ATLANTIUM

Application Brief

HOD™ (Hydro-Optic Disinfection) UV Water Treatment for Bottled Water

The ultimate, chemical-free barrier for bottlers

In the bottled water industry, optimizing resource utilization is crucial.

Atlantium HOD UV technology guarantees process control and water safety without the use of chemicals; as a result, there is no residual taste or odor to affect product flavor. HOD UV provides complete protection against a wide variety of microorganisms, ensuring pure performance.

HOD UV provides effective disinfection and biofouling control enabled by its unique engineering and comprehensive monitoring & control based on its dual sensor configuration. The HOD UV has a complete integration with control SCADA system.

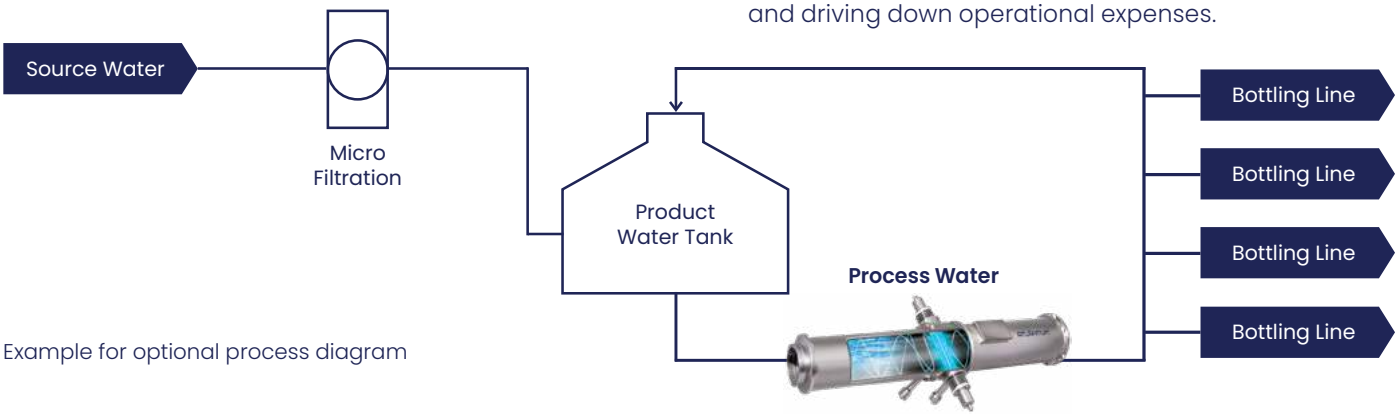
Key benefits using HOD UV:

For more than two decades, and with thousands of full-scale installations for leading brands in various industries globally, Atlantium Technologies has helped to ensure water safety with its innovative HOD UV technology and approach to performance, monitoring, and control.

Minimizing Water to Product Ratio: Decreasing the cost of water and enhancing sustainability efforts.

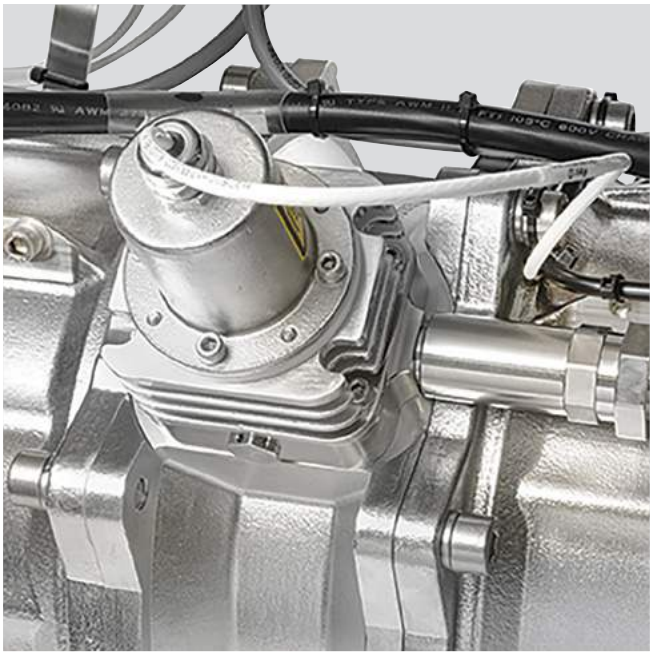
Reducing Chemical Use: HOD UV technology helps bottlers significantly lower their reliance on chemicals, which cuts operating costs and improves environmental impact.

