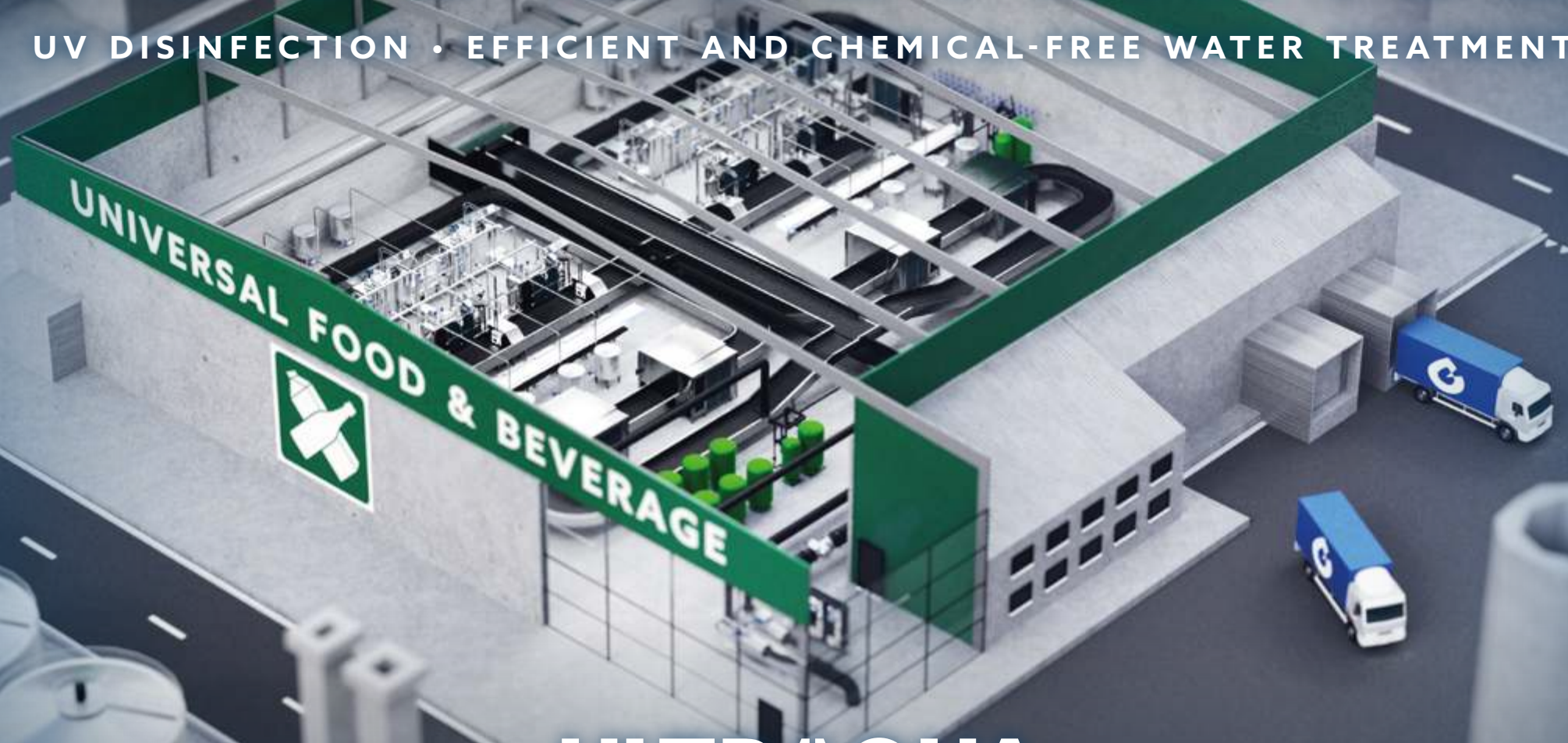


FOOD & BEVERAGE

UV DISINFECTION • EFFICIENT AND CHEMICAL-FREE WATER TREATMENT



ULTRAQUA
UV DISINFECTION SYSTEMS

WE PROTECT YOUR MOST VALUABLE RESOURCE

A microscopic view of various bacteria and viruses, rendered in a blue monochrome style. The image shows several spherical viruses with spiky surfaces and numerous oval-shaped bacteria, some with internal structures visible. The background is a deep blue with a subtle grid pattern.

KEEP YOUR WATER SAFE

ULTRAQUA
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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.

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FOOD & BEVERAGE UV DISINFECTION

WATER IS A CRUCIAL PART OF ANY FOOD AND BEVERAGE PRODUCTION PROCESS, HAVING A VITAL IMPACT ON THE SHELF LIFE AND OVER-ALL QUALITY OF THE FINAL PRODUCT.

The microorganisms in the water have a major impact on this, which can potentially cause significant economic losses. This makes high-quality water a necessity, which must be consistently available in the production process, to ensure product reliability and quality.

