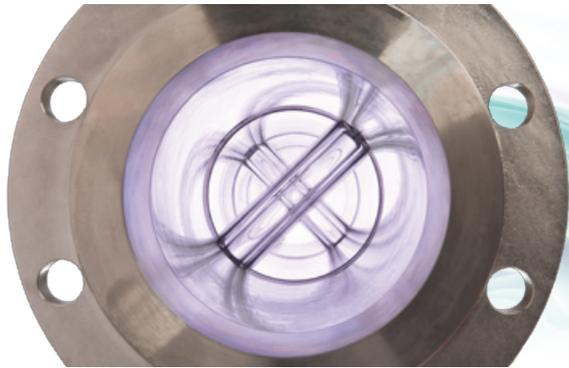




# Disinfect Your Water with Light

**Only Medium Pressure does more for less!**

# Next-Generation UV Water Disinfection



## Facts about Atlantium Hydro-Optic solutions

- Fiber Optic technology recycles UV light/energy
- Proven validated uniform dose delivery
- Medium Pressure broad-spectrum UV: more impact with half the dose
- Green solution: high-grade water disinfection with no chemicals and without disinfection by-products
- Sustainable: replaces chemicals in certain applications
- Effective whether the water is hot or cold
- Integrated software for customized control and real-time monitoring
- User-friendly integration with plant controls
- True in-line system with small footprint



## Testimonial from Major European Brewery

“ The decision to disinfect water was prompted by fluctuations in the quality of the incoming water, for which up to 80 CFU/ml were recorded for each water sample analyzed. Although this lies within the allowable range stipulated by the regulations governing drinking water in Europe, the water was not deemed to be of acceptable quality by the brewery.

Atlantium was chosen due to a very positive referral from a trusted brewery. Additionally, UV technology offers the opportunity to treat water without using chemicals. Since the Atlantium units have been in operation, no more than 2-3 CFU/ml have been found in the samples collected. This alone has convinced the brewery of the effectiveness of the system. ”

## Maximized UV Efficiency

Atlantium patented Hydro-Optic UV technology uses polychromatic medium pressure UV light that leverages the entire UV germicidal spectrum to **inactivate and destroy microorganisms**. Fiber optic and hydraulic mechanics optimize UV energy efficiency, enabling uniform UV dose distribution for completely safe water.

## Real Time Monitoring & Control

Fully automated and engineered for efficiency, Atlantium's award-winning solution has **integrated sophisticated software** for real-time monitoring and control - so you know the water safety status and what UV dose you're getting all the time.



# Protects Your Brand while Reducing Costs

Atlantium's Hydro-Optic system is a green solution with no chemicals that delivers field-proven UV disinfection for brewery applications. The system's unique technology recycles the UV light for optimized sustainability and cost savings.

## Brewery Applications

### High Gravity Water Disinfection (Water for Dilution)

Atlantium's system treats the water added to the brew water just before bottling. It is crucial that this water is uncontaminated with no residual taste or odor, and Atlantium's solution **guarantees water safety without chemicals and without disinfection by-products.**

### Brew Water

Atlantium's system **inactivates even highly resistant microorganisms that spoil beer production**, and protects brew water from contamination.

The Medium Pressure UV lamps operate effectively in high and low water temperatures and ensure high quality water on demand for the brewing process.

### Chlorine Replacement

Atlantium's system provides a **chemical-free alternative to chlorine for treating source water.** It easily inactivates microorganisms including chlorine-resistant pseudomonas, cryptosporidium and giardia, without carcinogenic or other regulated disinfection by-products. It inactivates viruses and heat resistant spores too.

### Post Active Carbon

Carbon is a breeding ground for bacteria prone to bio-fouling and, without heavy maintenance, subject to costly breakthroughs.

