ULTRAAQUA PRODUCT LINE

UV DISINFECTION # EFFICIENT AND CHEMICAL-FREE WATER TREATMENT



UV SYSTEM SELECTION

CLOSED VESSEL LOW-PRESSURE UV SYSTEMS

TOC VUV SYSTEM SERIES

CLOSED VESSEL MEDIUM-PRESSURE UV SYSTEMS



OPEN CHANNEL UV 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.



TECHNOLOGY OVERVIEW & VALIDATIONS

THE UV SYSTEMS FROM 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.

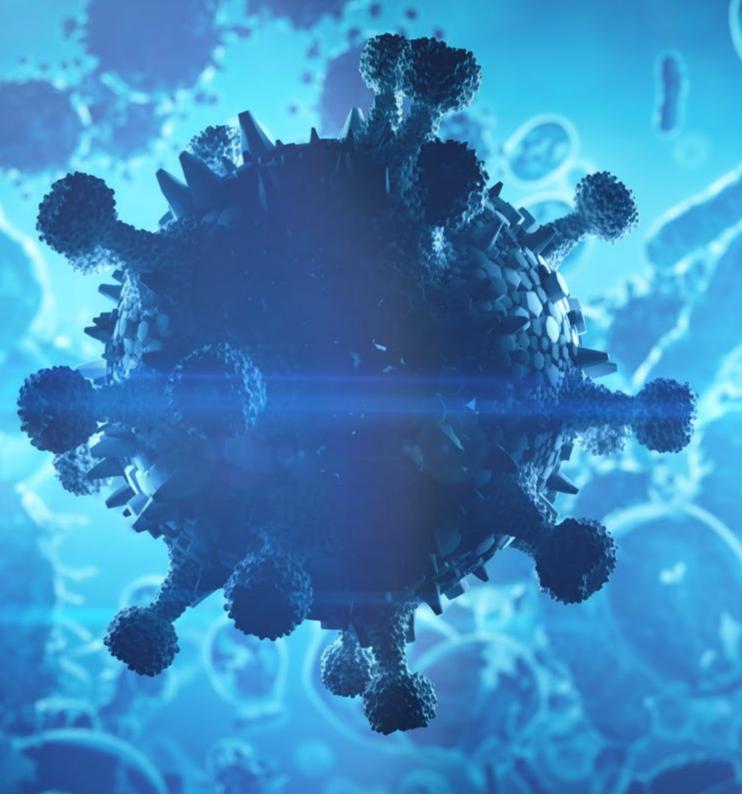


The **ETV-EU verification** is a third-party validation of new innovative environmental technologies, ensuring product credibility for the buyer.



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.





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.



MONORAY™ SERIES

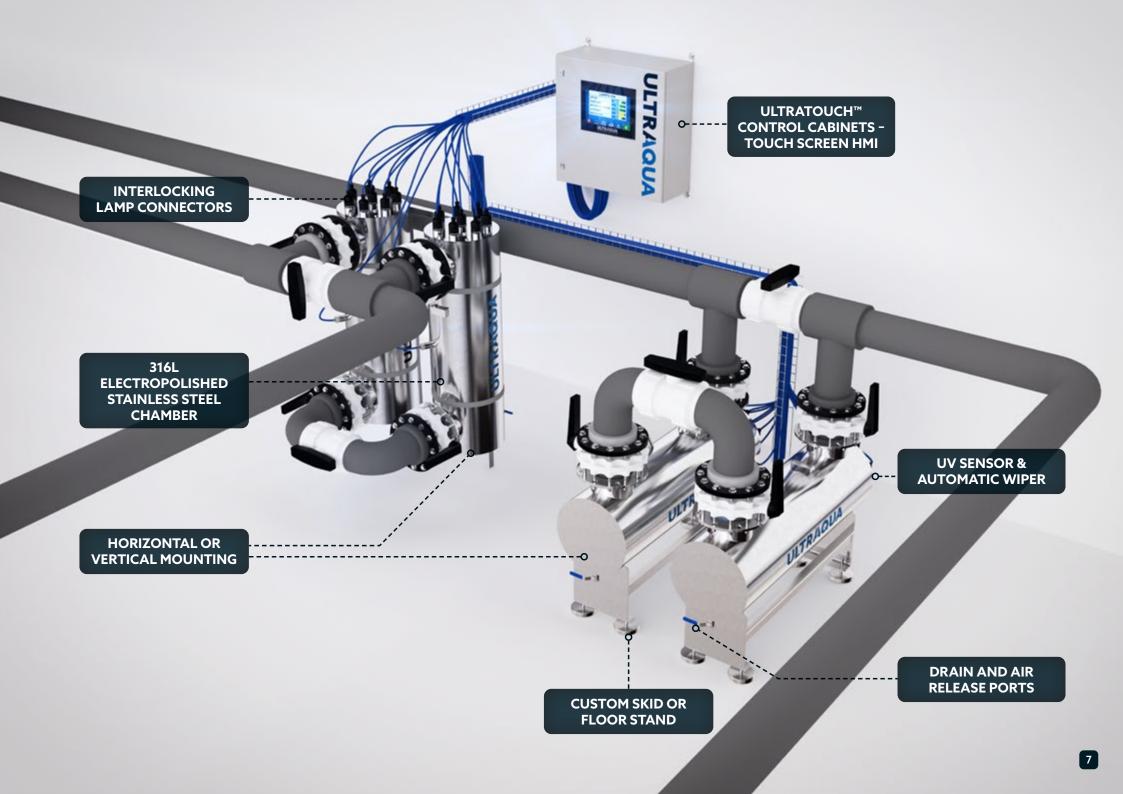
THE MONORAY SERIES OFFERS RELIABLE AND EFFICIENT UV DISINFECTION FOR A WIDE RANGE OF INDUSTRIAL AND MUNICIPAL WATER APPLICATIONS.

THE MONORAY IS AVAILABLE IN MULTIPLE CONFIGURATIONS AND CAN BE FITTED FOR ALMOST ANY FLOWRATE FOR ALMOST ANY APPLICATION REQUIRING CHEMICAL FREE UV DISINFECTION.

