INDUSTRIAL WASTEWATER

UV DISINFECTION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT

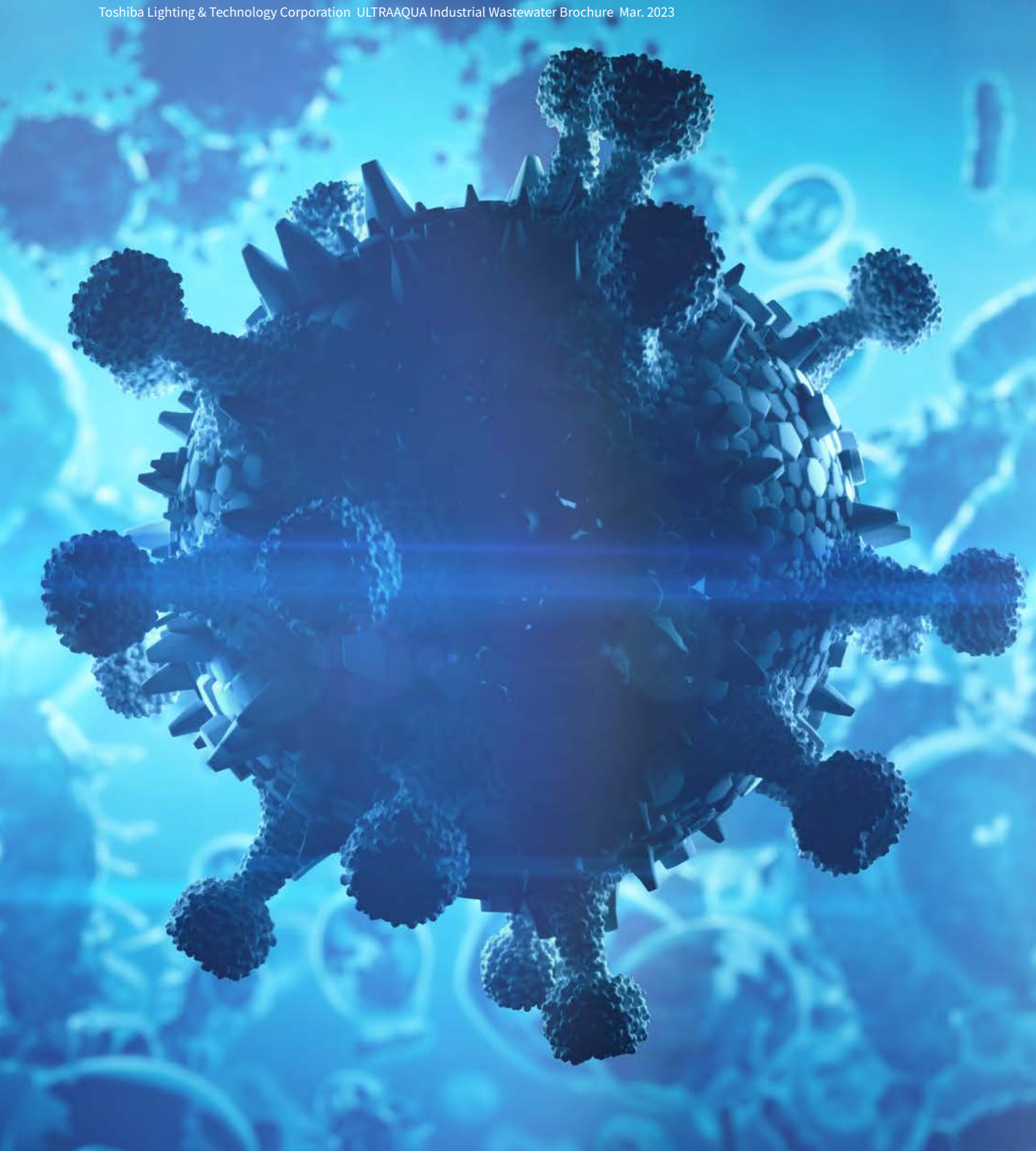
ULTRAAQUA

UV DISINFECTION SYSTEMS

WE PROTECT YOUR MOST VALUABLE RESOURCE

Distributed by Toshiba Lighting & Technology Corporation


KEEP YOUR WATER SAFE
ULTRAAQUA
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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UV DISINFECTION FOR INDUSTRIAL WASTEWATER

