MULTIRAY SERIES

MEDIUM PRESSURE UV AGAINST COMBINED CHLORINE, CRYPTO AND GIARDIA

ULTRAQUA

UV DISINFECTION SYSTEMS

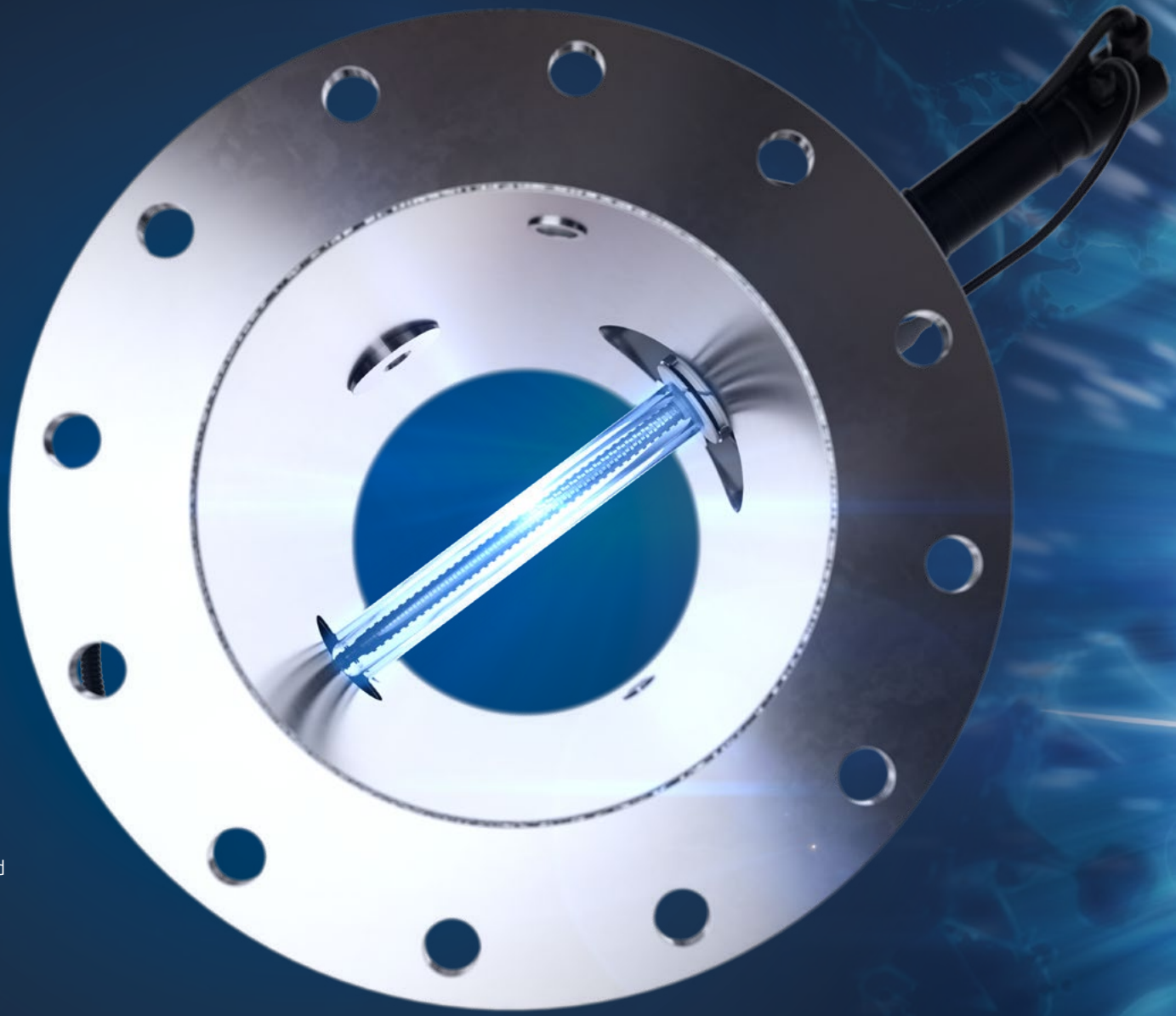
WE PROTECT YOUR MOST VALUABLE RESOURCE

MULTIRAY 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

- Developed for high-capacity pool disinfection and combined chlorine removal
- High-grade electropolished stainless steel 316L material providing excellent resistance against Cryptosporidium & Giardia
- CFD-optimized reactor geometry ensuring maximum hydraulic efficiency and minimal head loss.
- Low headloss design, minimizing the need for additional pumping
- Medium-pressure ULTRATHERM 9 000-hour lamp lifetime
- Robust automatic wiper system, reducing the downtime and keeping the UV running optimally
- Simplified maintenance and installation, single sided access with no special tools required
- Sensor removable during operation for service
- PLC-based controller for easy integration



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.