KEY HIGHLIGHTS

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





NON-CORROSIVE PP/PEHD SERIES

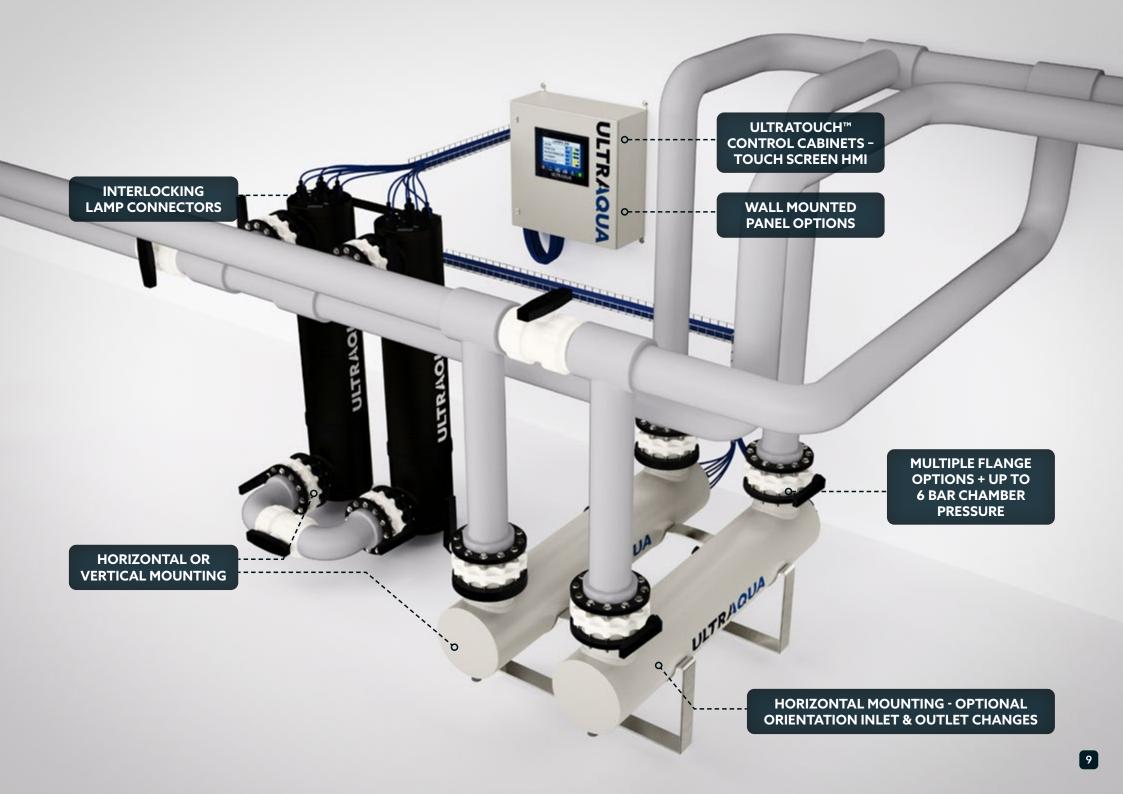
THE PP/PEHD SERIES IS DEVELOPED SPECIFICALLY FOR HARSH CORROSIVE ENVIRONMENTS.

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
- Complete control with ULTRATOUCH™ control cabinets
- Automated ULTRAWIPER™ quartz cleaning with tailored brush heads
- Extended 5 years warranty available subject to terms & conditions





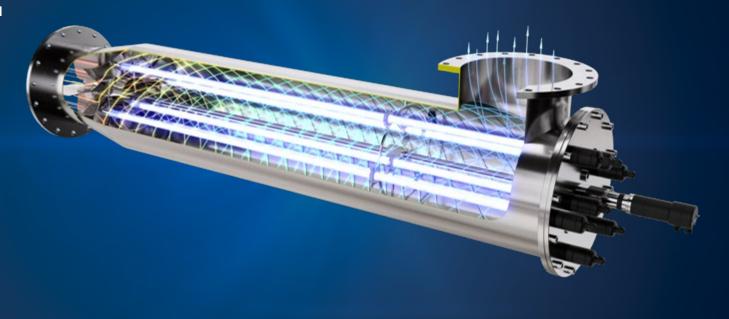
SSV DRINKING WATER SERIES

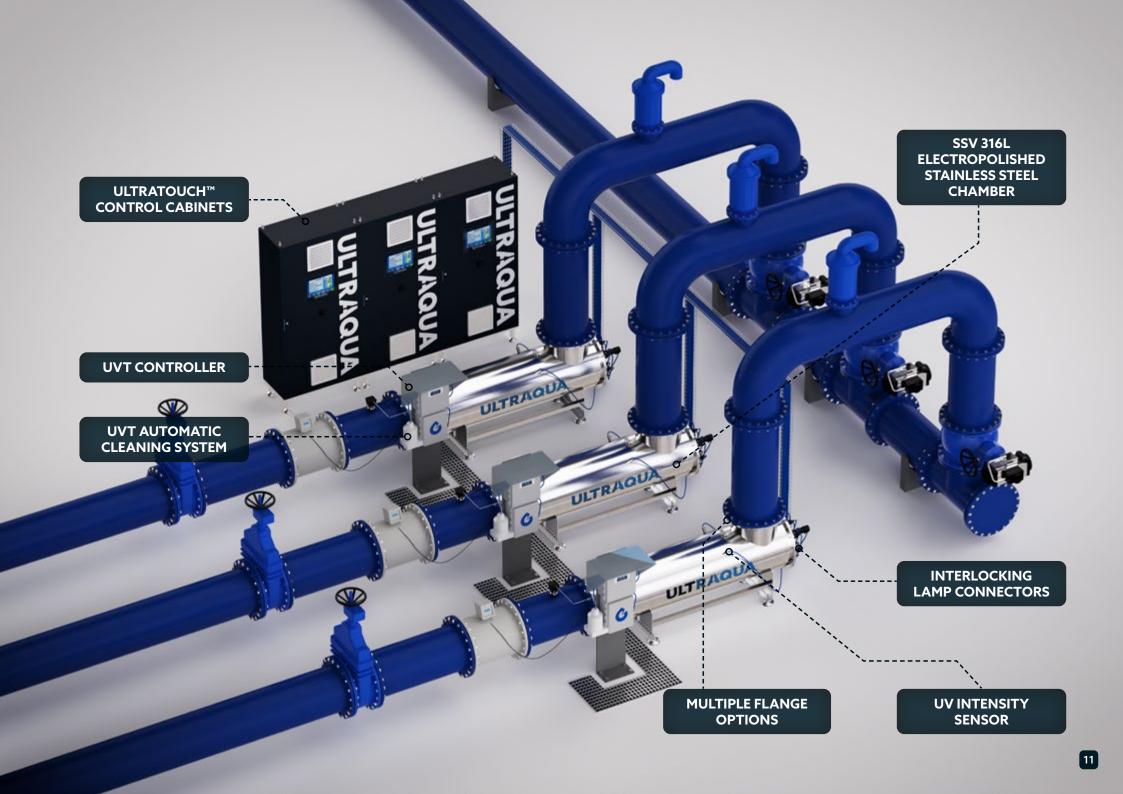
THE SSV DRINKING WATER UV SYSTEM PRODUCT RANGE FEATURES THE WORLDS MOST ADVANCED AND EFFICIENT UV DISINFECTION TECHNOLOGY.