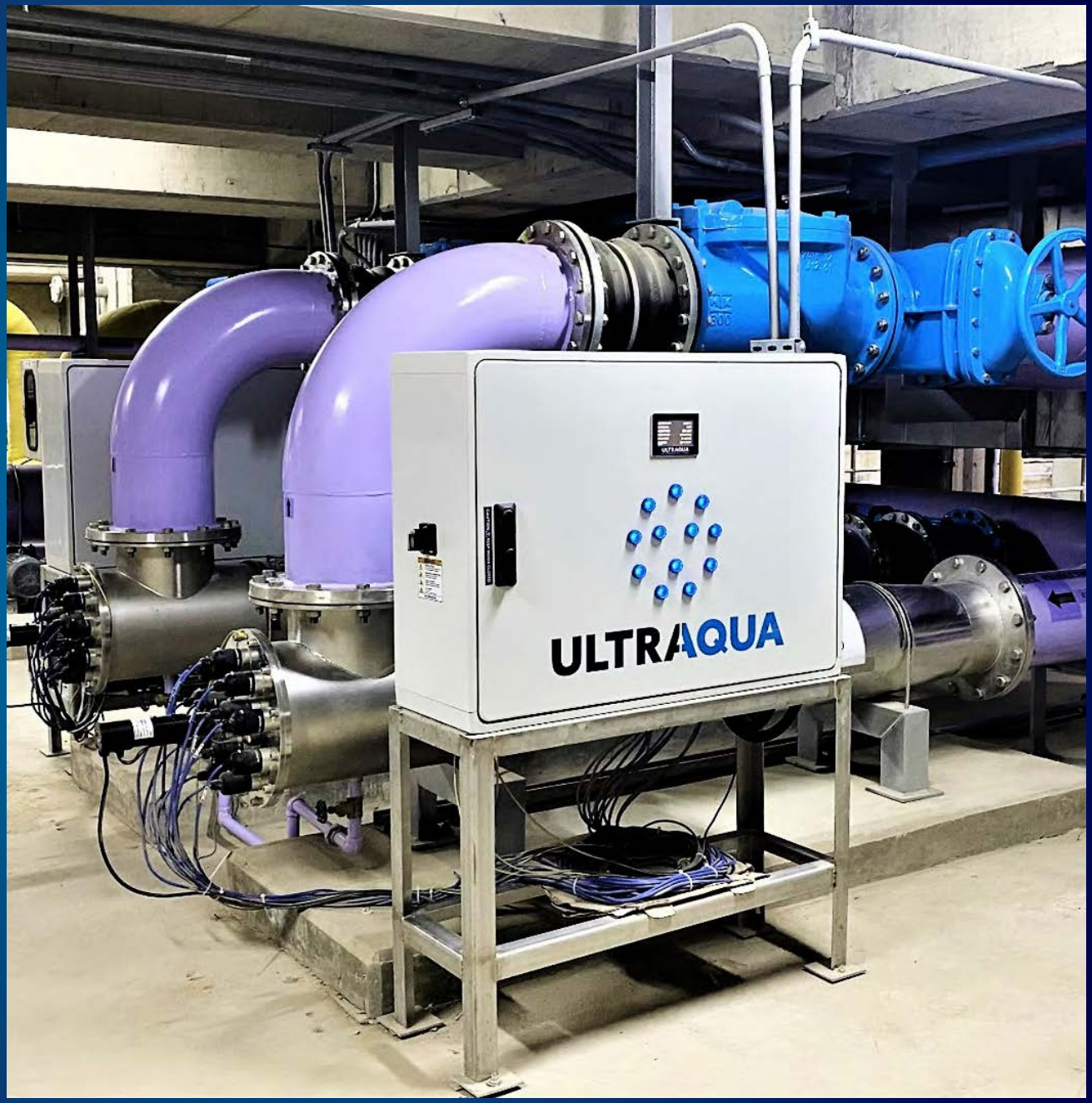
INDUSTRIAL WASTEWATER IS A MAJOR SOURCE OF POTENTIALLY DANGEROUS CONTAMINATION.

In order to protect the natural environment, such as rivers, lakes, beaches, and coastal areas, increasingly strict regulations have been implemented to limit the release of pathogenic microorganisms which originates from industrial discharge. This has led many large-scale manufacturing facilities to implement UV systems as a part of their wastewater treatment processes.

One of the main reasons that make ultraviolet disinfection the preferred solution compared to its alternatives is that it doesn't create any chemical by-products. This is exceptionally important as discharge water is often already filled with toxic chemicals. Additionally, UV disinfection is the most efficient solution against virtually all known pathogenic bacteria and viruses, as well as chemically complex compounds.

By utilizing standard UV disinfection or advanced solutions such as Advanced Oxidation Processes (AOP), ULTRAAQUA enables companies to re-use their process water, leading to optimized operational costs with minimal environmental impact.

