

# LANDFILL LEACHATE

UV DISINFECTION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT



**ULTRAAQUA**  
UV DISINFECTION SYSTEMS

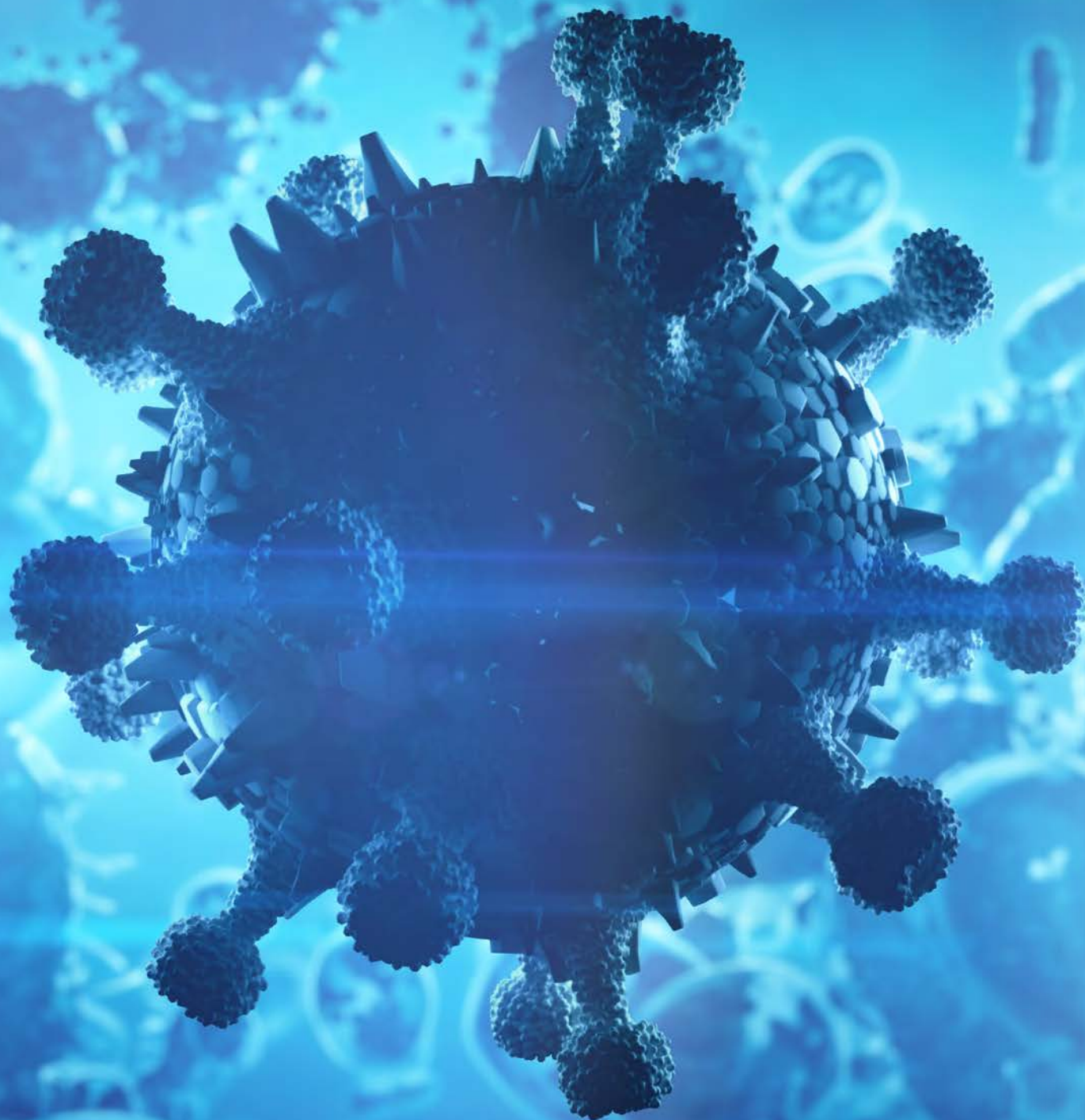
WE PROTECT YOUR MOST VALUABLE RESOURCE

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A microscopic view of various bacteria and viruses, rendered in shades of blue and white. The background is a dense field of these microorganisms, including spherical viruses with spikes, rod-shaped bacteria, and larger, more complex structures. The overall tone is a deep, cool blue.

