



## HOD™ UV for Ozone Destruction

Ozone ( $O_3$ ) is a widely used oxidizing agent in water treatment systems, valued for its ability to disinfect and oxidize organic contaminants effectively. However, residual ozone in water can lead to significant challenges, including corrosion of equipment, disruption of downstream processes, and increased operational risks. Effective ozone destruction is essential to maintain water quality, protect sensitive infrastructure, and ensure compliance with safety and environmental standards.

Traditional methods for ozone removal, such as chemical neutralization, often come with drawbacks, including high costs, handling complexities, and potential environmental impacts. Industries require a solution that is precise, reliable, and environmentally responsible.

Atlantium Technologies' HOD™ (Hydro-Optic Disinfection) UV technology provides a robust and scientifically validated approach to ozone destruction. This chemical-free method harnesses the power of UV photolysis to break down ozone into harmless oxygen, offering a sustainable and efficient alternative tailored to diverse operational needs.

**Atlantium's HOD UV delivers precision ozone destruction with advanced reactor design, and real-time monitoring, ensuring superior water quality and operational reliability.**

### Key Advantages



#### Efficient Ozone Removal

Achieves complete  $O_3$  destruction with adjusting UV dose.



#### Chemical-Free Process

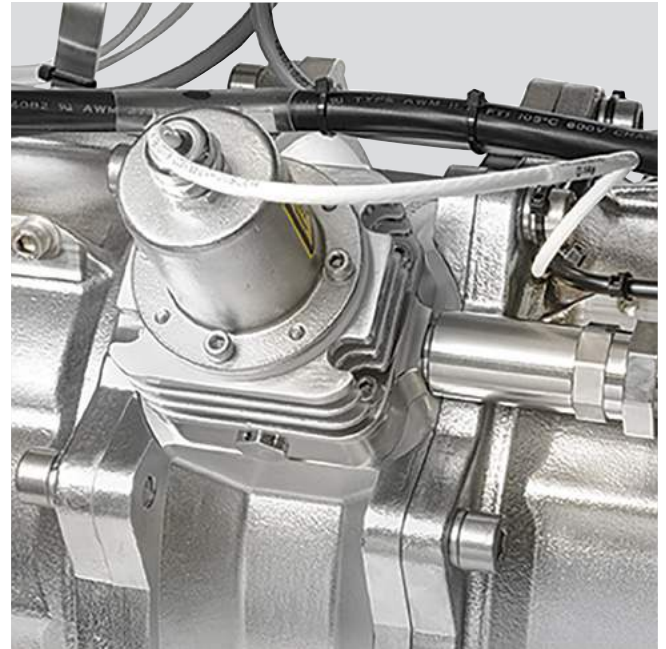
Eliminates the need for chemical additives, reducing costs and environmental impact.



#### Pure Performance

Proven efficiency in diverse applications, supported by third-party validations for high performance.

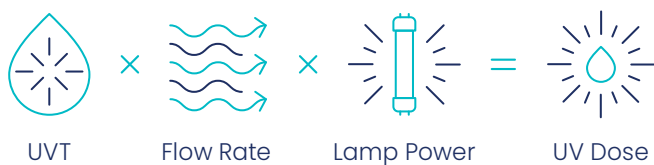
# HOD UV Technology Overview



## Real-Time Monitoring & Response to Changing Water Conditions

The UV Dose depends on three parameters:  
UVT, flow rate, lamp power.

Direct and accurate monitoring of each of these parameters individually is crucial for reliable and accurate UV Dose delivery.



## Integrated Water Quality Monitoring

- Integrated UV transmittance (UVT) sensor on each HOD UV system
- Continuously monitors UVT
- Optimizes system performance for actual, not estimated, UVT levels

## Accurate Lamp Performance Monitoring

- Dedicated lamp output sensor per lamp provides monitoring of each individual lamp's performance
- Ensures delivery of the required UV dose at all times
- Continuous adjustment of lamp power according to changing production variables such as flow rate and water UVT parameters individually is crucial for reliable and accurate UV Dose delivery.





