TROJAN UV TORRENT™

DRINKING WATER TREATMENT

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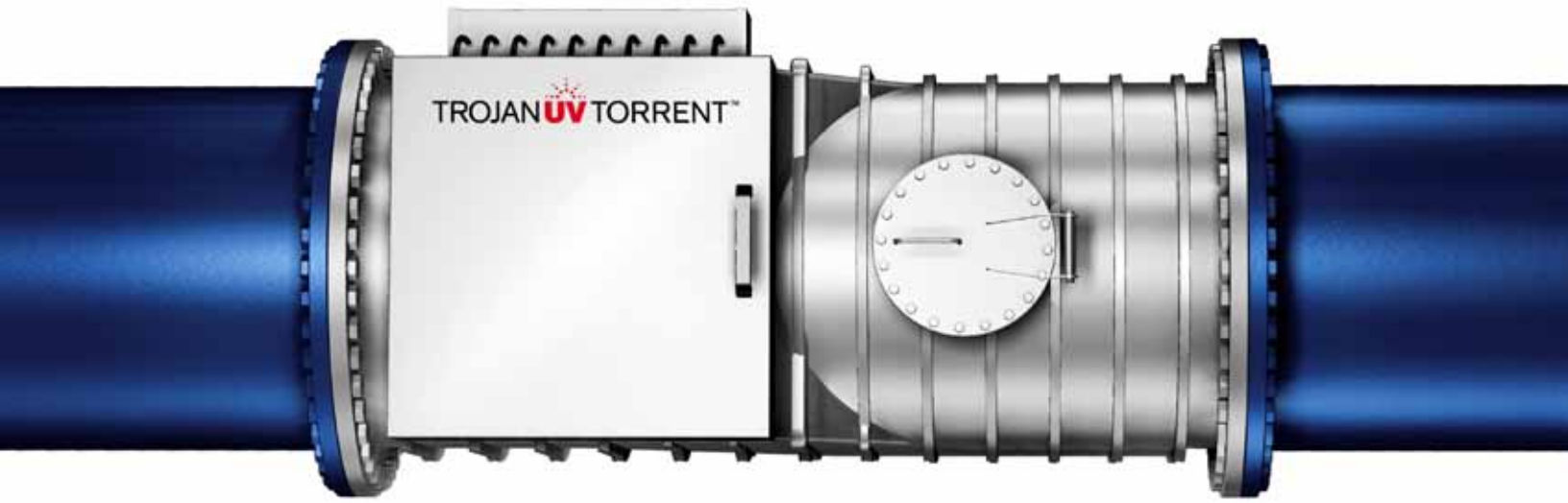


Drinking Water Treatment. No Compromises.

Revolutionary technology platform from the industry leader

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.

Until today, municipalities have had to weigh the benefits of a compact installation with fewer UV lamps against a more electrically efficient system containing over 5 times more lamps. Trojan's revolutionary lamp – TrojanUV Solo Lamp™ – stands alone in offering the advantages of both existing medium pressure and low pressure high output lamp technologies. Incorporated into the TrojanUVTorrent™, the advantages become clear – lower life cycle costs, easy maintenance and reduced environmental impact.

With every new TrojanUV product development, we incorporate the latest reliability and safety features to benefit our customers. Reducing maintenance requirements and costs while incorporating the most efficient technologies available, the TrojanUVTorrent™ leads the way for large-scale drinking water disinfection. No compromises.

Key Benefits

TrojanUVTorrent™

Revolutionary Lamp Technology. Unprecedented cost and maintenance advantages using TrojanUV Solo Lamps™ with high electrical efficiency.

Compact Footprint. TrojanUV Solo Lamp™ technology results in a significantly reduced footprint for both the UV reactors and panels. Lowers construction costs and simplifies operation.

Modular Reactor Design. Strategically designed groups of UV lamps and modules increase reactor efficiency and operational flexibility to save power.

Chemical and Mechanical Sleeve Cleaning. Trojan's proven ActiClean™ system automates quartz sleeve cleaning to maximize UV dose delivery and save operators time.

Flexible Design and Operation. Reactors can be installed vertically or horizontally, making it simple to integrate into plant design. Low headloss configuration and sophisticated controls enable cost-effective disinfection of a wide range of flow rates per treatment train.

