAILABLE IN BOTH STAINLESS STEEL (SS) AND POLYPROPYLENE (PP), THE ULTRABARRIER ENSURES DISINFECTION EXCELLENCE ACROSS SEVERAL APPLICATIONS, TO AVOID ANY HARMFUL MICROORGANISMS ENTERING THE PRODUCTION.

### KEY HIGHLIGHTS

- ⚡ Approved by the Norwegian Veterinary Institute (NVI)
- ⚡ Optimal design for high disinfection performance.
- ⚡ Easy maintenance and installation
- ⚡ ULTRATHERM™ lamp    Lifetime 16,000-hours
- ⚡ 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

**OPTIMIZED FOR MAXIMUM EFFICIENCY**

The CFD optimized lamp positioning makes the ULTRABARRIER able to offer maximum hydraulic efficiency with minimum head loss, eliminating any chance of 'dark areas' with untreated microorganisms.

**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.

**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.

**LAMP LIFETIME 16,000hours**

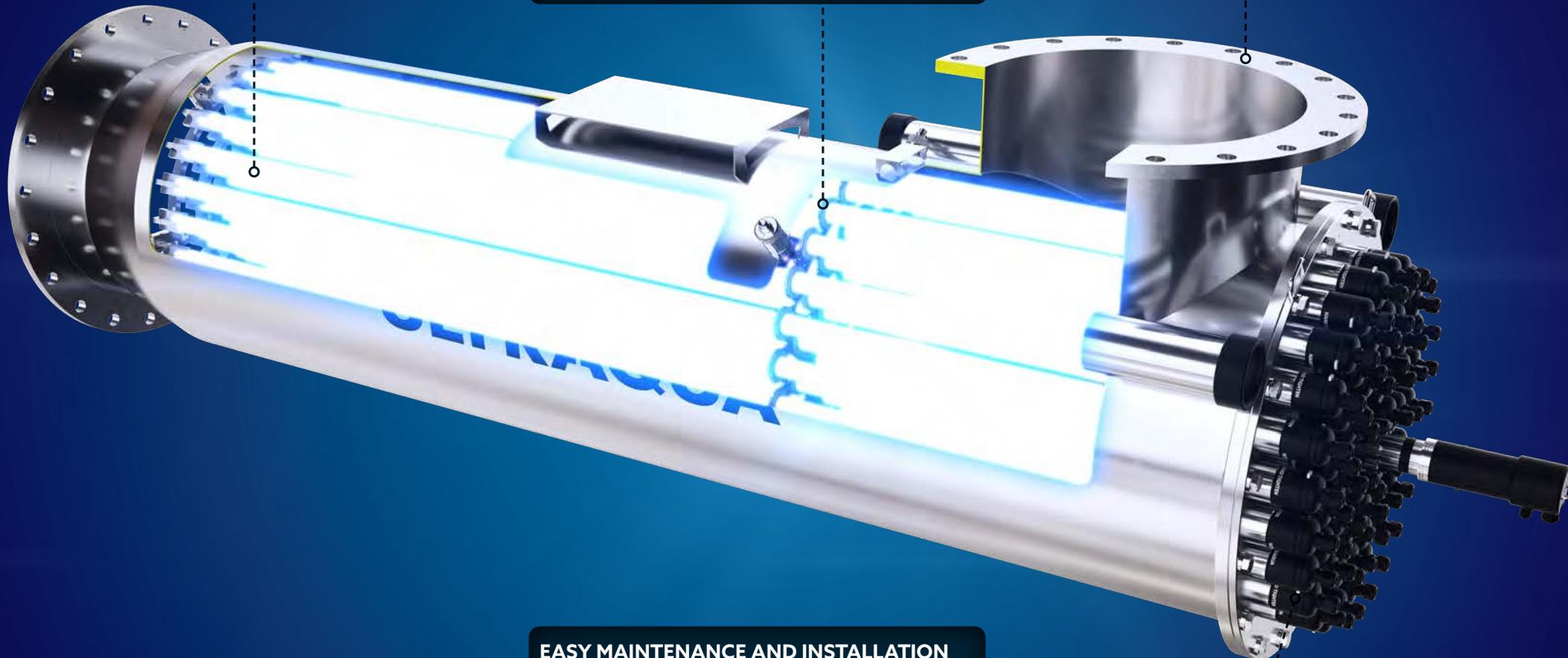
The integrated ULTRATHERM™ lamps offer the very latest low pressure Amalgam UV lamp technology, being optimized for energy efficiency and robustness.