**KEEP YOUR WATER SAFE**

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UV DISINFECTION SYSTEMS



## CORE BENEFITS OF UV

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

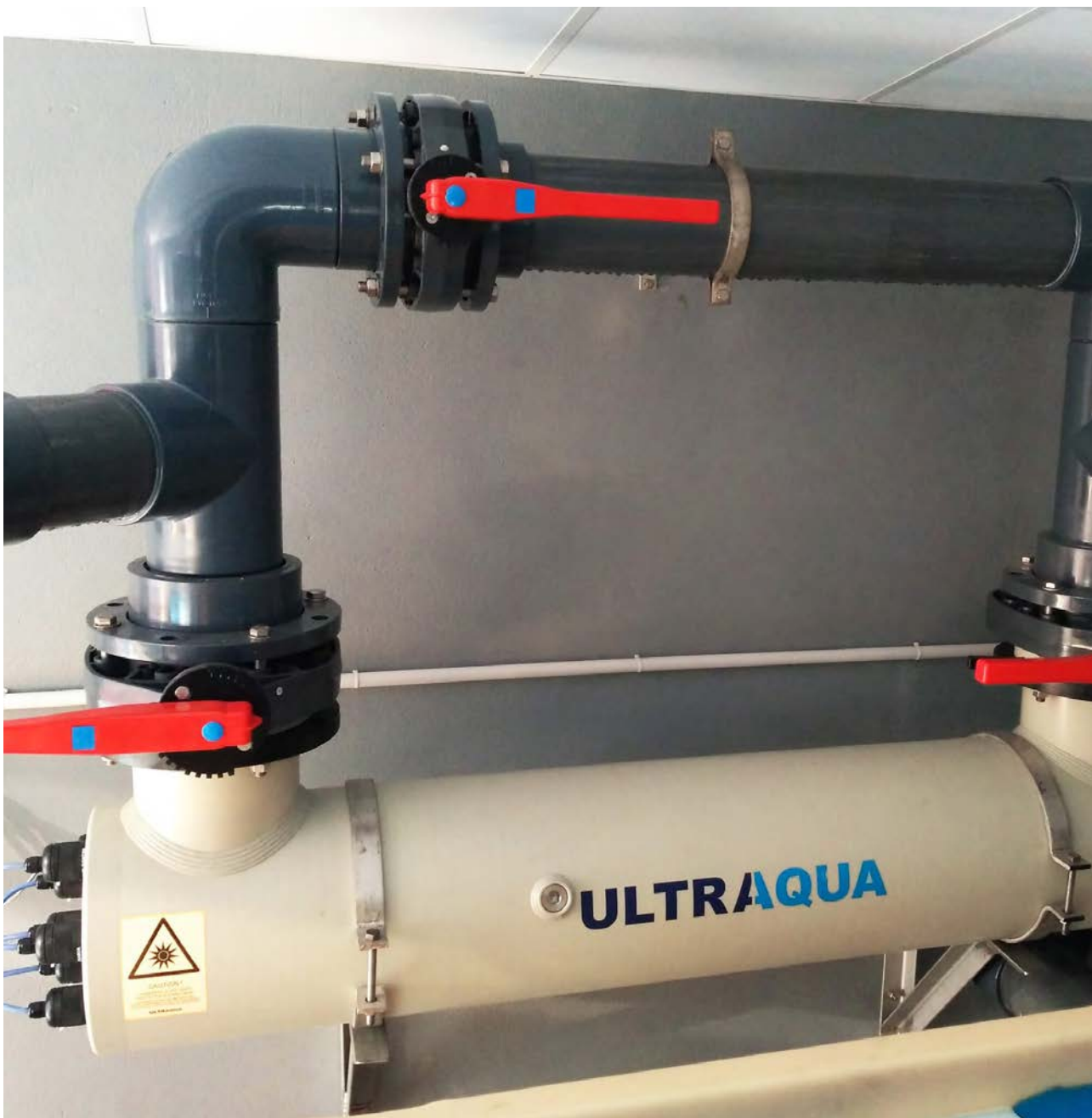
The demand for cost-efficient solutions to provide clean water are at an all-time high and will only increase in the future. UV disinfection solves this complex challenge, being able to meet the strictest requirements regarding bacteria and virus protection.