THE SERIES OFFERS DISINFECTION
PERFORMANCES CAPABLE OF MORE THAN 4
LOG WITH FLOW CAPACITIES RANGING FROM
1 M³/HR TO OVER 4000 M³/HR.

KEY HIGHLIGHTS

- Guaranteed 16.000-hour ULTRATHERM™ lamp lifetime
- Complete control with ULTRATOUCH™ control cabinets
- The world's most efficient ÖNORM validated UV disinfection system
- SWIRLFLOW™ technology enabling an optimized 90% hydraulic efficiency at all water qualities.
- Automated ULTRAWIPER™ quartz cleaning with tailored brush heads
- 6 Easy maintenance and installation
- Extended 5 years warranty available subject to terms & conditions





ULTRABARRIER™ SERIES

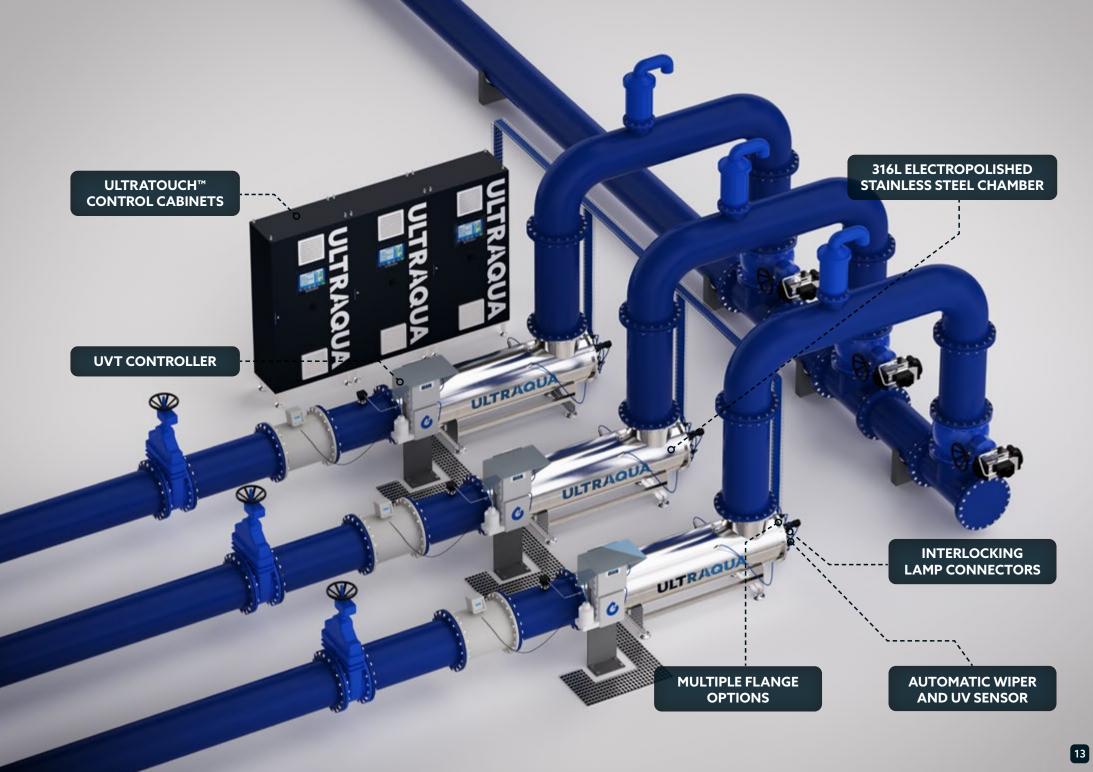
THE ULTRABARRIER SERIES IS DEVELOPED SPECIFICALLY FOR EXCELLENT INTAKE WATER UV DISINFECTION IN THE AQUACULTURE INDUSTRY.

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





LUVT LOW UVT SERIES

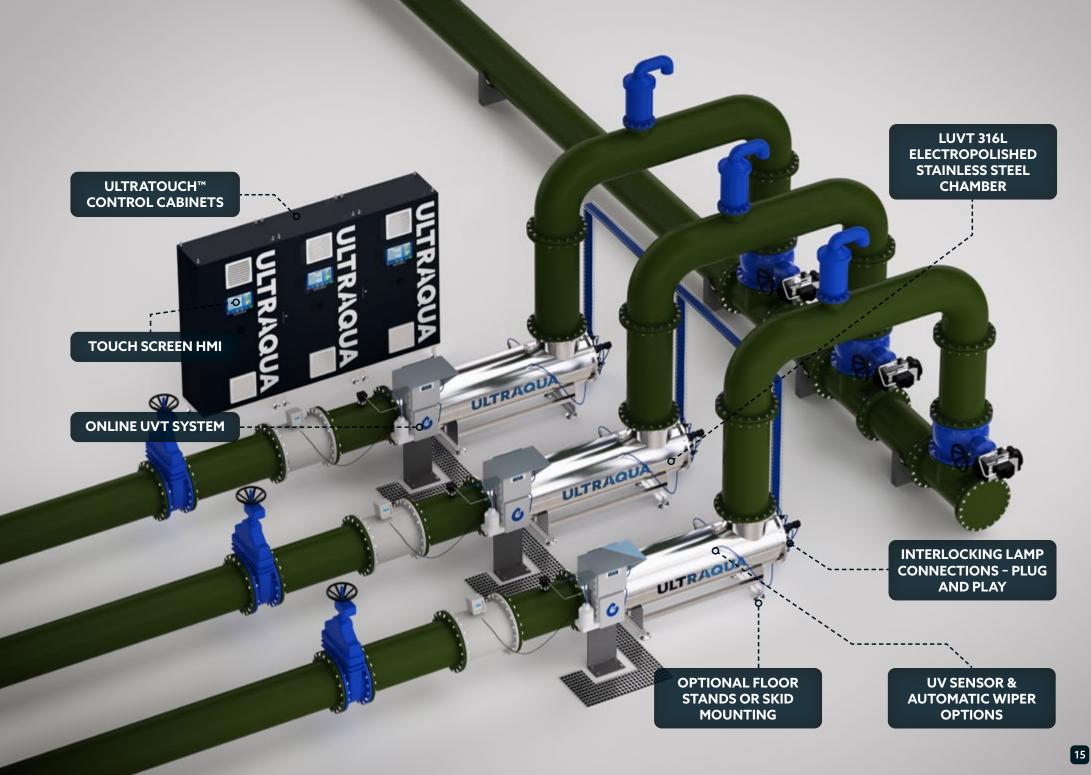
THE LUVT SYSTEM SERIES PROVIDES EXCELLENT UV DISINFECTION FOR APPLICATIONS IN LOW UVT ENVIRONMENTS.