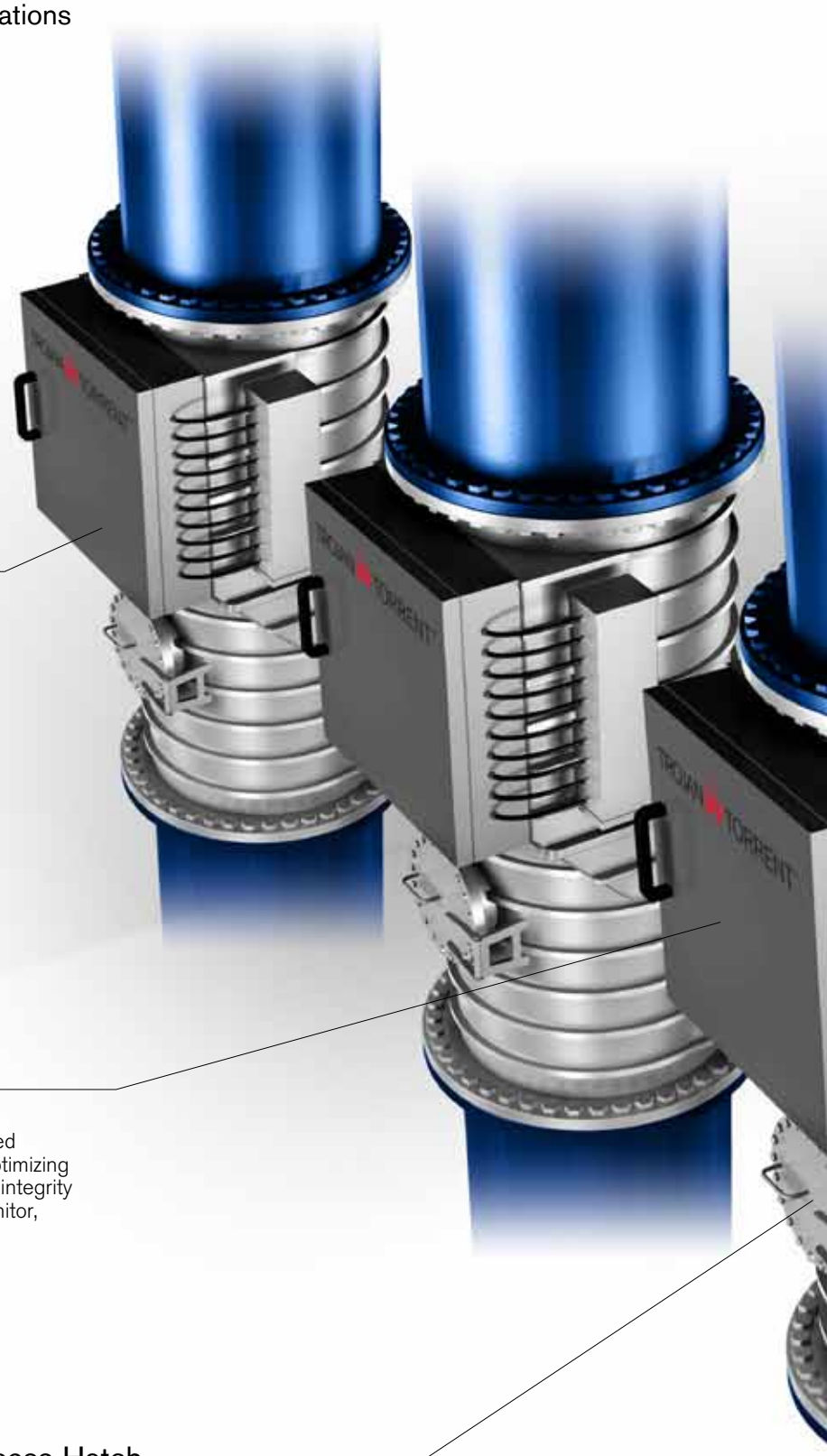
Sustainable Disinfection Solution. Significantly lower carbon footprint than alternate UV systems. Lowest environmental impact through 20-year life cycle assessment evaluating manufacturing, operation and disposal.

Global Support. Local Service. Trojan's comprehensive network of certified service providers offers fast response for service and spare parts.

Guaranteed Performance and Comprehensive Warranty. Trojan systems include a Lifetime Disinfection Performance Guarantee. Ask for details.

TROJAN UV TORRENT™

Small footprint disinfection for large applications



Service Entrance

The single service entrance utilizes a dual-safety system and allows easy access to internal reactor components (UV lamps, quartz sleeves). Operators can access low-voltage components (wiper drive, UV intensity sensors) without de-powering the reactor. Each lamp connector contains a safety switch that automatically disconnects power to the lamp if the connector is removed before the lamp is turned off.

UV Intensity Sensor

Highly accurate sensors monitor filtered germicidal UV output within the reactor. Lamp output is adjusted automatically to maintain required UV dose while optimizing power consumption. Routine checks of duty sensor integrity can easily be performed with a portable Sensor Monitor, minimizing time spent on sensor calibration checks.

Access Hatch

The suitably-positioned access hatch with hinged door provides access to the interior of the UV reactor.

Power Distribution Center (PDC)

The compact PDC panel contains all the lamp drivers and system control components. Lamp drivers are highly efficient and generate very little waste heat. Lamp drivers use a state-of-the-art digital signal processor to provide advanced diagnostic capabilities. The compact panel is approximately one-fifth the size of a comparable LPHO lamp system and half the size of a medium-pressure lamp system. Each of these features contributes to the small footprint and ease of maintenance.

Operator Interface

The touch-screen HMI allows local monitoring and control of each UV reactor. Operators can quickly view system status, alarms and set-points through the intuitive graphical interface.

ActiClean™ Sleeve Cleaning System

Dual action cleaning system uses mechanical wiping in conjunction with a food-grade cleaning gel contained within wiper collars surrounding the quartz sleeves. This advanced system operates automatically, without operator involvement, reducing maintenance and ensuring maximum UV output. UV lamp sleeves and intensity sensors are cleaned regularly without disrupting disinfection.