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.

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## LANDFILL LEACHATE UV DISINFECTION

**LANDFILL LEACHATE CONSISTS OF RUNOFF RAINWATER FROM LANDFILLS THAT ARE FULL OF ORGANIC AND INORGANIC MATERIALS SUCH AS AMMONIUM, PHOSPHOROUS, SULFATE, MICROPLASTICS, METALS, AND MANY MORE.**

Landfill sites have improved in a lot of regions throughout recent years due to increased environmental awareness, upgrading the leachate management processes. However, it still poses a major treatment challenge in many countries, due to the highly variable consistency, toxins, and geological challenges related to landfill locations all over the world.

As a result, the treatment of landfill leachate can become costly, as adding additional chemicals is not an option. Additionally, a lot of leachate treatment policies set requirements for almost none to zero residues. This has made UV disinfection the preferred solution for leachate treatment. Upon removal of total suspended solids (TSS), one of the preferred ways to treat highly contaminated water is by utilizing Advanced Oxidation Processes (AOP) technologies.

The medium-pressure ULTRATRON™ series releases higher energy wavelengths, that are able of destroying a variety of compounds. By utilizing photochemical reactions, OH-radicals capable of degrading persistent and toxic chemical compounds are generated. ULTRAAQUA offers multiple solutions to perform both standard water disinfection, but also destroy complex chemical compounds.

# ULTRAAQUA

## 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
- 🔧 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.

## 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:

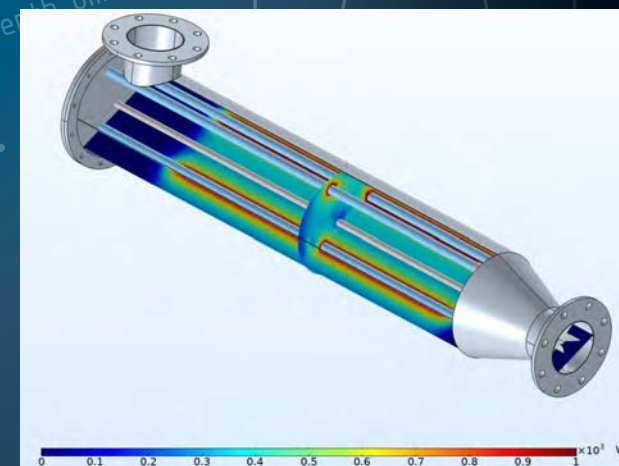
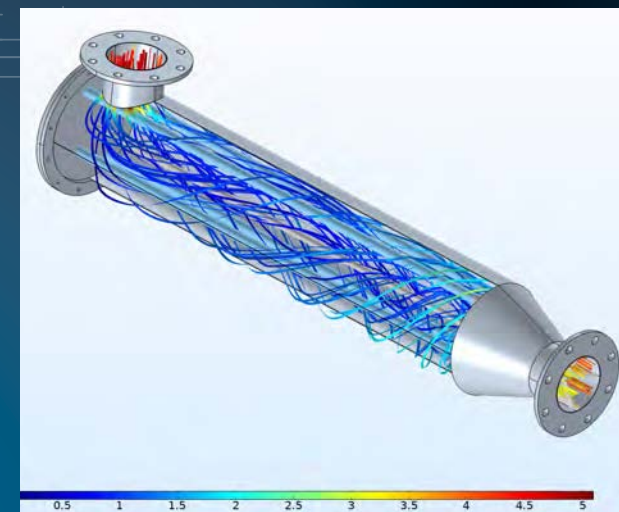
#### Customized services