**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.

**MULTIPLE FLANGE OPTIONS**

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

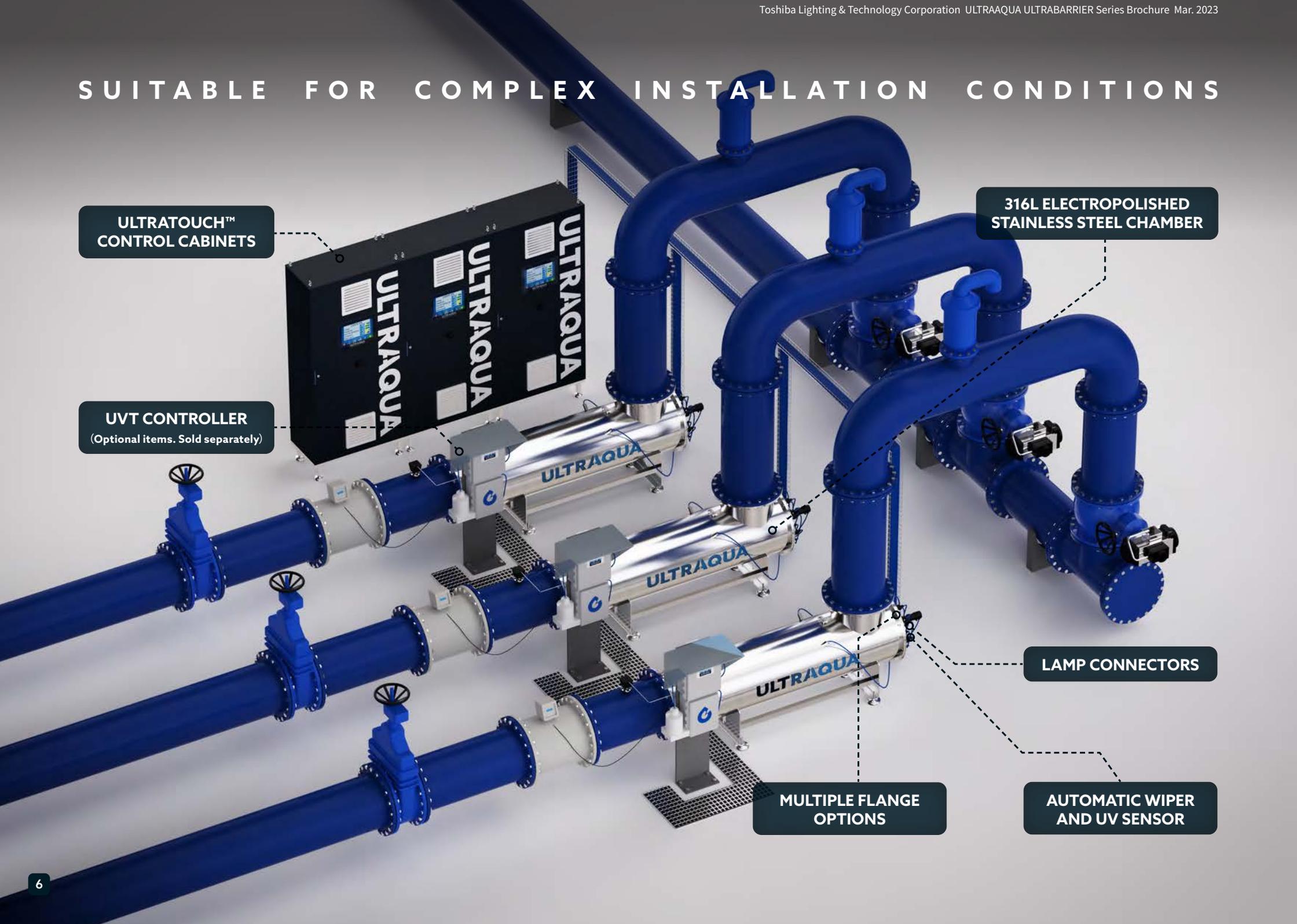


**EASY MAINTENANCE AND INSTALLATION**

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.

