

## HOD™ UV

### Delivering Pure Performance in Breweries

#### Keeps Brewery Production in Full Flow

Leading breweries use HOD™ (Hydro-Optic Disinfection) UV treatment to disinfect water and eliminate beer-spoiling bacteria without affecting the taste and flavor profiles.

Atlantium HOD UV systems effectively inactivate pathogens – while still being environmentally friendly, cost-effective, and not introducing any disinfection by-products. This is achieved by combining ultraviolet water disinfection technology with hydraulic and optic principles. The HOD UV system features the unique Total Internal Reflection (TIR) technology that recycles UV light energy, ensures homogenous UV dose distribution, provides superior power (kW) efficiency compared to traditional UV, and achieves unprecedented micro-organism inactivation.

#### Why Choose HOD UV?

- Powerful** – Medium pressure broad spectrum UV delivers more impact with lower energy
- Reliable** – Proven, validated uniform dose delivery
- Sustainable & Green** – High-grade, chemical-free water disinfection with no byproducts
- Effective** – Operates in both hot and cold water
- Easy to Operate** – Smooth integration with plant controls
- Compact** – In-line system with a small footprint

#### Real Time Monitoring & Control

Fully automated and engineered for efficiency, Atlantium's solution has integrated sophisticated software for real-time monitoring and control – providing real time information of mission critical parameters to ensure water safety.



#### Clear Confidence with HOD UV

💡 The decision to disinfect water was prompted by fluctuations in the quality of the incoming water, for which up to 800 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. ”

(Major European Brewery)

# HOD UV Applications for Breweries

## Water for Dilution

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.

Atlantium's solution guarantees water safety without chemicals and without disinfection by-products.

## Brew Water

Inactivates even highly resistant microorganisms that may spoil beer production.

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 Carbon Filter

Carbon is a breeding ground for bacteria and without heavy maintenance, subject to costly breakthroughs. Installing Atlantium HOD UV immediately after the carbon filter protects against microbial breakthroughs and reduces risk of downstream contamination so that there is less demand for frequent and aggressive cleaning.

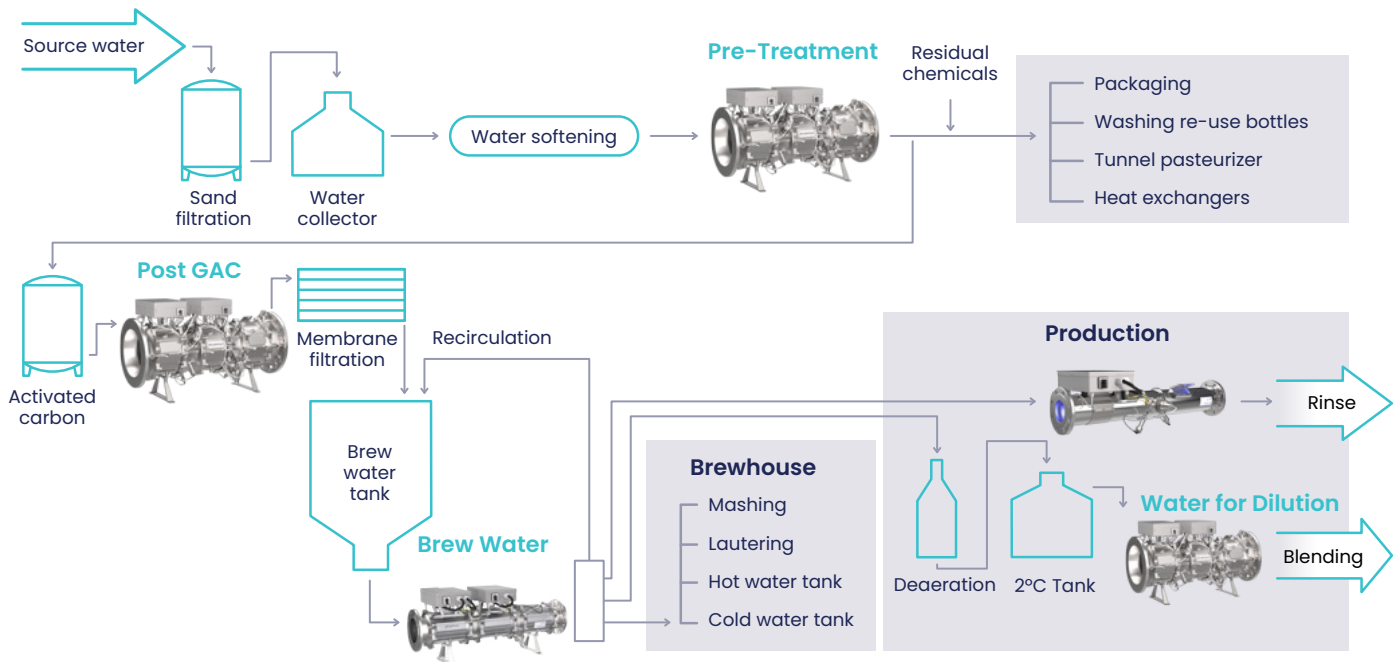
## Utility Water Disinfection

Enables high microbial inactivation without the use of chemicals, for use in rinse and CIP applications. It 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.

## Simple Syrup Protection

Atlantium's distinctly different solution for simple syrup protection simply works. HOD UV protects simple syrup from heat-resistant microorganisms without the risk of changes in taste or odor.

## Brewery Production Process



# 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 HOD UV RZ Series.

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. For all trials flow rate was 50 m<sup>3</sup>/hr and 1000ml samples were collected



Microorganism	Colony count at inlet (CFU/l)	Colony count at outlet (CFU/l)	Log reduction
<i>Lactobacillus casei</i>	2,500	0	3.4
<i>Escherichia coli</i>	2.2*10 <sup>7</sup>	0	7.1
<i>Saccharomyces cerevisiae</i>	2.5*10 <sup>6</sup>	0	6.4

## Easy to Integrate, Use & Maintain

### Easily Integrates with Plant Controls

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

### Fully Automated Dose Control

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

### Electronic Tracking & Reporting

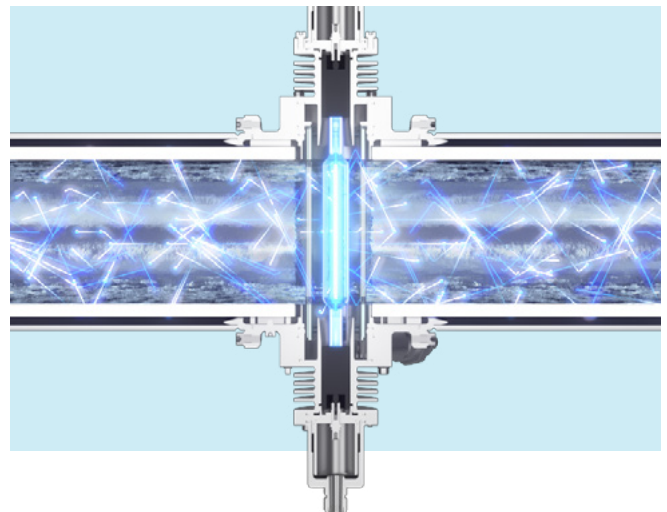
- Data logging system enables traceability of key data

### Minimum Downtime

- Short UV lamps for quick and easy lamp replacement

### Robust Protection

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



### Meets Regulatory Requirements

Atlantium's HOD UV system meets the most stringent regulatory requirements, ensuring the reliability you need to protect your brand.