ULTRAAQUA has over 20 years of experience in treating discharge water, with a wide product portfolio to accommodate the exact requirements. Options for de-chlorination, de-ozonation, and TOC removal are also available, suitable for a wide range of infrastructures.



MEXICO, CHIHUAHUA

WASTEWATER TREATMENT PLANT UTILIZING UV TECHNOLOGY TO REDUCE CHLORINE RELATED ISSUES.

FINLAND, BLOMINMÄKI

NEW UNDERGROUND WASTEWATER TREATMENT PLANT TO PROCESS THE WASTEWATER OF 400.000 RESIDENTS.

THAILAND, HAT YAI

SUSTAINABLE WASTEWATER DISINFECTION TO PROTECT THE HEALTH OF THE LOCAL POPULATION AND AQUATIC LIFE.

See more cases: www.ultraaqua.com/cases

HOSPITAL WASTEWATER TREATMENT IN DENMARK

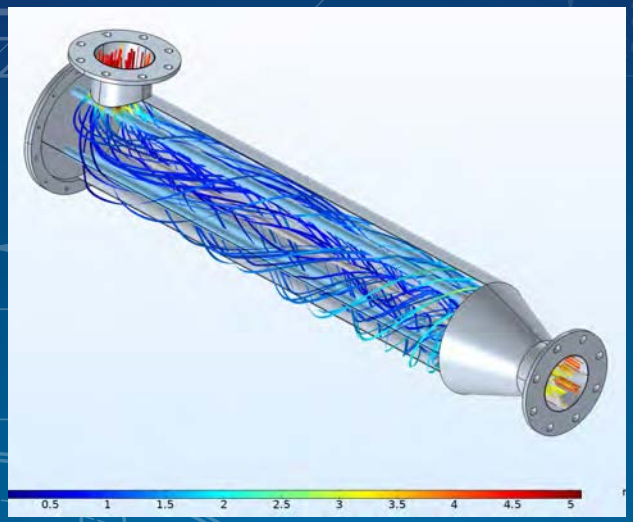
ULTRAAQUA WAS INVOLVED IN THE OPI-COLLABORATION (PUBLIC-PRIVATE INNOVATION), BEING AN IDEAL PARTNER IN UTILIZING THE NEWEST MODERN TECHNOLOGY FOR VALUABLE INNOVATION.

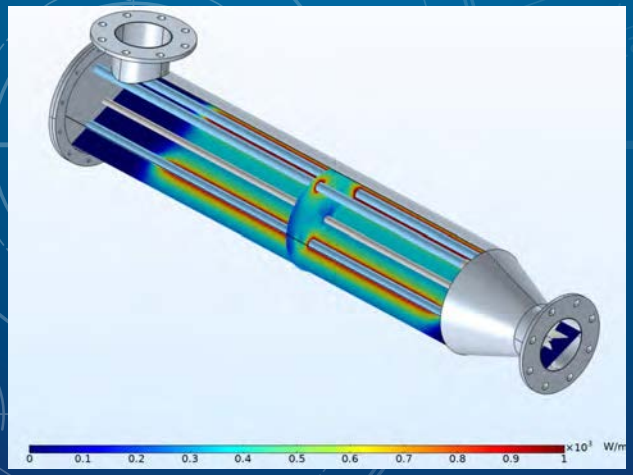
By establishing a wastewater treatment facility at the Herlev Hospital, the hospital has become able to treat 190.000 m3 of wastewater every year, filled with drug remains and bacteria.

The hospital will thus become able to relieve the local wastewater treatment works of huge amounts of wastewater, which could otherwise have serious consequences for the natural environment.

The key difference between this water treatment facility and normal water treatment plants is in the last step of the process, where the water is being treated with active carbon, UV, and ozone respectively.

ULTRAAQUA is continuously participating in innovative sustainability projects led by the R&D department, constantly seeking to utilize the full potential of UV technology.





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.

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.

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.

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.

