



DRINKING WATER TREATMENT



A Revolutionary Advancement in Drinking Water Disinfection

Specifically designed for small-community applications

UV's environmental and water quality benefits for disinfection of drinking water are proven and embraced by communities large and small. Offering broad-spectrum protection against a wide range of pathogens, including bacteria, viruses and chlorine-resistant protozoa (such as *Cryptosporidium* and *Giardia*), UV is a reliable, cost-effective part of a multi-barrier treatment strategy.

TrojanUVTelos™ (télōs) is the latest evolution of UV for small communities. This advanced system utilizes TrojanUV Solo Lamp™ Technology and TrojanUV Flow Integration (FIN™) hydraulic optimization technology, which leads to low power consumption, uniform UV dose delivery and a low lamp count. With these features, the advantages of TrojanUVTelos are clear – lower life cycle costs, easy maintenance and reduced environmental impact.

As with every TrojanUV system, we have incorporated the latest reliability and safety features. Reducing maintenance requirements and costs while incorporating the most efficient technologies available, the TrojanUVTelos leads the way for small-community drinking water disinfection.

Key Benefits

TrojanUVTelos | télōs |

Low lamp count. High performance. TrojanUV Solo Lamps provide unprecedented cost and maintenance advantages.

Maximum disinfection performance. TrojanUV Flow Integration (FIN) hydraulic optimization technology matches areas of high velocity with higher intensity UV light and low velocity with lower intensity UV light. This maximizes the use of UV photons and ensures a uniform UV dose throughout the chamber.

Globally recognized validation. Validation will be completed in accordance with the DVGW W294 protocol to ensure regulatory compliance regardless of location.

Pre-wired for simple installation. Drivers are attached to the UV chamber to simplify installation complexity, as well as reduce footprint and construction costs.

Sleeve and sensor cleaning. Operator maintenance is reduced, and UV output is maximized by automatic cleaning of both the quartz sleeves and UV intensity sensor window.

Human machine interface (HMI). Full color touchscreen HMI provides comprehensive real-time performance information to operators.

Flexible design and operation. UV chambers are available in a variety of sizes and can be installed vertically or horizontally, making them simple to integrate into any plant design.

Global support. Local service. A comprehensive network of certified service providers offers fast response for spare parts and service.

Guaranteed performance and comprehensive warranty. TrojanUV systems include a Lifetime Disinfection Performance Guarantee.

UV Sensor

Highly accurate, DVGW-approved, photodiode sensor monitors UV output within the chamber. Mounted within the sensor port on the side wall for easy access.

Lamp Driver

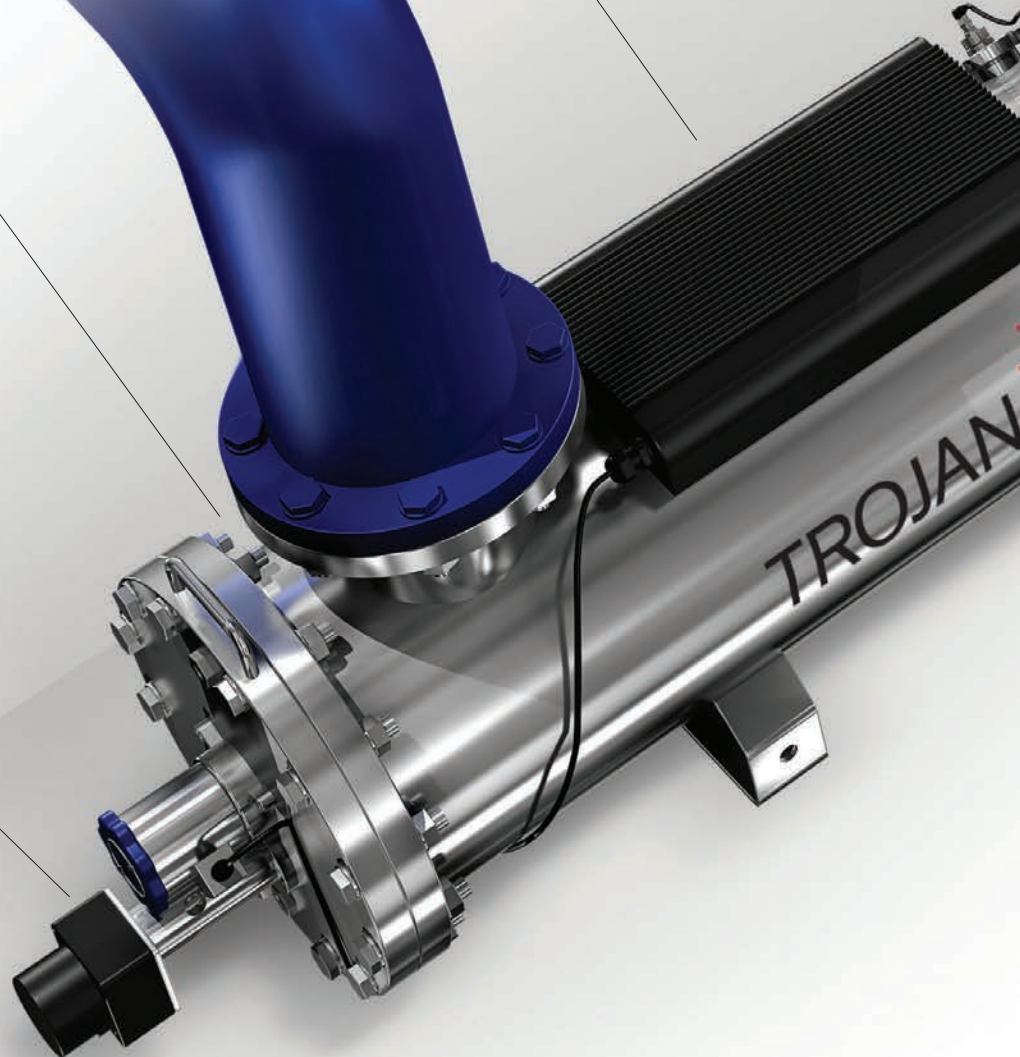
The NEMA 4X (IP66) lamp driver is pre-wired and attached to the UV chamber, shortening lamp cable runs, simplifying installation, and enabling easy operator access.