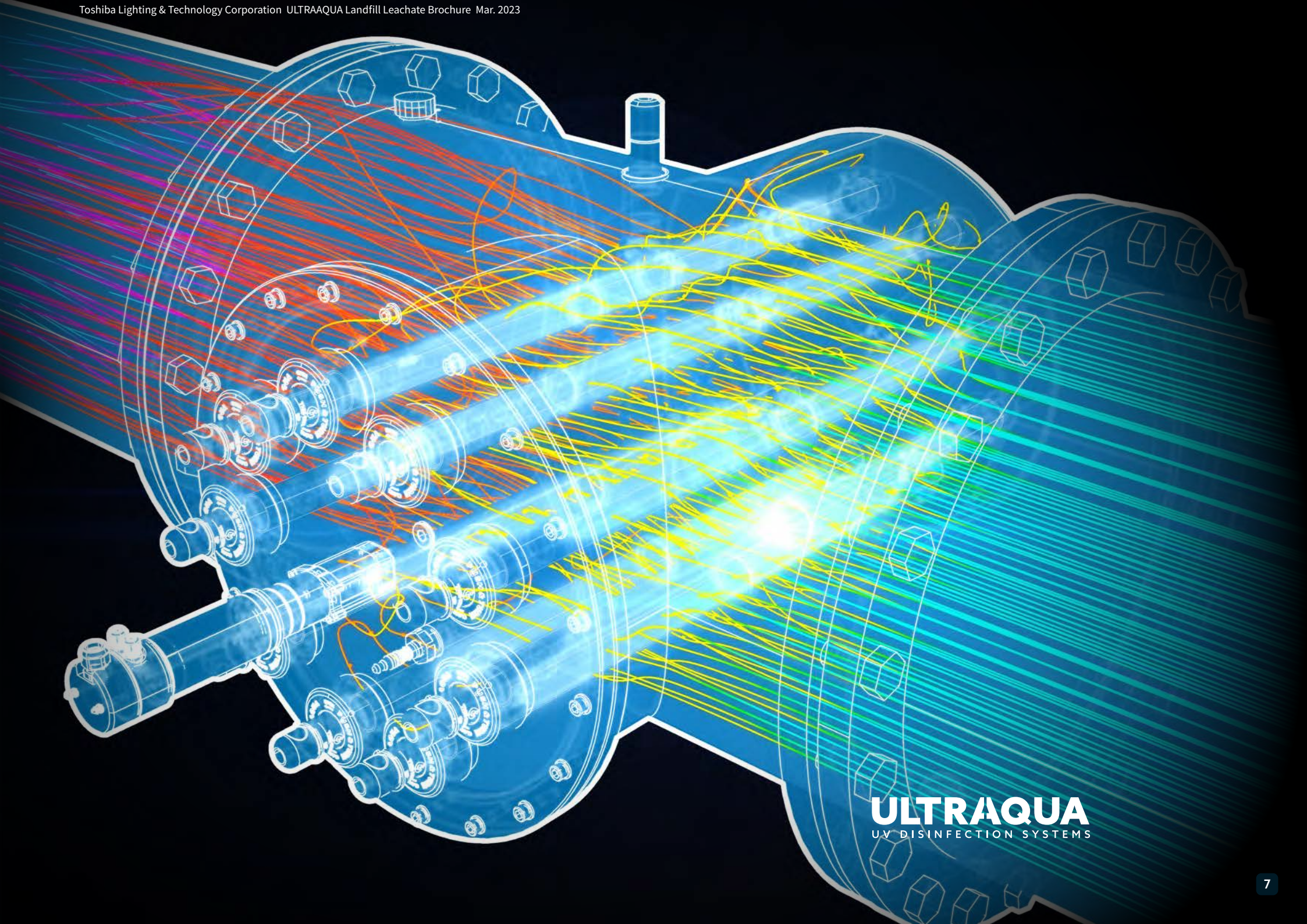
- 🔧 Integrated CFD Analysis
- 🔧 Particle tracing modeling analysis
- 🔧 Determining fluence rate
- 🔧 Physical testing
- 🔧 Onsite validation testing
- 🔧 Advanced UV disinfection support

#### 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.





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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 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.

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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 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.

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## 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 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.



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.



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



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 **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.