THE INNOVATIVE LUVTSWIRL TECHNOLOGY MAKES THE LUVT SERIES ABLE TO PROLONG UV EXPOSURE TIME FOR PASSING PATHOGENS, ELIMINATING ANY CHANCE OF 'DARK AREAS' WITH UNTREATED MICROORGANISMS, WHILE MAINTAINING LOW ENERGY REQUIREMENTS. THIS MAKES THE LUVT SERIES THRIVE IN WASTEWATER ENVIRONMENTS.

KEY HIGHLIGHTS

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





SALMON HATCHERY, SCOTLAND

Annual production of 12 million smolts.



AQUARIUM, BAHRAIN

700 cubic metres of saltwater continuously disinfected.



SHRIMP FARM, AUSTRIA

RAS water disinfection.



ALGAE RESEARCH FACILITY, NEW ZEALAND

Intake water disinfection for RAS.



WORLD'S LARGEST EEL FARM, CHINA

158 systems for 15.000 annual tons of eel production.



SHRIMP FARM, VIETNAM

PP systems for one of the world's largest shrimp farms.



SMOLT FACILITY, ICELAND

Annual production of 1.600 tons of salmon fry.



RAS FACILITY IN BELSVIK, NORWAY

One of the world's largest RAS facilities for salmon.



RAS FACILITY IN VERMONT, USA

Large closed vessel UV systems for RAS facility.



MUNICIPAL WASTEWATER, FINLAND

Underground process wastewater of 400.000 residents.



FOOD & BEVERAGE, CUBAUV disinfection of 20% UVT liquid.



DRINKING WATER, DENMARKDrinking water disinfection in Hedensted.



WASTEWATER DISINFECTION, THAILAND

Wastewater disinfection in the Songkhla region.



DRINKING WATER, NORWAYPumping capacity of 900.000 liters per hour.



RAINWATER DISINFECTION, IRELANDDisinfected rainwater used for cooling of AHU's.



FOOD & BEVERAGE, DENMARK

Recycled process water in vegetable production.



WELLBOAT, GRIP ARCTICFish carrier in South America.



DRINKING WATER, CHINADrinking water facility in Yulin.



ULTRALOW ULU SERIES

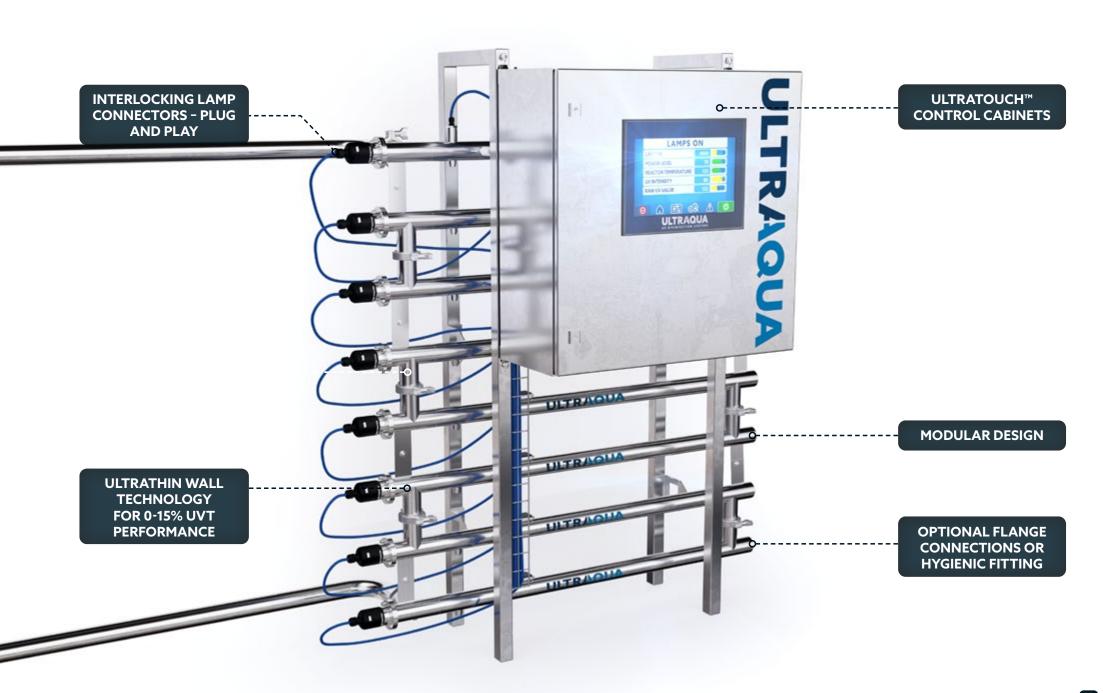
THE ULTRALOW UVT SERIES IS DEVELOPED SPECIFICALLY FOR APPLICATIONS WITH **EXTREMELY LOW UV TRANSMISSION (UVT)** FROM 2%.