# SUITABLE FOR COMPLEX INSTALLATION CONDITIONS



**ULTRATOUCH™  
CONTROL CABINETS**

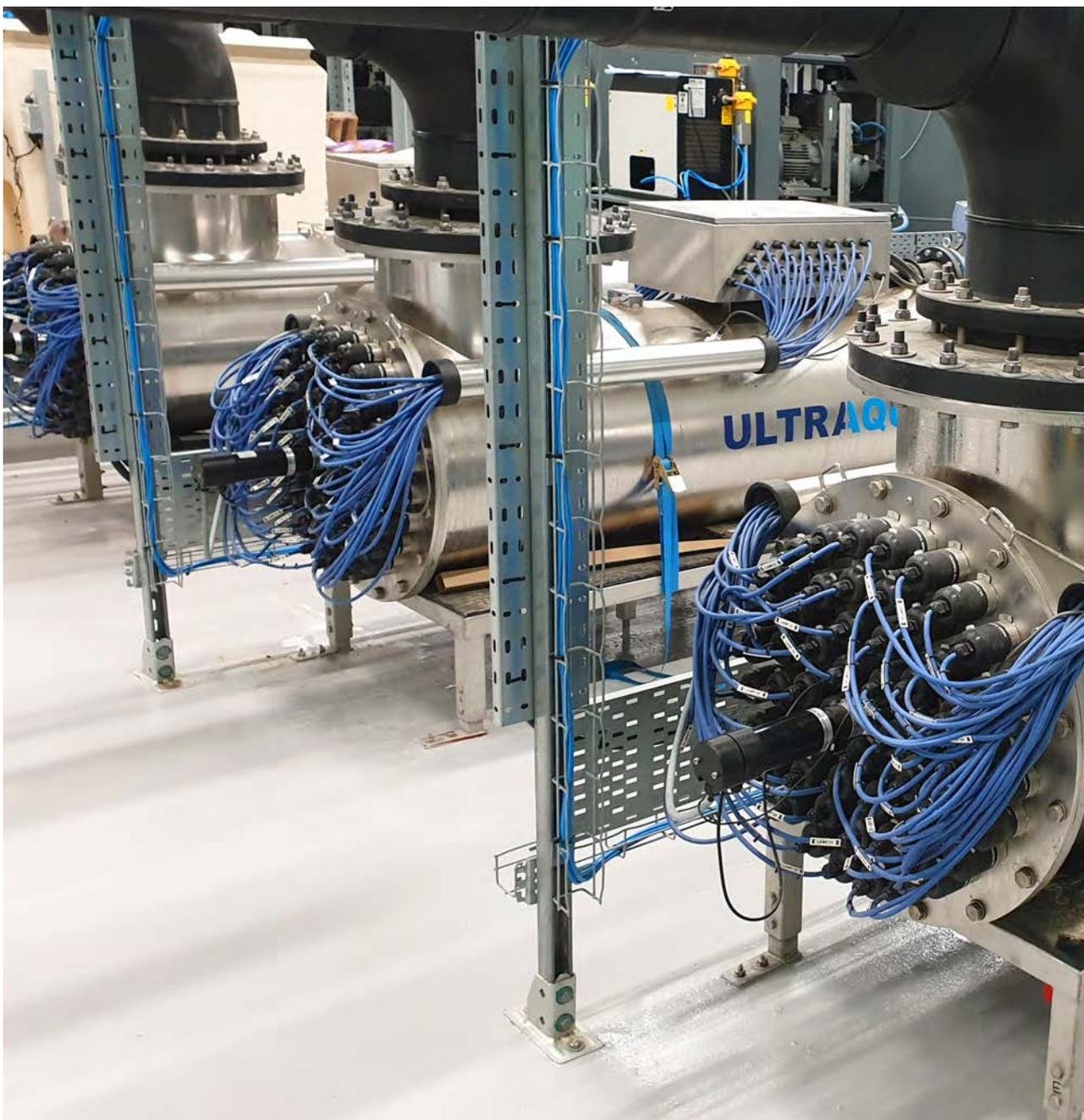
**UVT CONTROLLER**  
(Optional items. Sold separately)

