

# HOD™ UV Keeps Oil & Gas Production in Full Flow

## Smarter Water Disinfection for the Oil & Gas Industry

Offshore platforms, onshore fields, and refineries face increasingly complex water treatment challenges. Chemical disinfection, while common, presents multiple operational hazards—including the formation of carcinogenic byproducts, compliance with strict regulatory constraints, and significant risks tied to transportation, storage, and onsite handling. These factors not only raise safety concerns for personnel but also complicate logistics and increase operational costs.

When biocides fail to protect critical water systems and downtime can cost millions, Oil & Gas producers need a smarter, more resilient solution.

Atlantium's HOD™ (Hydro-Optic Disinfection) UV technology delivers pure performance in every drop. It's a chemical-free, EX-certified system built to withstand the harshest onshore, offshore, and refinery conditions. Engineered for safety, sustainability, and compliance, HOD UV offers real-time performance monitoring, enabling producers to cut chemicals, minimize downtime, and reuse water—safely and efficiently.



## HOD UV Solutions for Oil & Gas

Whether protecting production uptime or achieving sustainability targets, HOD UV empowers Oil & Gas operations with a smarter, safer water disinfection alternative—engineered for high performance and built for the world's toughest environments.

With proven 99.999% inactivation of harmful microorganisms, HOD UV targets key operational risks, including:

### Sulfate-Reducing Bacteria (SRB)

Prevents corrosion and formation of Hydrogen Sulfide

### Microbial Induced Corrosion (MIC)

Reduces degradation of pipelines and infrastructure

### Biofouling of UF/RO membranes

Extends membrane life and efficiency

### Legionella and pathogens in cooling tower loops

Enables chemical-free control and operational reliability.

### Key Applications



#### Injection Water Disinfection

Eliminates SRB, MIC, and other microbes



#### UF/RO Membrane Protection

Reduces fouling and prolongs asset life



#### Cooling Tower Disinfection

Enables Legionella control without chemicals

## Reducing Chemical Use. Delivering Pure Performance.



Offshore



Onshore



Refineries

## Injection water disinfection, Delivering MIC related micro-organisms & SRB Inactivation. Onshore and Offshore

Atlantium HOD UV provides safe, convenient disinfection on-demand, without the costs or logistics of transporting, storing, or using chemical biocides.

- Achieves 99.999% (5-log) reduction of Sulfate Reducing Bacteria (SRB)
- Enables multiple reuse cycles – treated water can be reused for additional fracking treatments
- Eliminates the need for chemical biocides to control microbial growth
- Removes the logistical burden of transporting and storing hazardous chemicals, significantly reducing operational complexity, enhancing safety, and lowering total treatment costs
- Delivers proven ROI and sustainability – reduced chemical usage, lower operational costs, improved safety, and minimized environmental impact

### Field Test from Full-Scale Installation – Representing 5-Log Reduction



Results of SRB **before**  
HOD UV represents  
**heavy presence of SRB**

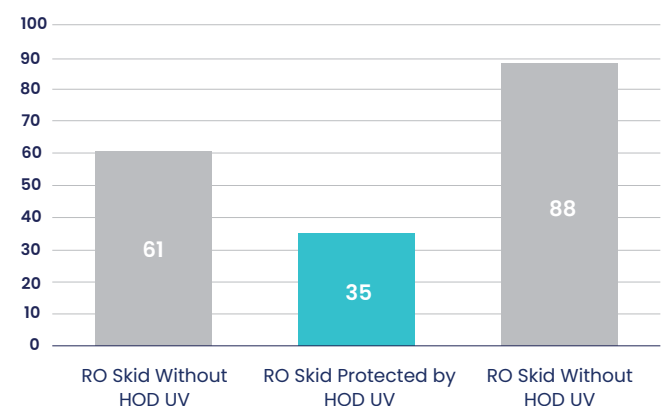
Results of SRB **after**  
HOD UV represents  
**absence of SRB**

## Delivering UF/RO Membrane Protection. Offshore and Refineries

Water in refinery operations is typically of low quality and high cost, making effective pre-treatment essential for membrane longevity and performance.

- Proven chemical-free dechlorination/disinfection pre-RO treatment: Eliminating chlorine and biofouling control
- A complete solution in risk mitigation, providing continuous control
- Environmentally friendly, simple and safe

### Cartridge Filter Replacement, Installation in India



## Delivering Cooling Tower Water Disinfection. Refineries

Water used in refinery cooling towers is a costly and challenging resource, often with low UVT and high fouling potential—demanding reliable and efficient treatment.

- Legionella control & blowdown discharge
- Less chemical consumption
- Extending the duration between shock treatments
- Less downtime
- Less piping corrosion
- Heat transfer coefficient

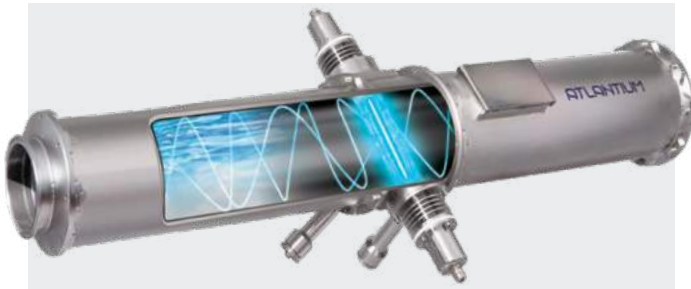
### Bacteria Reduction & Elimination of Legionella, Installation in Bielefeld – Germany

		19 Feb 18	26 Feb 18	5 Mar 18
Legionella [ /100ml]	Before HOD UV	550	100	15
	After HOD UV	0	0	0
	% Reduction	100	100	100
Pseudomonas Aeruginosa [ /100ml]	Before HOD UV	0	50	0
	After HOD UV	0	0	0

# HOD UV Technology

## How Does it Work?

The HOD UV system features the unique Total Internal Reflection (TIR) technology that recycles UV light energy, ensures homogenous UV dose distribution and provides superior power (kW) efficiency compared to traditional UV.



## Enhanced HOD UV Light

- Medium pressure high-intensity HOD UV lamps enable fewer UV lamps per system
- Medium pressure UV lamps provide a broad germicidal spectrum of polychromatic UV light (200–415 nm)
- Lamps are protected by a quartz sleeve 5 times thicker than conventional quartz sleeves
- Significantly reduced lamp-related maintenance
- Quick and easy lamp replacement, does not require emptying of the water lines or depressurization



## Real-Time 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

## Advanced Control System

- Continuously displays UVT, flow, power and UV dose
- Provides real-time data on operation and efficacy
- Features built-in data logging, up to six months
- Easy integration with the control SCADA system
- Customized with user settings for alarm signals
- Features user-based management with a smart authentication system



## Real-Time Lamp Performance Monitoring

- Dedicated UV sensor for each HOD UV lamp
- Continuously monitors HOD UV lamp output
- Ensures delivery of required UV dose at all times



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\* UL/CSA approval applies to parts supplied by Atlantium, excluding the electrical cabinet supplied by others.

certified to  
NSF/ANSI/CAN 60

ATEX/IECEx zone 1/2\*\*

\*\* Pending