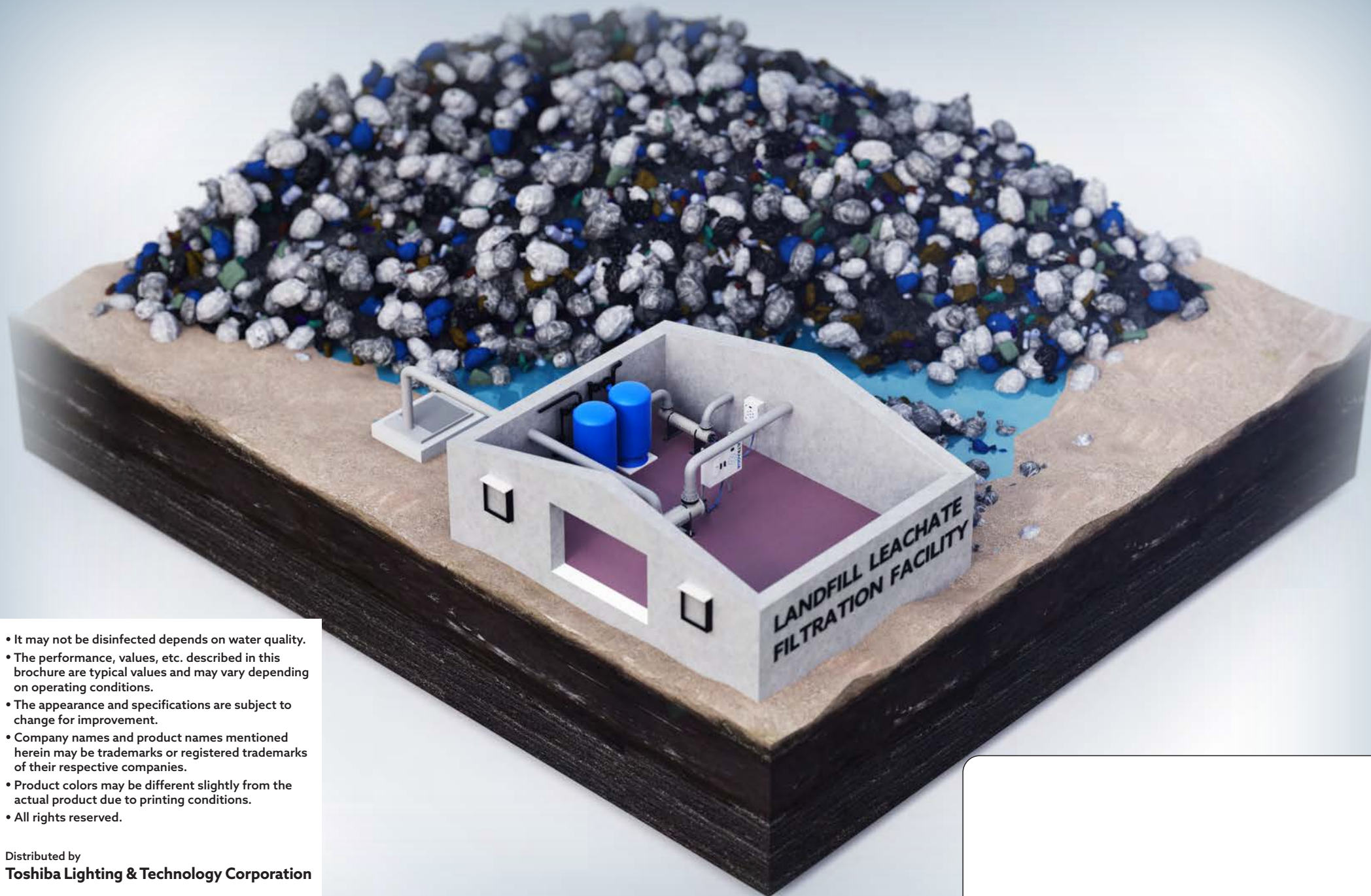
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# PRODUCT OVERVIEW FOR LANDFILL LEACHATE

EASY TO INSTALL, MAINTAIN, THOROUGHLY COST OPTIMIZED, AND CAPABLE OF MEETING THE STRICTEST DISINFECTION REQUIREMENTS.



	LUVT LOW UVT	ULTRATRON™
<b>UV FUNCTION / APPLICATION</b>	DISINFECTION	DISINFECTION / DE-OZONATION / DE-CHLORINATION / AOP
<b>LAMP TECHNOLOGY</b>	LOW PRESSURE	MEDIUM PRESSURE
<b>LAMP LIFETIME</b>	16.000 HOURS	9.000 HOURS
<b>REACTOR CONFIGURATION</b>	U, L & Z SHAPE	INLINE
<b>FLOW CAPACITY (SINGLE UNIT ONLY)</b>	5 M3/H (22 GPM) – 6.000 M3/H (38 MGD)	11 M3/H (50 GPM) – 8.000 M3/H (50,7 MGD)



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