The availability of a trustworthy and consistent source of water is required to provide consistent standards. This makes the utilization of UV treatment a key part of the treatment process towards ensuring ultra-pure water.

Including UV disinfection in the treatment process makes it possible to meet the strictest requirements regarding bacteria and virus protection in the water. Additionally, the key water properties such as temperate, pH and oxygen levels remain unchanged, as well as avoiding any chemical by-products.

ULTRAQUA 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 clean production water.

UV systems are available for a wide range of food & beverage applications such as low UVT sugar liquid, brine disinfection, dechlorination, and deaerated water.

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ARDO-FRIGODAN, DENMARK

RECYCLED PROCESS WATER IN THE PRODUCTION OF FROZEN VEGETABLES.



PEPSI PLANT, MIDDLE EAST

MR1-220SS SYSTEM IN IRAN.



SOFT DRINKS, CUBA

MR12-220SS ULU UV SYSTEM FOR 20% UVT LIQUID.



RE-USE OF PROCESS WATER IN A DANISH CARLSBERG BREWERY

AS PART OF DRIP (DANISH PARTNERSHIP FOR RESOURCE AND WATER-EFFICIENT INDUSTRIAL FOOD PRODUCTION), ULTRAAQUA HAS BEEN INVOLVED IN CREATING THE FUTURE OF BEER BREWERIES, THROUGH THE UTILIZATION OF AOP (ADVANCED OXIDATION PROCESS) SYSTEMS.

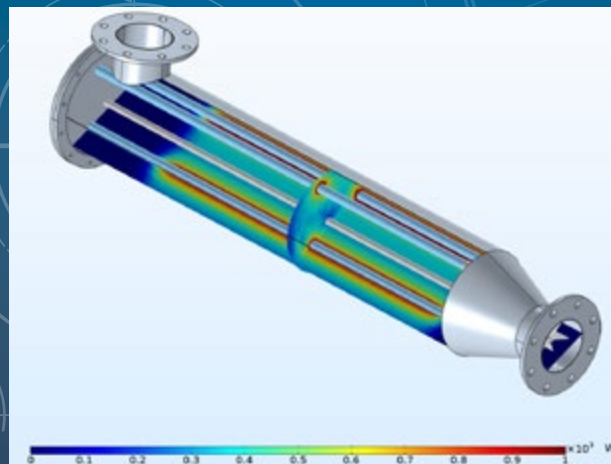
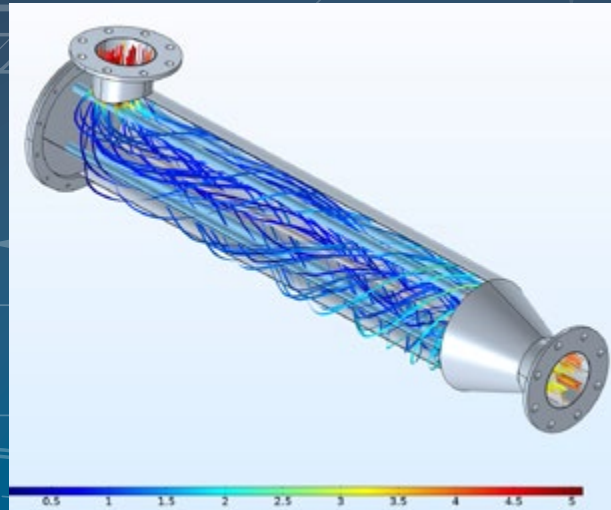
This will allow Carlsberg to re-use 90% of its process water and save 10% more energy, cutting the total water use in half – from 2.9 hl of water to 1.4 hl of water per hl of beer.

Employing AOP processes has become an increasingly favored solution due to its effectiveness in applications that require a high level of security and sanitation.

More specifically, comprehensive experiments were conducted through advanced integrated CFD modeling. This data was used to design a UV-based AOP reactor, stabilizing chemical and microbiological water quality, delaying aftergrowth potential before storage and reuse. AOP will act as the last treatment step of the entire plant before being able to reuse the water.

The initiative has made Carlsberg's Fredericia brewery the first in the world to nearly eliminate water waste, placing Carlsberg above its 2030 sustainability targets.





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 alter and adjust any standard UV system to accommodate the 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 flow 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.

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.