## Real-Time Performance Data

- The most advanced operation module in the market
- Elaborate information about each individual lamp
- Configure output signals, operation modes and alarms
- User-based authorization management system
- Complete integration with control SCADA system

## Superior Power Efficiency

Total Internal Reflection (TIR) uses fiber-optic principles of recycling UV photons in the disinfection chamber to achieve higher UV dose levels with minimum kW consumption.

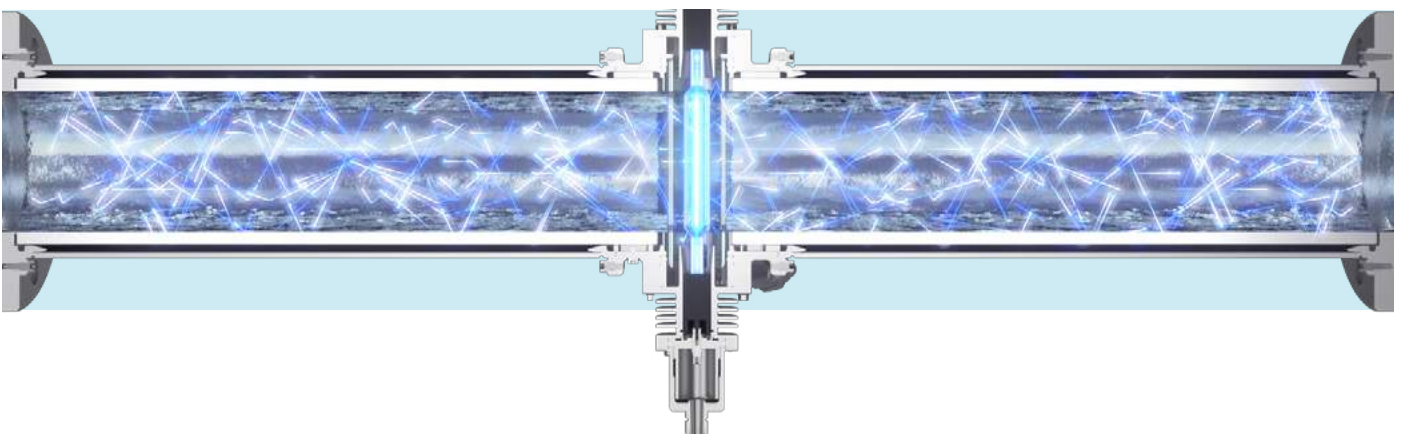
## Medium Pressure Lamps

### The advantage of the wide germicidal wavelength

The spectral sensitivity of microorganisms to wavelengths between 200–400nm is by now an established fact. Low pressure 254nm is too weak and unreliable to provide the required inactivation. Medium pressure lamps emit a broad germicidal spectrum providing complete protection against a wide variety of microorganisms while using minimal amount of lamps.

### Why low amount of lamps is so important?

- Accurate monitoring (enables a sensor per lamp)
- Reduced maintenance
- Recycles UV light energy using Total Internal Reflection (TIR)
- Offers most advanced system geometry with optimized hydraulic and optics
- Ensures homogenous UV dose distribution







HOD UV quartz sleeve (left) vs. conventional UV sleeve: due to the robustness and durability of the HOD sleeve no periodical replacement is needed



## No Quartz Sleeve Replacement

The HOD UV systems use a high grade silica quartz sleeve five times thicker than those used in conventional UV systems, and does not require periodical replacement.

## Quick and Easy Lamp Replacement

Lamp replacement does not require draining the system or depressurization and can be safely performed during system operation!

## Modular Design Enables Maximum Flexibility

HOD UV systems' core "building blocks" include a lamp and pipe section and independent ballast unit. Sections are added together according to the application and desired UV dose. Each section can operate independently from the rest of the sections.

This unique configuration allows for maximum flexibility in sizing, maintenance and operation:

- Overcomes space and head-loss limitations
- Allows for lamp replacement while system is in operation
- Increase capacity by adding more sections; no need to replace entire system