Energy-Efficient, Chemical-Free Water Reuse: HOD UV technology allows efficient & chemical free water reuse , further reducing raw water consumption, and driving down operational expenses.



Example for optional process diagram

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

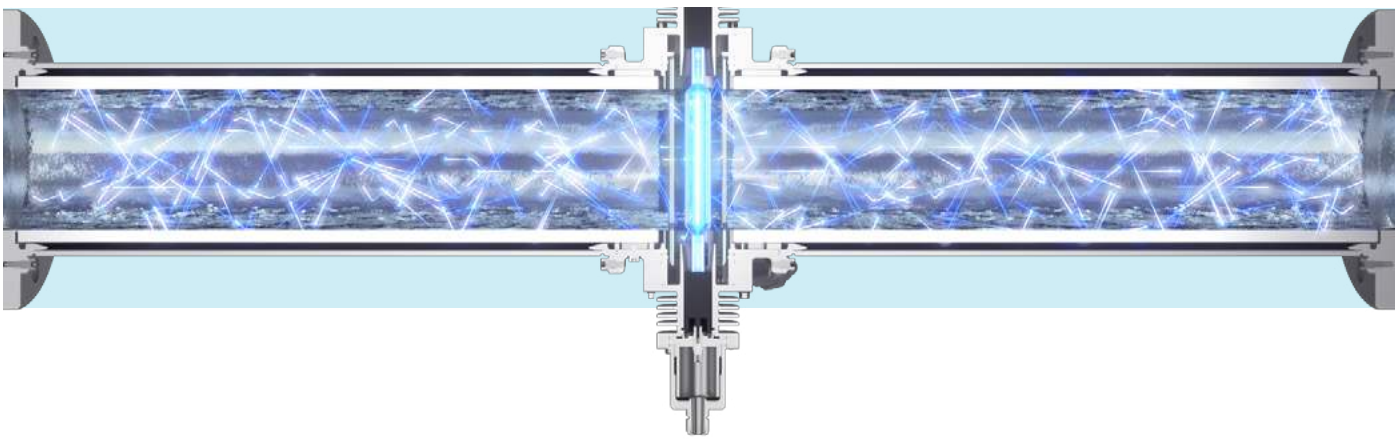
The advantage of the wide germicidal wavelength

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

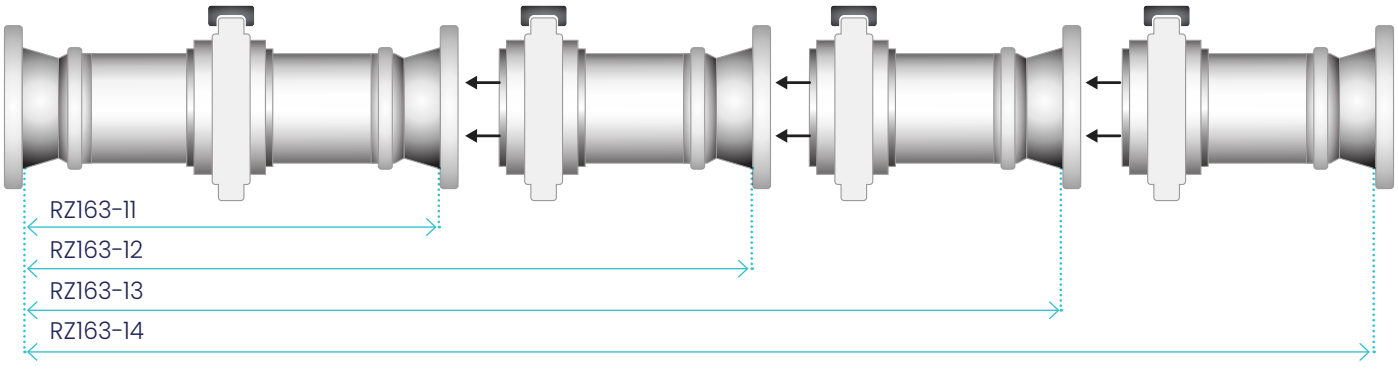
Lamp replacement does not require draining the system or depressurization and can be safely performed during system operation!

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



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