ULTRAAQUA
UV DISINFECTION SYSTEMS

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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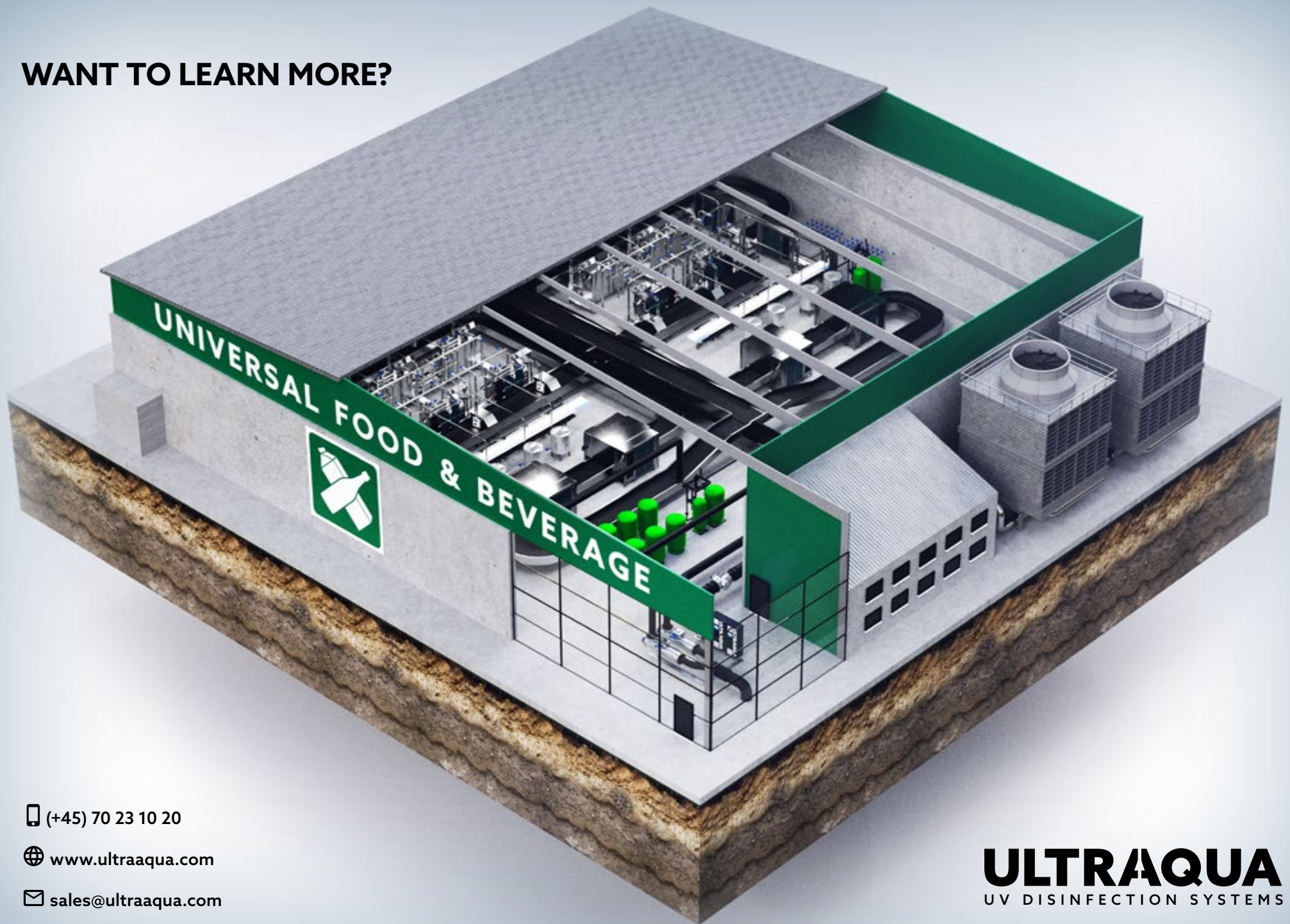
PRODUCT OVERVIEW FOR FOOD & BEVERAGE

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



	MONORAY™	NON-CORROSIVE SYSTEMS	ULTRALOW ULU SYSTEMS	TOC VUV SYSTEMS	ULTRATRON™
UV FUNCTION	Disinfection/ Photocatalytic/AOP	Disinfection	Disinfection/ Photocatalytic/AOP	Disinfection/ Photocatalytic/AOP	Validated disinfection/ Photocatalytic/AOP
LAMP TECHNOLOGY	Low Pressure High Output				Medium Pressure
GUARANTEED LAMP LIFETIME	16.000 hours			12.000 hours	9.000 hours
EXPECTED LAMP LIFETIME	16.000 - 20.000 hours			12.000 - 15.000 hours	9.000 - 12.000 hours
REACTOR CONFIGURATION	U, L & Z shape				Inline
FLOW CAPACITY (SINGLE UNIT ONLY)	5 m ³ /h (22 GPM) – 6.000 m ³ /h (38 MGD)	5 m ³ /h (22 GPM) – 6.000 m ³ /h (38 MGD)	0,5 m ³ /h (2 GPM) – 200 m ³ /h (1,26 MGD)	1 m ³ /h (4 GPM) – 500 m ³ /h (3,17 MGD)	11 m ³ /h (50 GPM) – 8.000 m ³ /h (50,7 MGD)

WANT TO LEARN MORE?



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