ULTRAQUA

COMPLETE CONTROL WITH ULTRATOUCH CONTROL CABINETS
The market-leading ULTRATOUCH PLC is the very latest in Siemens touch-screen HMI technology. Relevant interfaces and connectors are available, also offering remote operation and dimming functionality.

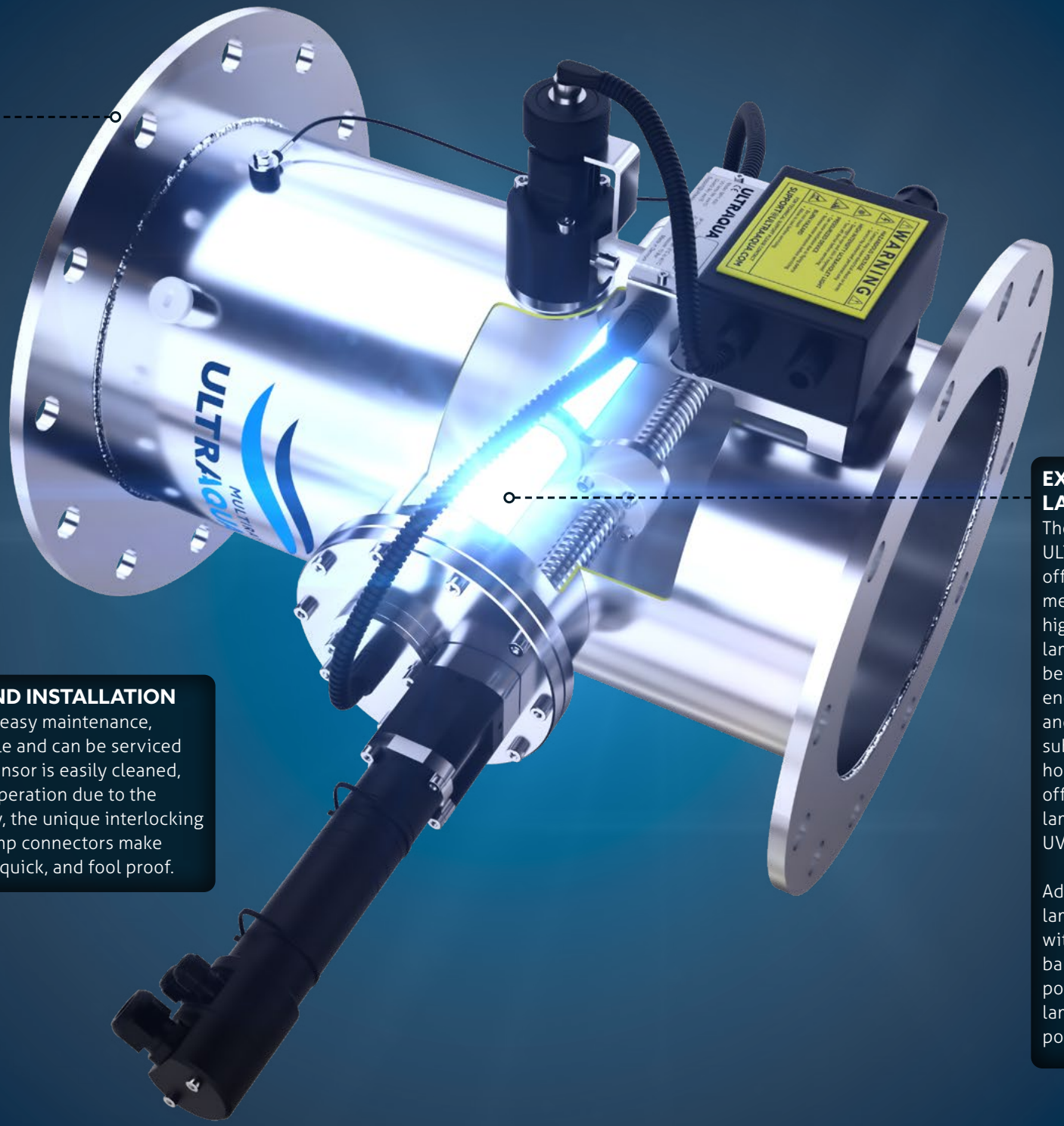
OPTIMIZED FOR REMOVAL OF COMBINED-CHLORINE
The compact reactor with its CFD optimized lamp positioning makes the MULTIRAY able to offer maximum hydraulic efficiency throughout the entire UVT range with minimum head loss, making the system optimized for combined chlorine removal.