**316L ELECTROPOLISHED  
STAINLESS STEEL CHAMBER**

**LAMP CONNECTORS**

**MULTIPLE FLANGE  
OPTIONS**

**AUTOMATIC WIPER  
AND UV SENSOR**



## 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	MR1-350PP ULTRABARRIER	MR4-350PP ULTRABARRIER	MR6-350PP ULTRABARRIER	MR8-350PP ULTRABARRIER	MR12-350PP ULTRABARRIER	MR18-350PP ULTRABARRIER	MR28-350PP ULTRABARRIER
Product ID	22151	22154	22156	22158	22160	22164	22168
Approvals	Norwegian Veterinary Institute NVI, CE (Option UL/ cUL)						

UV LAMPS & MONITORING							
Lamp Number	1	4	6	8	12	18	28
ULTRATHERM™ LPHO Lamp	350W						
Lamp Lifetime	16 000 Hours						
UV Monitoring	2x UV Intensity Sensor ÖNORM M5873 Certified Super Duplex						
Variable Power	ULTRADOSE™ pacing 50-100%						

UV CHAMBER							
Connection Size	DN100	DN100	DN150	DN150	DN200	DN300	DN400
Connection Type	PN10						
Design Pressure	8 Bar	6 Bar (Higher Optional)	5 Bar (Higher Optional)	3 Bar (Higher Optional)	2 Bar (Higher Optional)	2 Bar (Higher Optional)	2 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 SS316 Stand)						
ULTRAWIPER™ System	Automatic Mechanical with PTFE/Fiber Rings (Electrical)						
Temperature Probe	1x PT100						
Vent & Drain Ports	1" Drain Port						
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 )	800x600x300mm	800x600x300mm	1000x750x320mm	1000x750x320mm	1000x1250x320mm	1250x1250x420mm	1000x1250x320mm
Cable Length	4 Meters (Max. 20 Meters)						
Installation & Ambient	Wallmount 0-35 °C	Wallmount 0-35 °C	Wallmount 0-35 °C	Wallmount 0-30 °C	Wallmount 0-28 °C	Wallmount 0-26 °C	Wallmount 0-40 °C Non-Condensing
Thermal Control	Passive Dissipation (Option Fan / AC / Heat Exchanger)						Fan with filter (Option AC / Heat exchanger)
Control Logic	PLC Siemens (Option Allen Bradley)						
Interface/HMI	7" ULTRATOUCH™						
SCADA Communication	MODBUS TCP / IP / PROFINET						
Analogue 4-20mA I/O	Flow Input/UV Dose Output (Option UVT Input)						
Ingress Protection	IP65						
Event Log	UV Dose, UV Intensity, Flow						
Power Consumption	0,4 kW	1,5 kW	2,3 kW	3,0 kW	4,5 kW	6,8 kW	10,5 kW
Power Supply	230VAC +/- 10% +N+PE 50/60Hz			3x400VAC +/- 10% +N+PE 50/60Hz			

Specifications are subject to change without notice. Version: 22.2

UV SYSTEM	MR1-350SS ULTRABARRIER	MR4-350SS ULTRABARRIER	MR6-350SS ULTRABARRIER	MR8-350SS ULTRABARRIER	MR12-350SS ULTRABARRIER	MR18-350SS ULTRABARRIER	MR28-350SS ULTRABARRIER
Product ID	21150	21154	21156	21158	21160	21164	21168
Approvals	Norwegian Veterinary Institute NVI, CE (Option UL/ cUL)						

UV LAMPS & MONITORING							
Lamp Number	1	4	6	8	12	18	28
ULTRATHERM™ LPHO Lamp	350W						
Lamp Lifetime	16 000 Hours						
UV Monitoring	2x UV Intensity Sensor ÖNORM M5873 Certified Super Duplex						
Variable Power	ULTRADOSE™ pacing 50-100%						