UV Chamber

Type 316L stainless steel. Chamber rated to 150 PSI (10 BAR) with an optional rating of 232 PSI (16 BAR). A 1/2" drain port is included.

Automatic Sleeve Wiping System (Optional)

Provides automatic cleaning of both the lamp sleeves and the DVGW sensor window installed on the wall of the chamber. Operates while online, without interrupting disinfection. The automatic system allows cleaning at pre-set intervals using a motor-driven wiper assembly.



Operator Interface

The color touchscreen HMI allows local monitoring and control. Operators can quickly view system status, alarms and set-points through the intuitive graphical interface. Can be mounted anywhere, including at the chamber, on the process piping, or on a nearby wall.

TrojanUV Solo Lamp Technology

TrojanUV Solo Lamps are the core of the TrojanUVTelos. With both high UV output and high electrical efficiency, they provide unprecedented cost and maintenance benefits by simultaneously reducing total lamp count and power consumption. Lamps are located within protective quartz sleeves with easy accessibility.



Power Distribution Center (PDC)

Pre-wired and attached to the UV chamber, the PDC is the hub for customer and electrical connections as well as power distribution.

FIN Technology

Patent-pending FIN Technology system matches flow and light field for optimum dose delivery. It maximizes hydraulic efficiency throughout the length of the UV chamber, promoting mixing and increasing overall treatment efficiency.

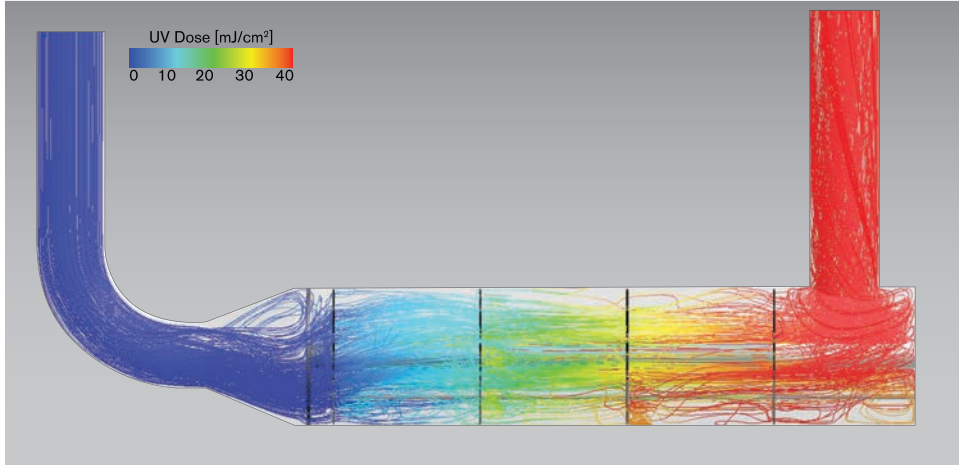
Remote Monitoring & Control

All units feature standard dose pacing, compliance reporting and Supervisory Control and Data Acquisition (SCADA) communication via Modbus, Modbus TCP/IP, EtherNet/IP and PROFINET. Additionally, interface screens can be accessed remotely using a standard internet browser via a workstation, tablet or smartphone.