DISINFECTION FIREWALL
The MULTIRAY ensures excellent protection against cryptosporidium and giardia while removing combined chlorine.

POOL SENSOR
High-quality precision sensor, designed for pool UV. Close sensor valve to clean under operation.

TEMPERATURE CONTROL
Overheating and melting damage is avoided with a temperature sensor.

HIGH GRADE 316L STAINLESS STEEL
The high-grade stainless steel offers excellent resistance against chlorides.



EASY MAINTENANCE AND INSTALLATION
With a design that allows for easy maintenance, the system is easily installable and can be serviced using no special tools. The sensor is easily cleaned, serviced or replaced under operation due to the integrated valve. Additionally, the unique interlocking electrical and mechanical lamp connectors make servicing of the system safe, quick, and fool proof.

EXCEPTIONAL LAMP LIFETIME
The integrated ULTRATHERM lamps offer the very latest medium pressure high-intensity UV lamp technology, being optimized for energy efficiency and robustness. The substantial 9 000 hours of lamp lifetime offers market-leading lamp efficiency in UV-C output density.

Additionally, the lamps are operated with an electronic ballast optimizing power use and making lamp function alarm possible.

UV SYSTEM	MULTIRAY MP1-1000	MULTIRAY MP1-2000	MULTIRAY MP1-3500	MULTIRAY MP2-3500	MULTIRAY MP3-3500	MULTIRAY MP4-3500
Product ID	24110	24202	24211	24221	24230	24240
Approvals	CE [UL]					
UV LAMPS & MONITORING						
Total Lamps	1	1	1	2	3	4
ULTRATHERM MPHI Lamp	1000 W	2000 W	3500 W	3500 W	3500 W	3500 W
Total Lamp Power	1000 W	2000 W	3500 W	7000 W	10500 W	14000 W
Expected Lamp Lifetime	9 000 Hours					
UV Monitoring	UV Intensity Sensor Pool Specialised					
Variable Power	Automatic ULTRADOSE Pacing 50-100%					
UV CHAMBER						
Connection Size	DN150 (ANSI6) / D160	DN200 (ANSI8) / D200	DN250 (ANSI10) / D250	DN300 (ANSI12) / D315	DN300 (ANSI12) / D315	DN300 (ANSI12) / D315
Connection Type	EN-1092 Type 01A PN10 (ANSI Class 150)					
Design Pressure	10 bar (145 psi)					
Chamber Material	SS316L/1.4404					
Internal / External Finish	Electropolished Inside/Out					
Quartz Type	High Purity Fused Quartz Transmittance >95%					
ULTRAWIPER™ System	Automatic Mechanical with PTFE/Fibre Rings - Electrical [Manual Wiper]					
Temperature Probe	Yes					
Ingress Protection	IP65					
Vent / Drain Ports / Air Port	Prepared for 1/2" Valve (Not Included)					
Minor Wetted Parts	FDA Approved PTFE, PVDF, VITON					
Reactor Dry Weight	17 kg (37 lb)	23 kg (51 lb)	28 kg (62 lb)	42 kg (93 lb)	44 kg (97 lb)	46 kg (101 lb)
Reactor Volume	10 L (2.6 gal)	18 L (4.8 gal)	26 L (6.9 gal)	58 L (15.3 gal)	58 L (15.3 gal)	58 L (15.3 gal)
CONTROL CABINET						
Cabinet Material	Powder Painted Steel					
Cabinet Size (H×W×D) mm (in)	600×600×300 (23.6×23.6×11.8)	600×600×300 (23.6×23.6×11.8)	600×600×300 (23.6×23.6×11.8)	800×800×300 (31.5×31.5×11.8)	1000×1000×300 (39.4×39.4×11.8)	1000×1000×300 (39.4×39.4×11.8)
Cable Length	10 Meters [Max. 30 Meters] (33 ft [Max. 98 ft])					
Installation & Ambient	Wallmount 0-40°C (32-104°F) Non-Condensing					
Ingress Protection	IP54 [IP65]					
Thermal Control	Fan Cooled System					
Control Logic	PLC					
Interface/HMI	ADV.: 7" ULTRATOUCH					
SCADA Communication	MODBUS TCP/IP					
Digital/Analogue 4-20mA I/O	ON Signal / Flow Input / UV Dose Output / Alarm Output					
Remote Monitoring	Yes					
Log	Alarm, Event & Data (UV Dose, UV Intensity, Flow & Combined Chlorine)					
Power Supply	3×400VAC +/- 10% +N+PE 50/60Hz					
Total Power Consumption	1,1 kW	2,2 kW	3,6 kW	7,2 kW	10,7 kW	14,2 kW
Cabinet Weight	42 kg (93 lb)	42 kg (93 lb)	42 kg (93 lb)	62 kg (137 lb)	75 kg (165 lb)	83 kg (183 lb)
SYSTEM						
Capacity Max Flow 3m/s	190 m³/h (837 GPM)	300 m³/h (1321 GPM)	480 m³/h (2113 GPM)	800 m³/h (3522 GPM)	800 m³/h (3522 GPM)	800 m³/h (3522 GPM)
Flow @ 60mJ/cm² 95% UVT (3log Crypto + Combined Chlorine Breakdown)	63 m³/h (277 GPM)	143 m³/h (630 GPM)	275 m³/h (1211 GPM)	650 m³/h (2862 GPM)	950 m³/h (4183 GPM)*	1250 m³/h (5504 GPM)*
Flow @ 60mJ/cm² 98% UVT (3log Crypto + Combined Chlorine Breakdown)	82 m³/h (361 GPM)	200 m³/h (881 GPM)	400 m³/h (1761 GPM)	1000 m³/h (4403 GPM)*	1450 m³/h (6384 GPM)*	1900 m³/h (8365 GPM)*