THE SMALL DISTANCE BETWEEN THE **REACTOR WALLS AND THE QUARTZ SLEEVE ENSURES AN EVENLY DISTRIBUTED UV LIGHT EXPOSURE FOR HYDRAULIC OPTIMIZATION.** THIS MAKES THE ULU UV SERIES EXCELLENT FOR DISINFECTION OF FLUIDS SUCH AS LIQUID SUGAR, WINE, AND SALT BRINES.

KEY HIGHLIGHTS

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





TOC VUV SYSTEM SERIES

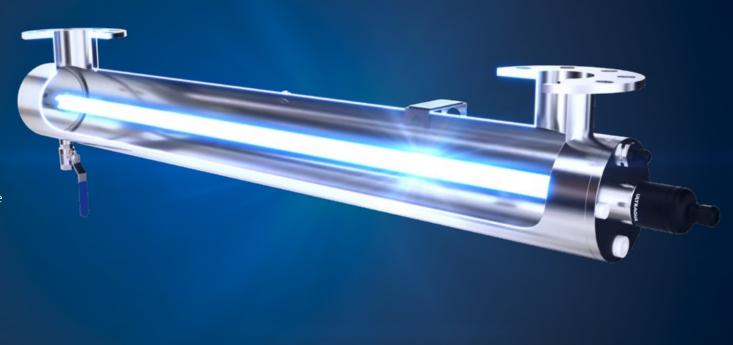
THE VACUUM UV (VUV) SERIES IS DEVELOPED SPECIFICALLY FOR TOC REDUCTION EXCELLENCE.

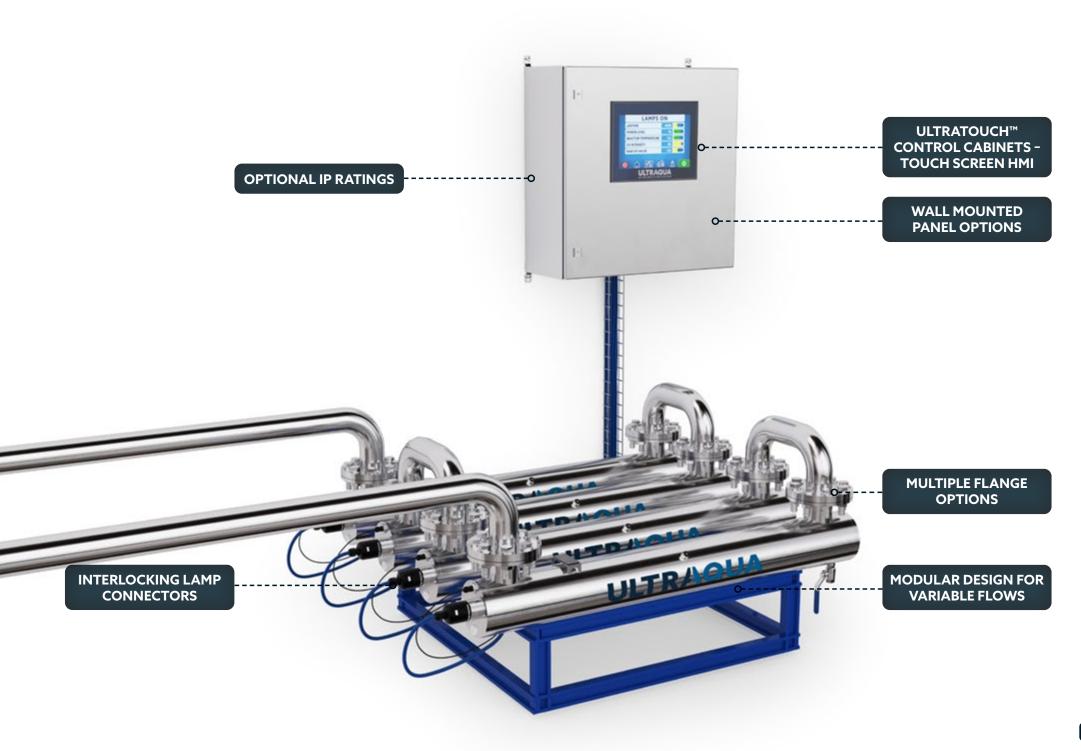
THE VUV TOC REACTORS ARE OPTIMIZED THROUGH A COMPREHENSIVE CFD MODELING APPROACH, RESULTING IN EXCELLENT ENERGY EFFICIENCY.

THIS MAKES IT MARKET-LEADING IN PROVIDING DISINFECTED WATER FOR APPLICATIONS SUCH AS PHARMACEUTICAL, FOOD & BEVERAGE, AND PROCESS WASTEWATER, WHERE EVEN THE SMALLEST OF CONTAMINANTS CAN HAVE A MAJOR NEGATIVE IMPACT.

KEY HIGHLIGHTS

- Guaranteed 12.000-hour ULTRATOX™ lamp lifetime
- Optimized for maximum efficiency
- Easy maintenance and installation
- Complete control with ULTRATOUCH™ control cabinets
- Excellent level of customization
- Extended 5 years warranty available subject to terms & conditions