Ground-Breaking Flow Integration (FIN) Technology

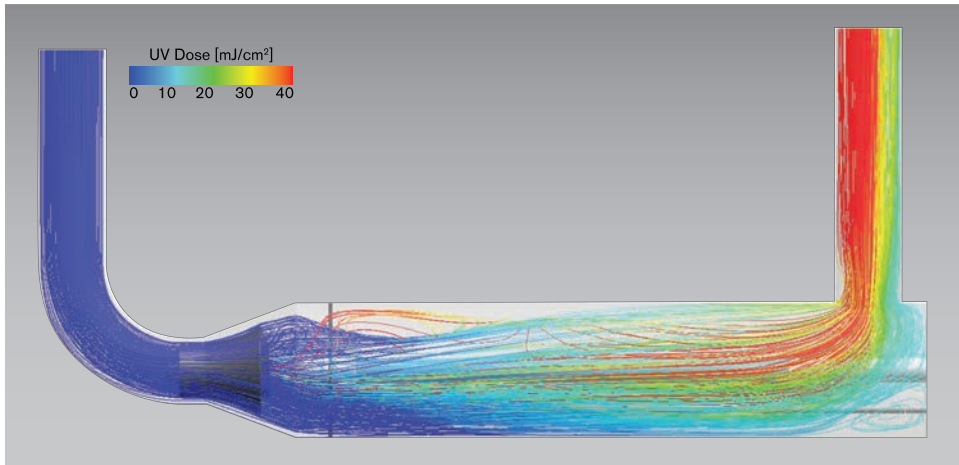
Advancing the Science of Dose Delivery

Distributed Flow Conditioning With FIN Technology



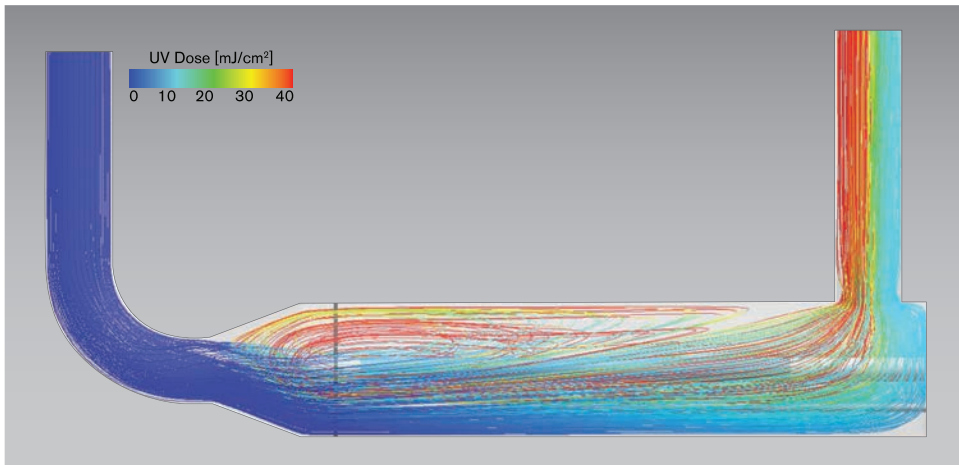
- FIN is our patent-pending technology for optimizing the flow field within the TrojanUVTelos
- FIN matches the flow field to the light intensity field ensuring maximum UV dose delivery
- Flow modifiers distributed throughout the UV chamber ensure that no short-circuiting occurs and that a uniform UV dose is delivered

Conical Inlet Flow Conditioner



- A single flow conditioner at the inlet improves dose delivery but still results in jetting along the bottom, and only moderately improves dose distribution

No Flow Conditioner



- No flow conditioner leads to jetting along the bottom of the chamber and uneven dose delivery

The images on this page demonstrate accumulated dose delivered to an equivalent number of particles released in a computational fluid dynamics model with identical flow rate and UV transmittance (UVT).