European standard for pool designs: 60mJ/cm² - 95% UVT

* NOTE! Exceeds Recommended Capacity at 3 m/sec.

[Options are marked with square brackets] - Specifications are subject to change without notice. **Version: 26.1**

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.

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.

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

The ISO 9001 certification ensures that all processes are documented and controlled to maintain and continuously improve the quality of our products and services. The certification reflects a dedication to providing high-quality solutions for every single project.

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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CUSTOMIZED SOLUTIONS

ULTRAAQUA UTILIZES AN ENTIRE DEPARTMENT OF ENGINEERS SPECIALIZED IN THE DESIGN AND CONSTRUCTION OF UV SYSTEMS.

Numerous years of experience in various applications enable the adjustment of any standard UV system to accommodate specific requirements.

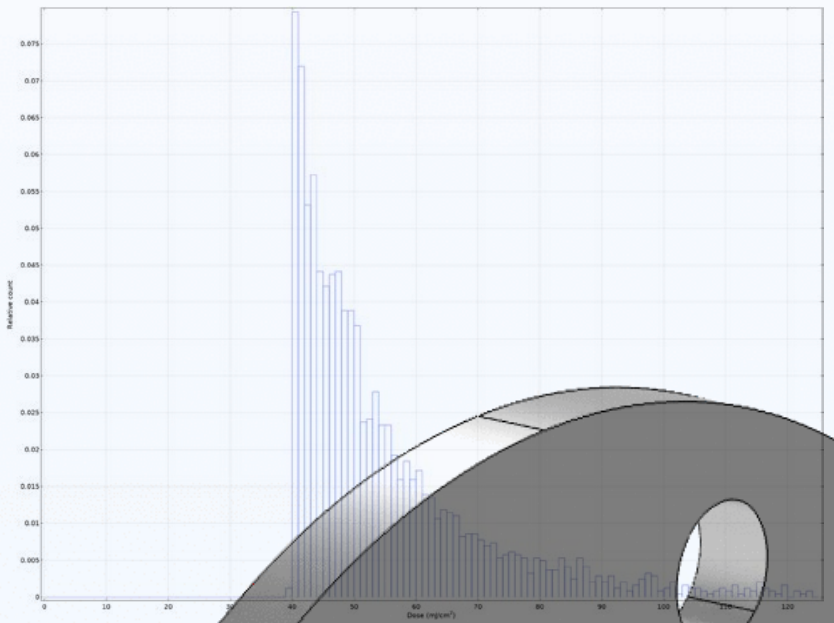
The customization requirements can vary from adjustments such as reactor shape or flange size to various advanced features.

