ATLANTIUM

Application Brief

Enhancing Hospital Water Treatment Processes with HOD™ UV Disinfection

Delivering chemical-free water disinfection for hospitals

Hospitals serve patients and visitors with weakened or sensitive immune systems, making water quality and pathogen control especially critical. While municipal water is generally safe for the public, it is not always sufficient to control opportunistic pathogens within complex hospital plumbing networks and hot-water loops.

To manage risk, particularly Legionella, facilities often rely on chemical dosing and periodic high-temperature flushing ("heat shock") cycles. These approaches can be operationally complex, energy-intensive, and difficult to maintain consistently across large systems.

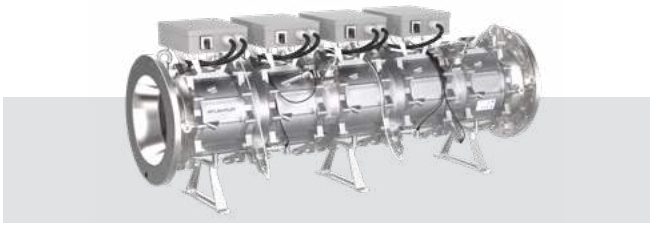
Atlantium's HOD™ (Hydro-Optic Disinfection) UV technology adds a robust, chemical-free disinfection barrier that enhances water biosecurity across critical hospital systems, helping reduce Legionella and other waterborne pathogens while supporting safe, efficient operations.

HOD UV improves safety and efficiency in:

- Cooling towers
- Potable water systems
- Hot water distribution systems

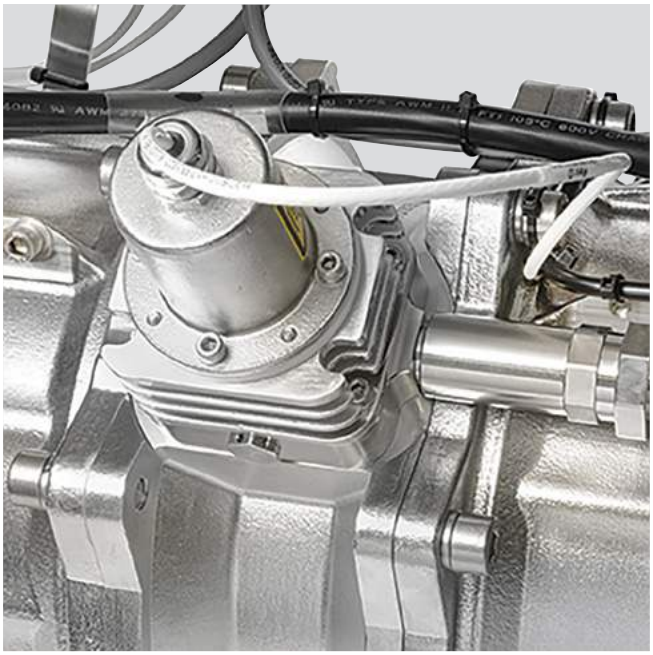
Why HOD UV?

- Fully validated to EPA regulatory standards, accredited for: 4-log virus inactivation & 5-log microbial inactivation
- Legionella risk reduction for high-risk water systems, with proven experience in cooling towers and hot water loops
- Supports automated operation for ease of use
- Delivers reliable disinfection for pathogens, including SARS-CoV-2
- Provides compliance reporting, ensuring adherence to health and safety standards



Sheba Medical Center, Ramat Gan

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.

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.

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

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

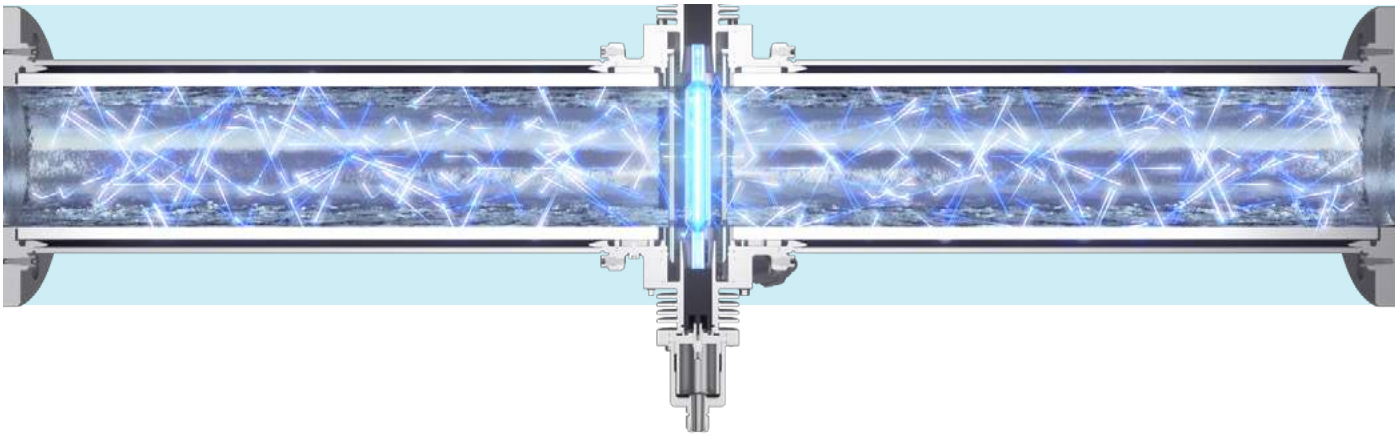
The advantage of the wide germicidal wavelength

The spectral sensitivity of microorganisms to wavelengths between 200-400nm is by now an established fact.

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

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

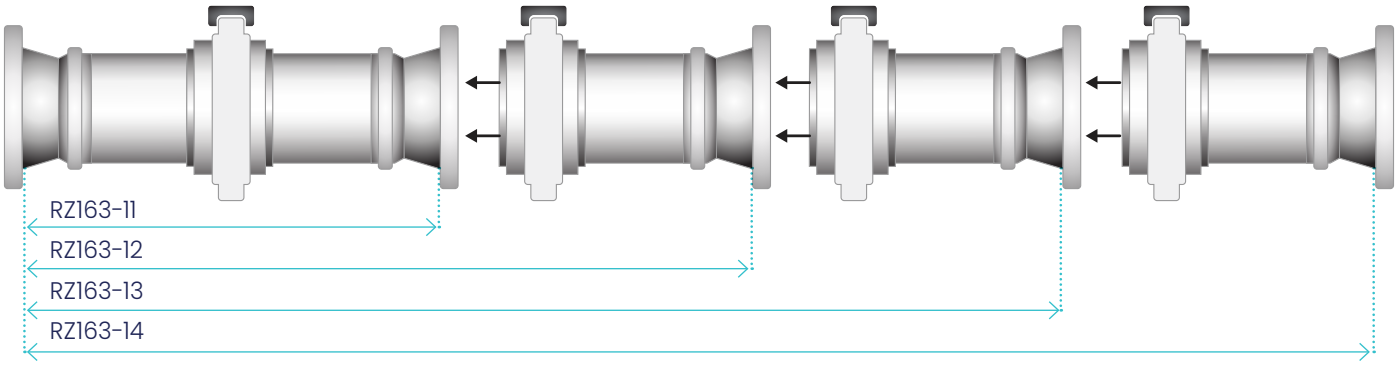
Lamp replacement does not require draining the system or depressurization and can be safely performed during system operation!

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



271125

info@atlantium.com | atlantium.com