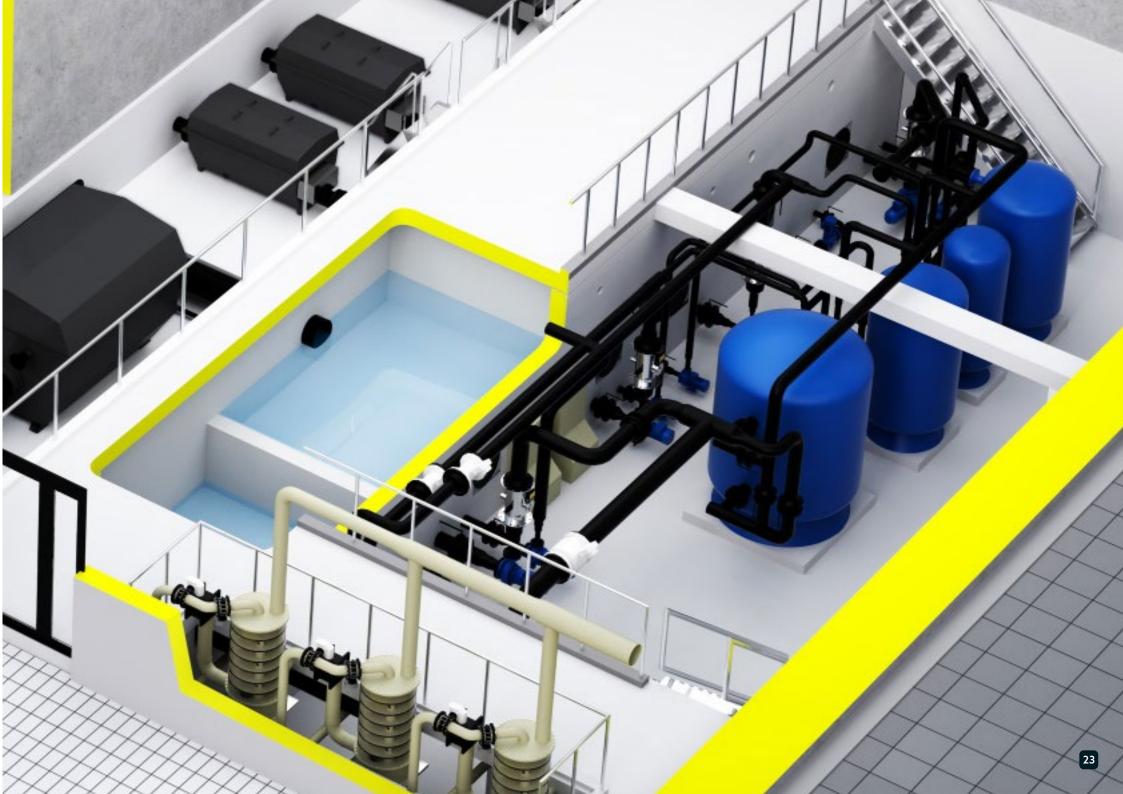
MULTIRAY MEDIUM PRESSURE SERIES

THE MULTIRAY SERIES IS DEVELOPED FOR EXCELLENT DISINFECTION AND CHLORAMINE REDUCTION IN SWIMMING POOLS, BEING OPTIMIZED FOR THE LOWEST POSSIBLE OPERATING COSTS.

KEY HIGHLIGHTS

- High-grade electropolished stainless steel 316L material providing excellent resistance against chlorides
- Medium-pressure ULTRATHERM™ 9.000-hour lamp lifetime
- 6 Easy maintenance and installation
- Sensor removeable during operation for service
- Tool free lamp service
- Single ended lamp for easy service
- PLC-based controller for easy integration



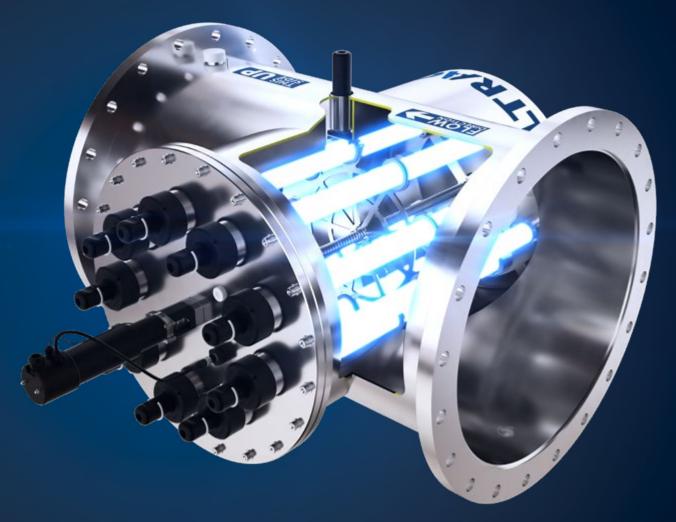


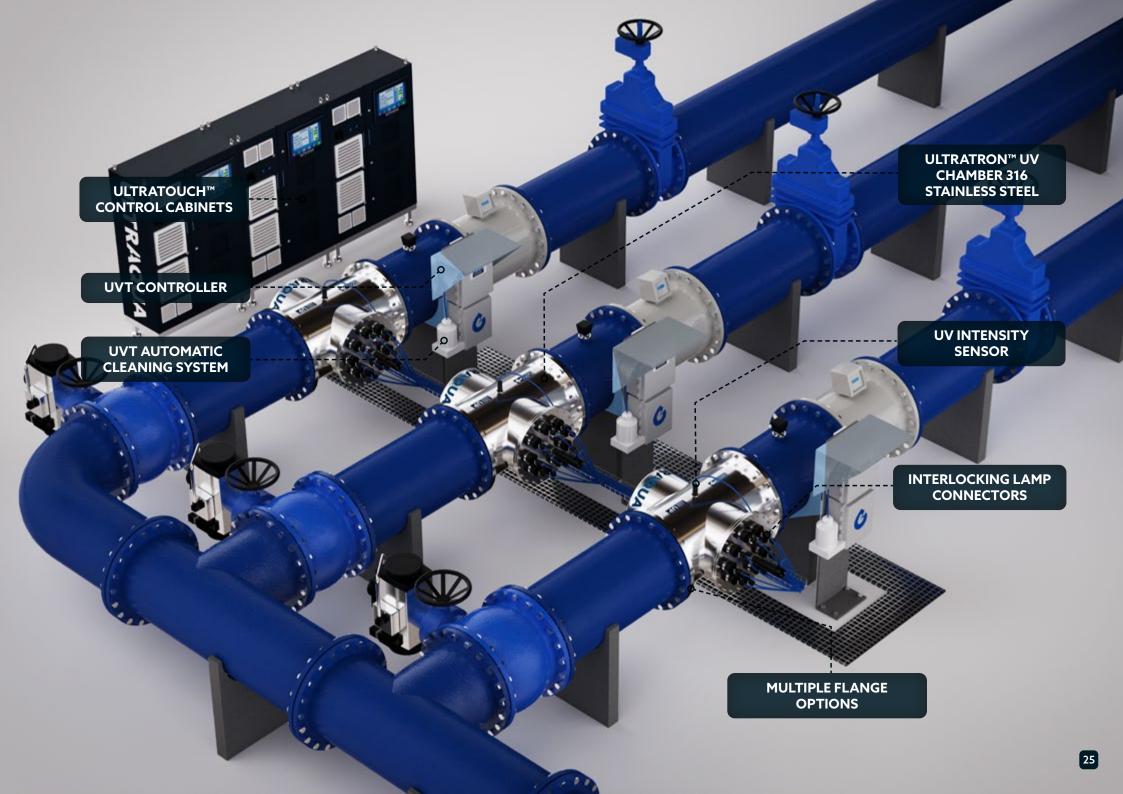
ULTRATRON MEDIUM-PRESSURE SERIES

THE ULTRATRON SERIES PRODUCT RANGE FEATURES THE WORLDS MOST ADVANCED AND EFFICIENT UV DISINFECTION TECHNOLOGY, OPTIMIZED FOR HIGH FLOW APPLICATIONS WHERE A SMALL FOOTPRINT IS ESSENTIAL AND HIGH-POWER DENSITIES ARE REQUIRED.