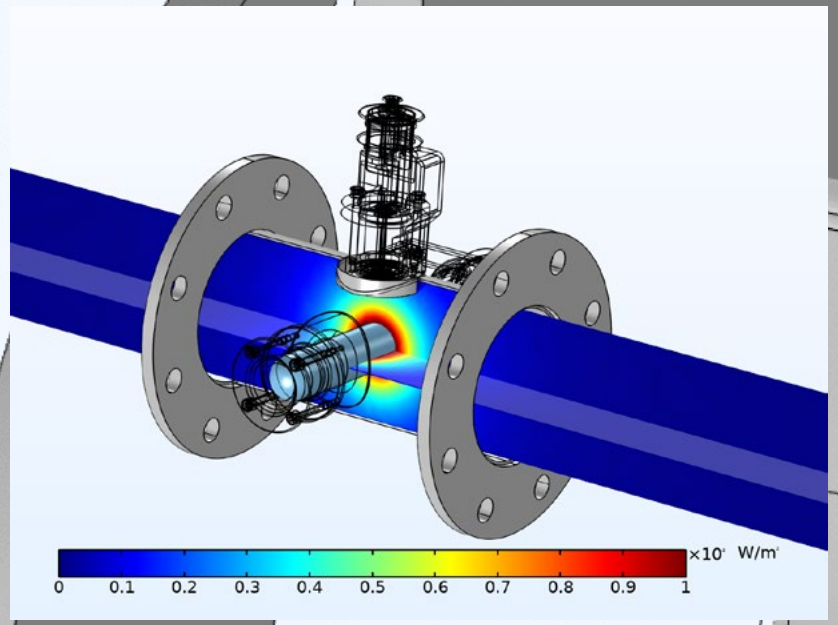
This enables us to ensure on-site validation to various standards, fitting your exact requirements.

For all customizations, the services and solutions include, but are not limited to:

- Integrated CFD Analysis
- Particle tracing modeling analysis
- Determining fluence rate
- Physical testing
- On-site validation testing
- Solutions for advanced applications
- Packaged plant equipment
- Mobile treatment containers
- Skid packages

Additionally, our engineers are able to assist with installation details such as weir design, water level control devices, and many other project-specific matters.