UV CHAMBER							
Connection Size	DN100	DN100	DN150	DN150	DN200	DN300	DN400
Connection Type	EN-1092 Type 01A PN10 (Option PN16)						
Design Pressure	10 Bar (Option 16 Bar)						
Chamber Material	SS316L / 1.4404 (Option Super Duplex)						
Internal & External Finish	Electropolished Inside/Out						
Lamp/Wiper Access Single Ended	Yes						
Quartz Type	High Purity Fused Quartz Transmittance >95%						
Mounting	Free Standing (Option Horizontal SS316 Stand)						
ULTRAWIPER™ System	Automatic Mechanical with PTFE/Fiber Rings (Electrical)						
Temperature Probe	1x PT100						
Vent & Drain Ports	1" Drain Port						
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 )	800x600x300mm	800x600x300mm	1000x750x320mm	1000x750x320mm	1000x1250x320mm	1250x1250x420mm	1000x1250x320mm
Cable Length	4 Meters (Max. 20 Meters)						
Installation & Ambient	Wallmount 0-35 °C	Wallmount 0-35 °C	Wallmount 0-35 °C	Wallmount 0-30 °C	Wallmount 0-30 °C	Wallmount 0-28 °C	Wallmount 0-40 °C Non-Condensing
Thermal Control	Passive Dissipation (Option Fan / AC / Heat Exchanger)						Fan with filter (Option AC / Heat exchanger)
Control Logic	PLC Siemens (Option Allen Bradley)						
Interface/HMI	7" ULTRATOUCH™						
SCADA Communication	MODBUS TCP / IP / PROFINET						
Analogue 4-20mA I/O	Flow Input/UV Dose Output (Option UVT Input)						
Ingress Protection	IP65						
Event Log	UV Dose, UV Intensity, Flow						
Power Consumption	0,4 kW	1,5 kW	2,3 kW	3,0 kW	4,5 kW	6,8 kW	10,5 kW
Power Supply	230VAC +/- 10% +N+PE 50/60Hz			3x400VAC +/- 10% +N+PE 50/60Hz			

UV SYSTEM	MR44-350SS ULTRABARRIER	MR56-350SS ULTRABARRIER
Product ID	21172	21176
Approvals	Norwegian Veterinary Institute NVI, CE (Option UL/ cUL)	

UV LAMPS & MONITORING		
Lamp Number	44	56
ULTRATHERM™ LPHO Lamp	350W	
Lamp Lifetime	16 000 Hours	
UV Monitoring	2x UV Intensity Sensor ÖNORM M5873 Certified Super Duplex	
Variable Power	ULTRADOSE™ pacing 50-100%	

UV CHAMBER	
Connection Size	DN500
Connection Type	EN-1092 Type 01A PN10 (Option PN16)
Design Pressure	6 Bar (Option 10 Bar)
Chamber Material	SS316L / 1.4404 (Option Super Duplex)
Internal & External Finish	Electropolished Inside/Out
Lamp/Wiper Access Single Ended	Yes
Quartz Type	High Purity Fused Quartz Transmittance >95%
Mounting	Free Standing (Option Horizontal SS316 Stand)
ULTRAWIPER™ System	Automatic Mechanical with PTFE/Fiber Rings (Electrical)
Temperature Probe	1x PT100
Vent & Drain Ports	1" Drain Port
Ingress Protection	IP65
Installation	Horizontal / Vertical
Minor Wetted Parts	FDA Approved PTFE, PVDF, VITON

CONTROL CABINET	
Cabinet Material	Powder Painted Steel, (Option SS304/ 316L)
Cabinet Sizes ( H x W x D )	2200x1000x500mm
Cable Length	4 Meters (Max. 20 Meters)
Installation & Ambient	Floor Standing 0-40 °C Non-Condensing
Thermal Control	Fan with Filter (Option AC / Heat Exchanger)
Control Logic	PLC Siemens (Option Allen Bradley)
Interface/HMI	7" ULTRATOUCH™
SCADA Communication	MODBUS TCP / IP / PROFINET
Analogue 4-20mA I/O	Flow Input/UV Dose Output (Option UVT Input)
Ingress Protection	IP54 (Option IP65/NEMA4X)
Event Log	UV Dose, UV Intensity, Flow
Power Consumption	16,5 kW   21,0 kW
Power Supply	3x400VAC +/- 10% +N+PE 50/60Hz



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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.

- It may not be disinfected depends on water quality.
- The performance, values, etc. described in this brochure are typical values and may vary depending on operating conditions.
- The appearance and specifications are subject to change for improvement.
- Company names and product names mentioned herein may be trademarks or registered trademarks of their respective companies.
- Product colors may be different slightly from the actual product due to printing conditions.
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## TECHNOLOGY OVERVIEW & VALIDATIONS



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