KEY HIGHLIGHTS

- Guaranteed 9.000-hour lamp lifetime. 12.000-hour expected lamp lifetime under normal operation
- Optimized for maximum efficiency
- Easy maintenance and installation, single sided access with no special tools required
- Easily integrated in complex environments, able for installation vertically and horizontally
- Complete control with ULTRATOUCH™ control cabinets
- Automated ULTRAWIPER™ quartz cleaning with tailored brush heads
- Extended 5 years warranty available subject to terms & conditions





OPEN CHANNEL (SS) SERIES

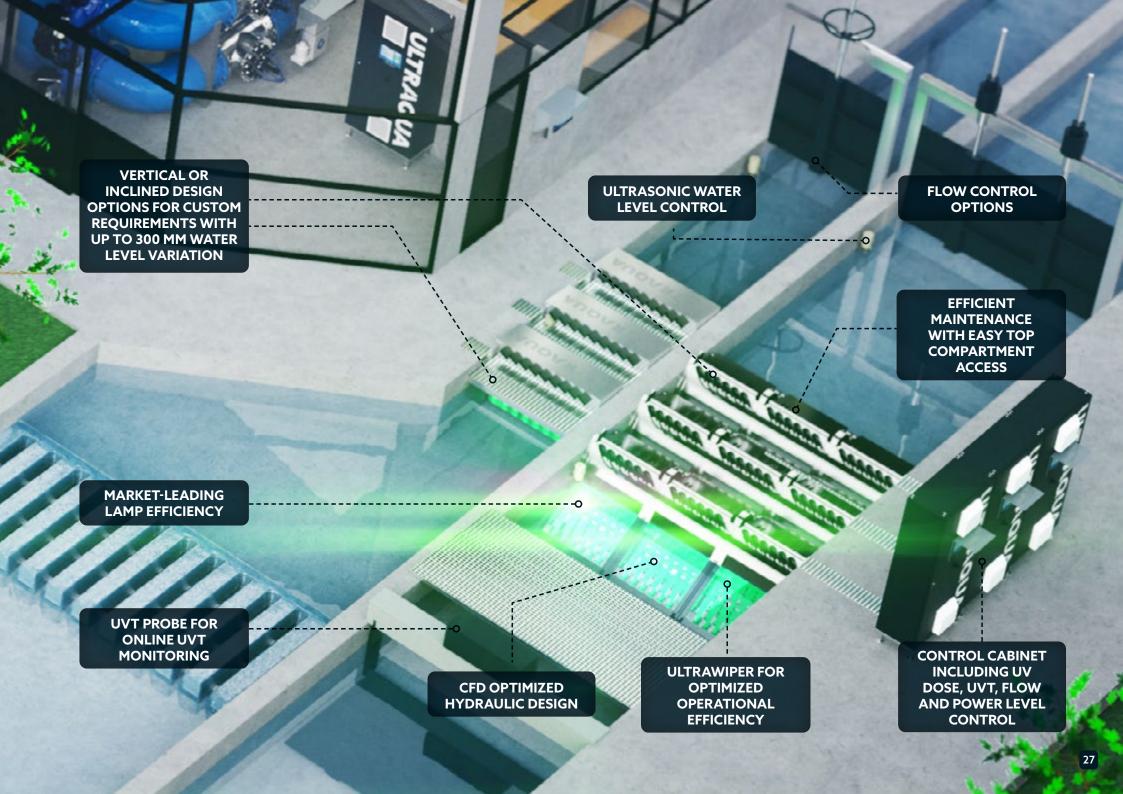
THE OPEN CHANNEL SERIES OFFERS SAFE, CHEMICAL-FREE DISINFECTION FOR A WIDE RANGE OF APPLICATIONS, AVAILABLE IN BOTH STAINLESS STEEL (SS) AND POLYPROPYLENE (PP).

THE SYSTEMS CAN BE CUSTOMIZED TO FIT INTO VIRTUALLY ANY CHANNEL DIMENSION, IN VERTICAL OR INCLINED DESIGN.

KEY HIGHLIGHTS

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





OPEN CHANNEL (PP) SERIES

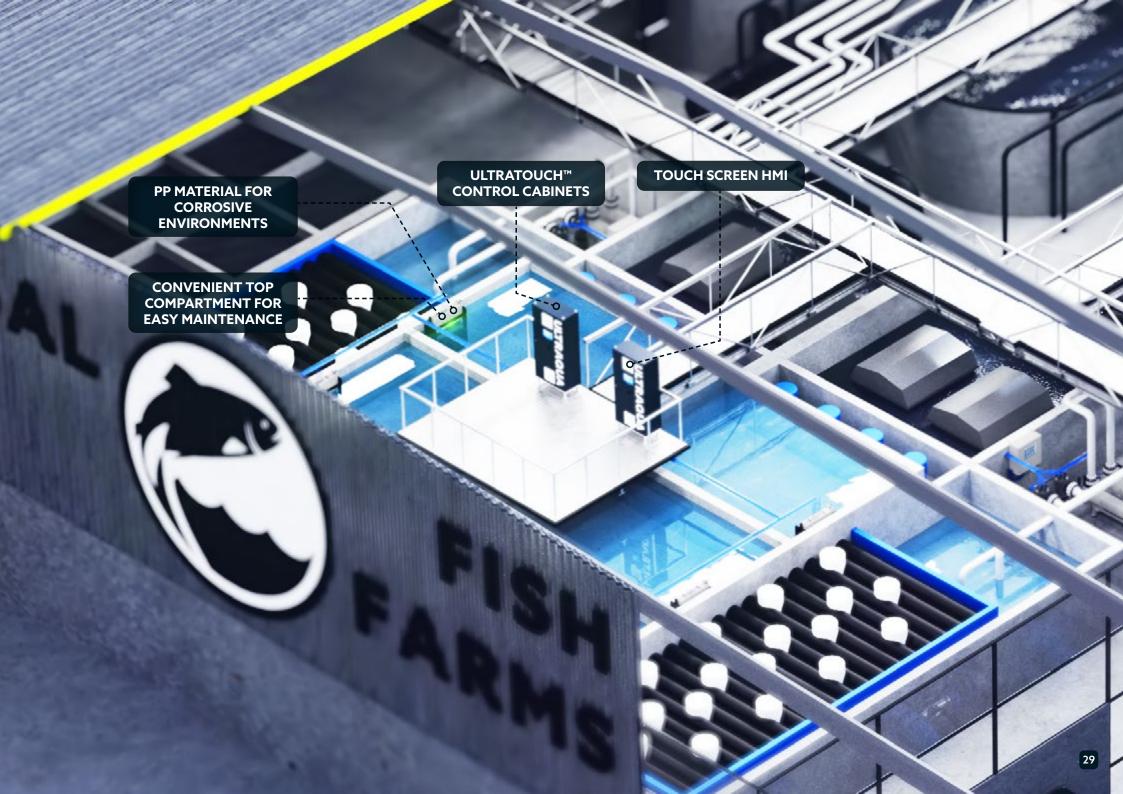
THE OPEN CHANNEL UV DISINFECTION SYSTEMS OFFERS SAFE, CHEMICAL-FREE DISINFECTION FOR A WIDE RANGE OF APPLICATIONS, AVAILABLE IN BOTH STAINLESS STEEL (SS) AND POLYPROPYLENE (PP).