ETV

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

Veterinærinstituttet
Norwegian Veterinary Institute

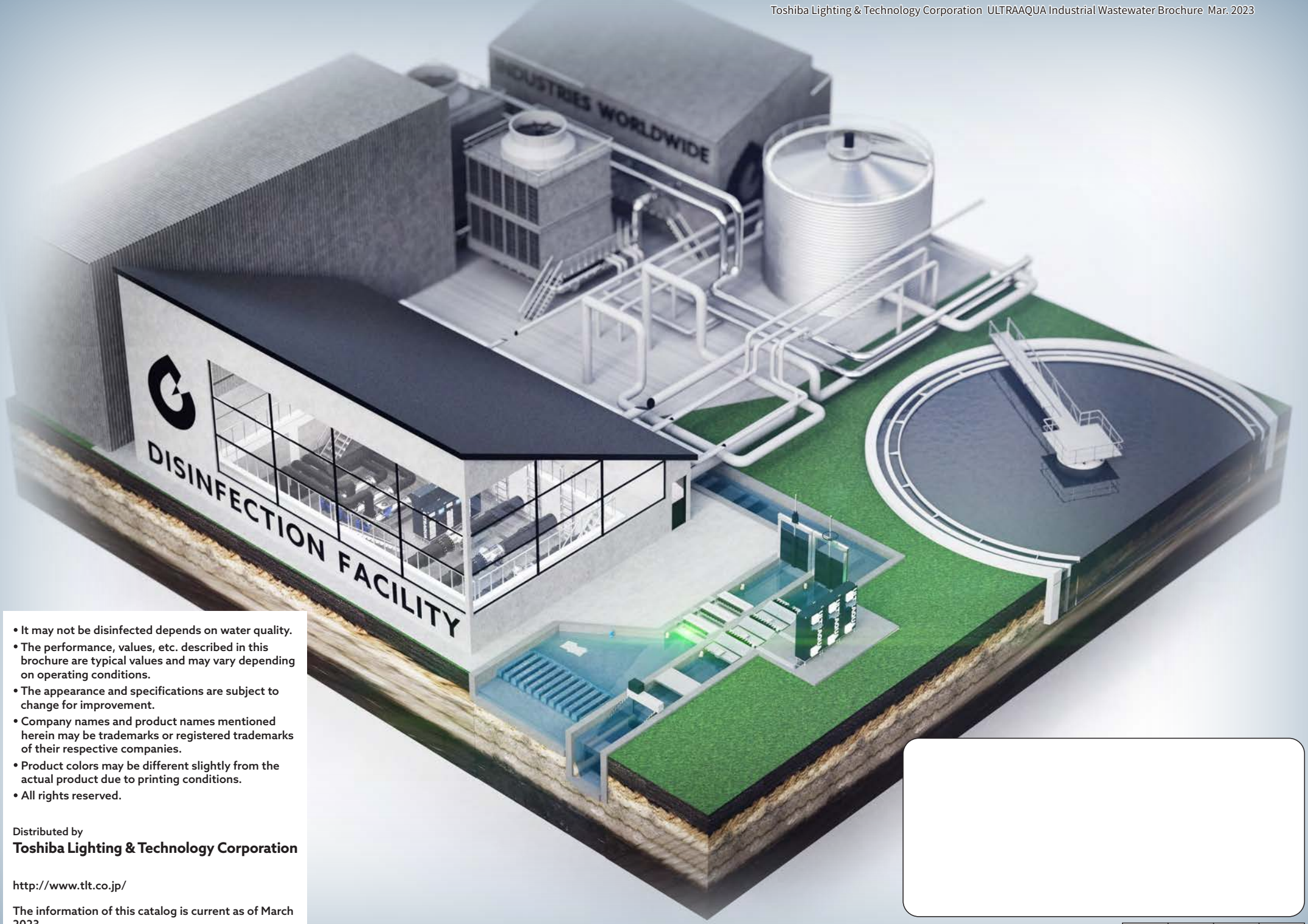
The **Norwegian Veterinary Institute (NVI)** is the national leading center of expertise in biosecurity for fish and land animals. The ULTRABARRIER™ series has been officially approved by the NVI for intake water disinfection in the Norwegian aquaculture industry.

ULTRAQUA
UV DISINFECTION SYSTEMS

PRODUCT OVERVIEW FOR INDUSTRIAL WASTEWATER

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

	OPEN CHANNEL SYSTEMS (SS)	INCLINED OPEN CHANNEL SYSTEMS (SS)	LUVT LOW UVT	TOC VUV SYSTEMS	ULTRATRON™
UV FUNCTION / APPLICATION	DISINFECTION			TOC DEGRADATION	DISINFECTION / DE-OZONATION / DE-CHLORINATION / AOP
LAMP TECHNOLOGY	LOW PRESSURE				MEDIUM PRESSURE
LAMP LIFETIME	16.000 HOURS			12.000 HOURS	9.000 HOURS
REACTOR CONFIGURATION	OPEN CHANNEL - VERTICAL	OPEN CHANNEL - INCLINED	L SHAPE	L SHAPE	INLINE
FLOW CAPACITY (SINGLE UNIT ONLY)	5 M3/H (22 GPM) – 16.000 M3/H (100 MGD)		5 M3/H (22 GPM) – 6.000 M3/H (38 MGD)	1 M3/H (4 GPM) – 500 M3/H (3,17 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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