Revolutionary Lamp and Driver Technology

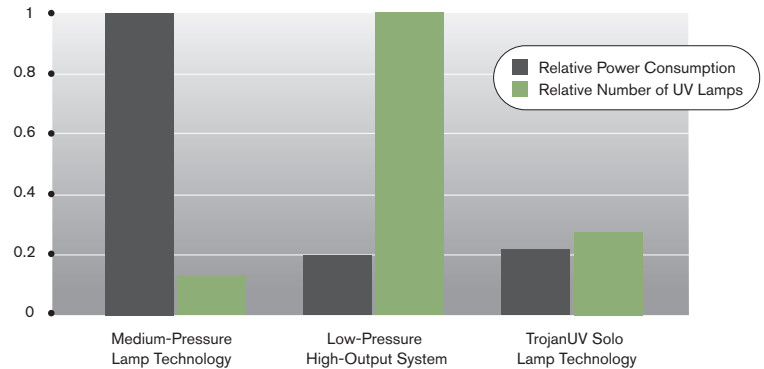
Minimize lamp count, maintenance requirements and power consumption



The TrojanUVTelos uses the Solo Lamp, a powerful, high-efficiency lamp paired with the advanced, energy-efficient Solo Lamp Driver.

Benefits:

- Offers very high UV output without compromising electrical efficiency
- Fewer lamps required to meet dosage requirements
- Long lamp life equivalent to traditional low-pressure lamps (>15,000 hours guaranteed)
- Drivers capable of adjusting output and UV intensity to conserve energy when UV demand is low (during periods of low flow or high water clarity)
- Shorter arc length requires smaller UV chambers to house lamps and other associated components
- Electrical power consumption approximately one-third that of medium-pressure lamp systems



TrojanUV Solo Lamp systems combine the benefits of other lamp technologies – the low lamp count of medium-pressure systems with the high electrical efficiency of low-pressure high-output (LPHO) systems. The result is a compact, cost-effective installation that is easy and quick to maintain.

User-Friendly Operator Interface

Color touchscreen interface allows easy operation and monitoring



The system controller combines sophisticated system operation and reporting with an operator-friendly, color touchscreen display.

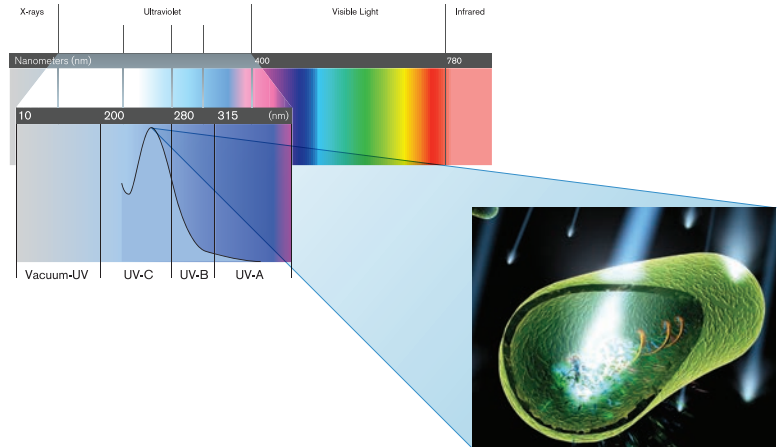
Benefits:

- Active dose pacing minimizes energy use while maintaining required UV dose
- Controller features intuitive, graphical display for at-a-glance system status
- Controller communicates with plant SCADA systems for centralized monitoring of performance and control of operation
- No SCADA? No problem. HMI screens can be remotely monitored through any web browser

The Benefits of UV

Broad-spectrum, cost-effective protection that offers unparalleled safety

- Chemical-free way to safeguard water against harmful pathogens
- Widely accepted and endorsed worldwide for disinfection of drinking water
- Offers broad-spectrum protection against a wide range of pathogens including bacteria, viruses, and chlorine-resistant protozoa
- Provides *Cryptosporidium* and *Giardia* inactivation
- Excellent primary disinfection option
- Reliable and cost-effective part of a multi-barrier treatment strategy
- Does not create disinfection by-products (DBPs) and does not affect taste



UV light is invisible to the human eye, but a highly effective, chemical-free way of inactivating microorganisms in water. UV light penetrates the cell wall of the microorganism and alters its DNA so it can no longer reproduce or cause infection.

System Specifications

Model Number	120i	130i	245i
Water Temperature	1°C to 40°C (34°F to 104°F)		
UV Chamber			
Number of Lamps	1	1	2
Flange Size	4" (DN100)	6" (DN150)	10" (DN250)
Chamber Material	Type 316L Stainless Steel		
Maximum Operating Pressure	Standard: 150 PSI (10 Bar) Optional: 232 PSI (16 Bar)		
Wiping System Available	Optional: Automatic		
Electrical			
Driver Power Level	Electronic Variable Output		
Enclosure Rating	Type 4X (IP66)		
Network Interface (SCADA)	Options: Modbus RTU RS485, Modbus TCP/IP, AB Ethernet I/P, ProfiNet		
HMI	4" Color Touchscreen		
Remote Monitoring	Yes		

TrojanUV is part of the Trojan Technologies group of businesses.

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