THE SYSTEMS CAN BE CUSTOMIZED TO FIT INTO VIRTUALLY ANY CHANNEL DIMENSION.

KEY HIGHLIGHTS

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





COMPLETE CONTROL WITH ULTRATOUCH™ CONTROL CABINETS

THE MARKET LEADING ULTRATOUCH™ PLC IS THE VERY LATEST IN CONTROL AND TOUCH-SCREEN HMI TECHNOLOGY.

THE AUTOMATIC DOSE PACING ENSURES OPTIMIZED EFFICIENCY BY REDUCING POWER CONSUMPTION WHILE ENSURING A STABLE DOSE UNDER OPERATION.

KEY HIGHLIGHTS

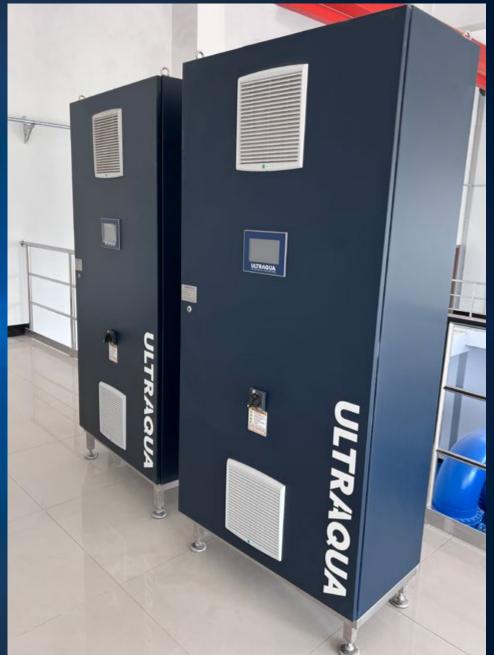
- Automatic dose pacing ensuring optimized power consumption and a stable operation dose
- 6 Full data logging for complete operator control
- 6 Comprehensive performance and event logs
- 6 Cabinet and reactor overheat protection
- PLC controls easily integrated into SCADA layouts
- 6 Intuitive touch-screen HMI technology











MUNICIPAL WASTEWATER, KOSOVO

New WWTP treating a flow rate of 760 m3/h.



FOOD & BEVERAGE, DENMARK

Reuse of process water at Premier Is.



RAS FACILITY, NORWAY

Large-scale land-based salmon farm in Fredrikstad.



AQUACULTURE RESEARCH FACILITY, KOREA

Intake water disinfection.



MUNICIPAL WASTEWATER, TAIWAN

Zero-discharge sewage water resources recycling center.



SWIMMING POOL, CHINA

Swimming pool disinfection for the world expo in China.



DRINKING WATER, DENMARK

Drinking water disinfection in Frederiksberg.



MUNICIPAL WASTEWATER, MEXICO

11 Open Channel systems for wastewater disinfection.



SALMON RESEARCH FACILITY, NEW ZEALAND

PEHD UV systems for intake water disinfection.



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:

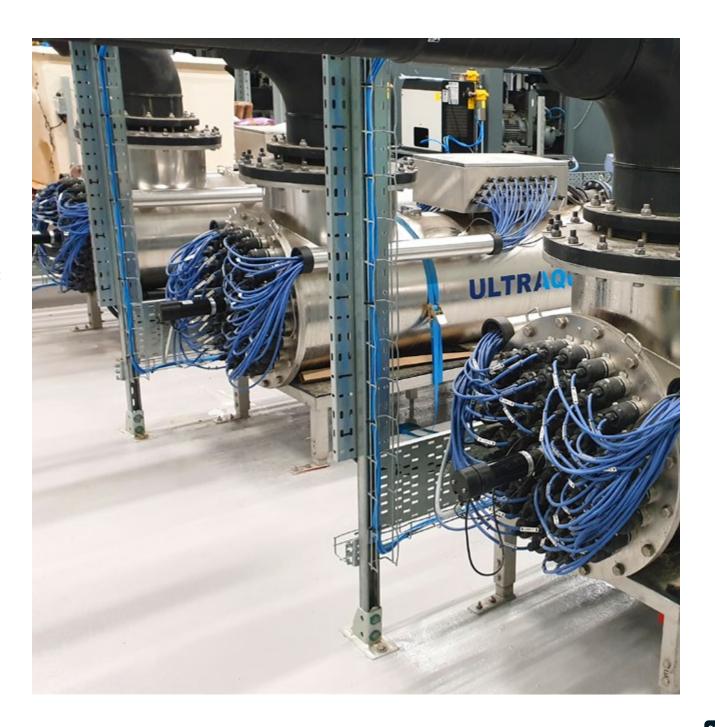
Customized services

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

Customized products

- 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





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:

- **6** General technical support
- 6 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.