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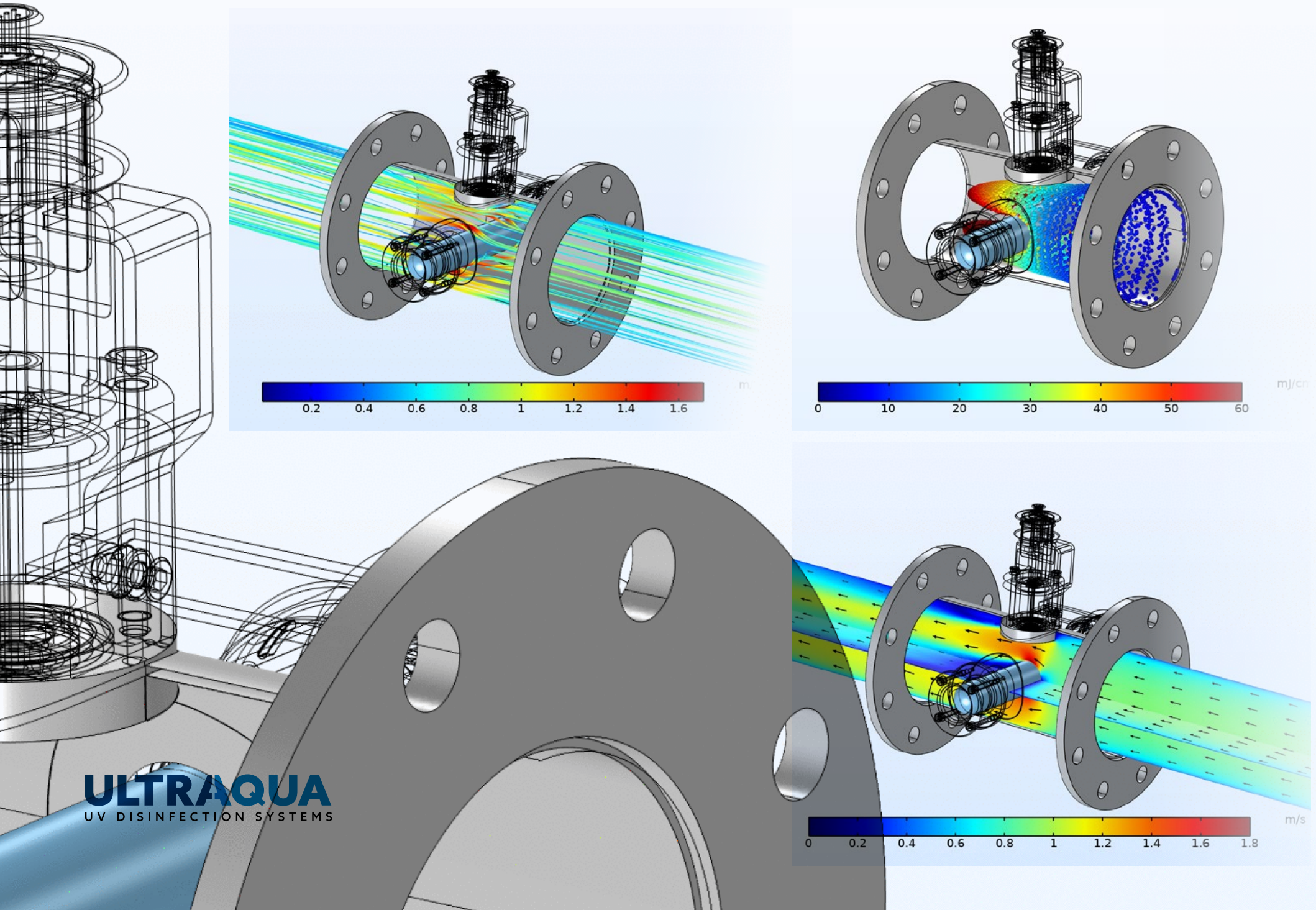

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R&D CAPACITIES

SINCE 1996, THE R&D DEPARTMENT HAS BEEN THE BACKBONE OF ULTRAAQUA.

Employing the brightest industry specialists with diverse expertise to drive continuous innovation has been vital to the company's success. The research department is led by Ole Grønborg and Morten Møller Klausen, who are industry leaders in water treatment research, working toward a much-needed paradigm shift in commercial swimming pool sanitation.

The ULTRAAQUA R&D department conducts, supports, and pioneers some of the latest developments in the water industry. These projects are often carried out in collaboration with specialists from municipalities, universities, top-tier consultancies, and international companies. The projects primarily focus on developing unique and advanced chemical-free disinfection solutions for some of the world's most complex water quality challenges.

In addition to ultraviolet sterilization, research on technologies such as ozonation, biofiltration, and particle filtration has been conducted, resulting in deep scientific insights into achieving the world's healthiest bathing water.

This ultimately allows ULTRAAQUA to position itself among the industry leaders in UV disinfection, providing customers with the best available solutions.

SERVICE & SUPPORT

ULTRAAQUA IS A GLOBAL COMPANY OFFERING WORLDWIDE SERVICE AND SUPPORT, WITH ITS HEAD OFFICE BASED IN DENMARK.

With over 10 000 systems installed in over 120 countries, ULTRAAQUA offers extensive support regarding installation and maintenance through a wide-ranging network of regional offices.

The technical support team at our head office provides 24-hour remote service upon agreement to reduce the risk of emergencies.

At ULTRAAQUA, it is our goal to provide a complete product experience for our customers, from specifying requirements to ongoing operational maintenance. This naturally means that our responsibility does not stop after the UV system reaches its destination.

By maintaining close collaboration with all clients, a trouble-free process is ensured throughout all post-installation activities.

The 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 necessary, qualified engineers are available for on-site training and technical support, able to assist in setting up the complete solution. To ensure maximum system performance and reliability, extensive information and technical knowledge are always provided.

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.

WANT TO LEARN MORE?

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