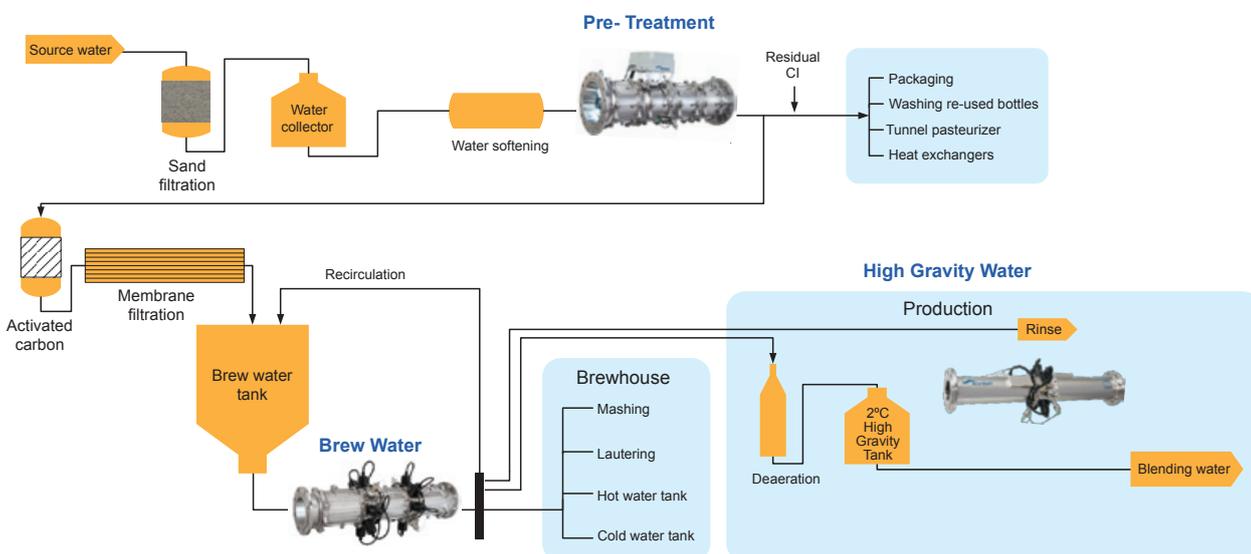
An Atlantium unit installed immediately after the carbon filter **protects against breakthroughs and reduces contamination caused by bio-fouling downstream**, so that there is less demand for frequent and aggressive cleaning.

### Process Water Disinfection

Atlantium's system enables high microbial inactivation without the use of chemicals, for use in rinse and CIP applications. It **achieves high log reductions** and is particularly effective against chlorine-resistant pseudomonas, cryptosporidium and giardia.

The system **operates equally effectively for cold or hot water** regardless of pH, and can be installed anywhere along the production line.

## Typical Brewery Installation



# Total Kill of Major Microbial Threats to Beer

## Results of Study: Eliminating Beer-Spoiling Bacteria

Large-scale tests were conducted by Dr.-Ing.Gerrit Blumelhuber of the Doemens Academy GmbH, Grafelfing, Bavaria, Germany, using Atlantium's one-lamp model RZ163-11 system. Suspensions of *Escherichia coli*, *Saccharomyces cerevisiae carlsbergensis* and *Lactobacillus casei* organisms were prepared and continuously dosed into a stream of sterile water entering the unit.

Microorganism	Flow rate (m³/h)	Lamp intensity (%)	UVT (%)	Calculated dose (mJ/cm²)	Volume of sample analyzed (ml)	Colony count at inlet (CFU/l)	Colony count at outlet (CFU/l)	Log reduction
<i>Lactobacillus casei</i>	49.5	100	92.4	99.5	1000	2,500	0	3.4
<i>Escherichia coli</i>	49.5	100	94.9	143.1	1000	2.2*10 <sup>7</sup>	0	7.1
<i>Saccharomyces cerevisiae</i>	49.5	100	94.15	127.1	1000	2.5*10 <sup>6</sup>	0	6.4

The results show the effectiveness of Atlantium's system against all three of the microorganisms that threaten brewery product integrity.

## Easy to Integrate, Easy to Use, Easy to Maintain

### Easily Integrates with Plant Controls

- o True in-line system.
- o Unit synchronizes with facility processes.
- o Option for remote monitoring.

### Fully Automated Dose Control

- o Continuous real-time monitoring.
- o Maintains correct dose for total microbial inactivation.

### Electronic Tracking & Reporting

- o Data logging system enables traceability of key data.

### Minimum Down Time

- o Short UV lamps for quick & easy lamp replacement.

### Robust Protection

- o Thick quartz tube protects the lamp and avoids broken glass and mercury in the disinfection water chamber.

### Meets Regulatory Requirements

- o Atlantium's Hydro-Optic system meets the most stringent regulatory requirements, assuring the reliability you need to protect your brand.

### About Atlantium

Atlantium Technologies Ltd., founded in 2003, provides water-dependent industries such as food & beverage, dairy, pharmaceutical and aquaculture, as well as municipalities, with UV (ultraviolet) based treatment to meet the growing need for safe water.

The company's cost-effective and environmentally-friendly Hydro-Optic™ solutions deliver unprecedented microbial inactivation, taking water safety to levels never before achieved with other UV systems.

Atlantium's Hydro-Optic system is field proven and validated to the highest regulatory standards including EPA, FDA and PMO.

The company has an international customer base with installations all over the world.



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