TrojanUV Solo Lamps™

SOLO LAMP TECHNOLOGY

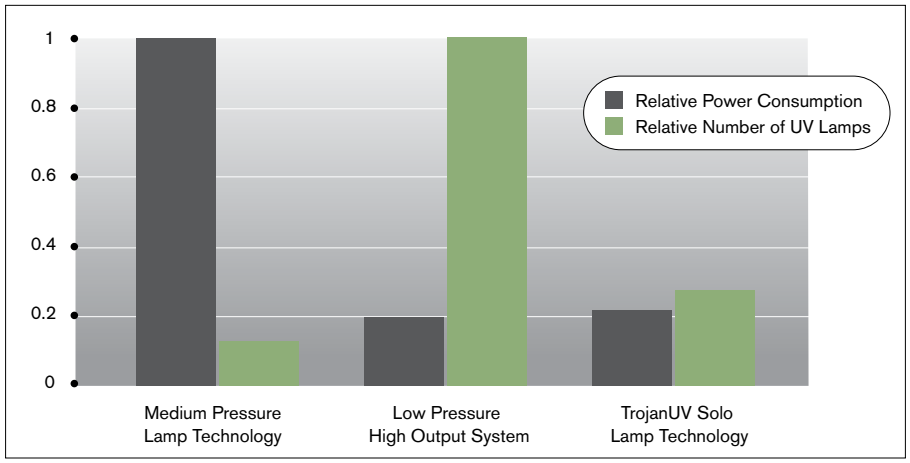
The TrojanUV Solo Lamps™ are the lifeblood of the UV system. With both high UV output and high electrical efficiency, they provide unprecedented cost and maintenance benefits by simultaneously reducing total lamp count and power consumption. Lamps are located within protective quartz sleeves with easy access through the service entrance.

Revolutionary TrojanUV Solo Lamps™

Minimize lamp count, maintenance requirements and power consumption

Benefits:

- Offers very high UV output lamp technology without compromising electrical efficiency or space requirements
- Long lamp life equivalent to low-pressure lamps (>12,000 hours)
- Incorporates cost-saving feature of lamp dimming (30 to 100%) to conserve energy when UV demand is low (during periods of low flow or high water clarity)
- Electrical power consumption approximately 1/3 of medium-pressure lamp systems



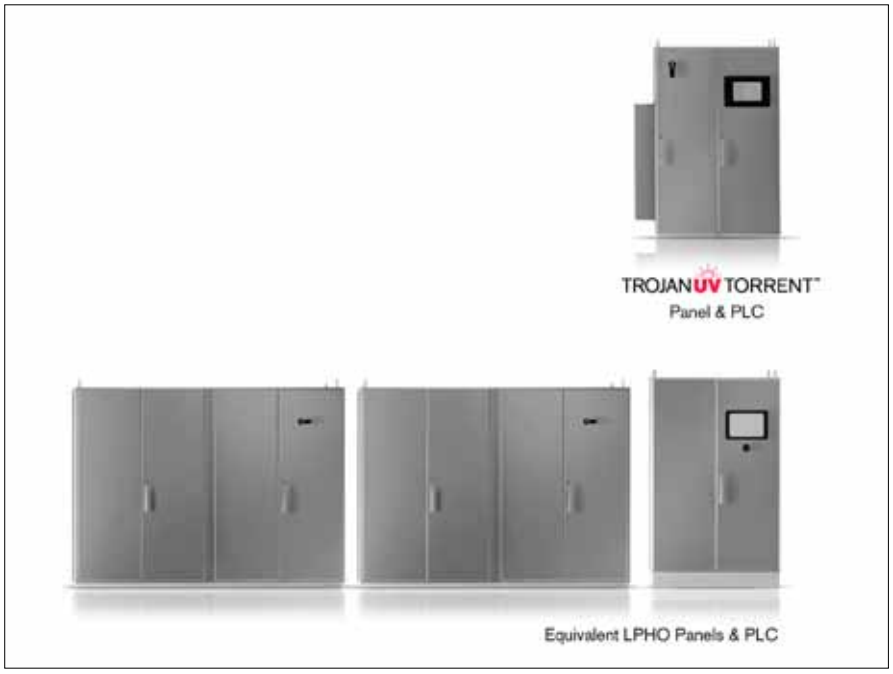
TrojanUV Solo Lamp™ systems combine the benefits of other lamp technologies – the low lamp count of medium pressure systems with the high electrical efficiency of LPHO systems. The result is a compact, cost-effective installation that is easy and quick to maintain.

Compact Panel Design

Dramatic footprint reduction simplifies design and installation

Benefits:

- Lamp drivers and PLC components housed a single floor mounted panel
- One panel per reactor – reduces overall footprint and increases layout flexibility
- High-efficiency lamp drivers reduce excess heat and HVAC requirements
- Advanced lamp drivers use digital signal processing providing state-of-the-art diagnostic capabilities
- Lamp drivers are easy to access and simple to replace if required. Power and communication signals connect automatically when lamp driver is inserted – no manual wiring.

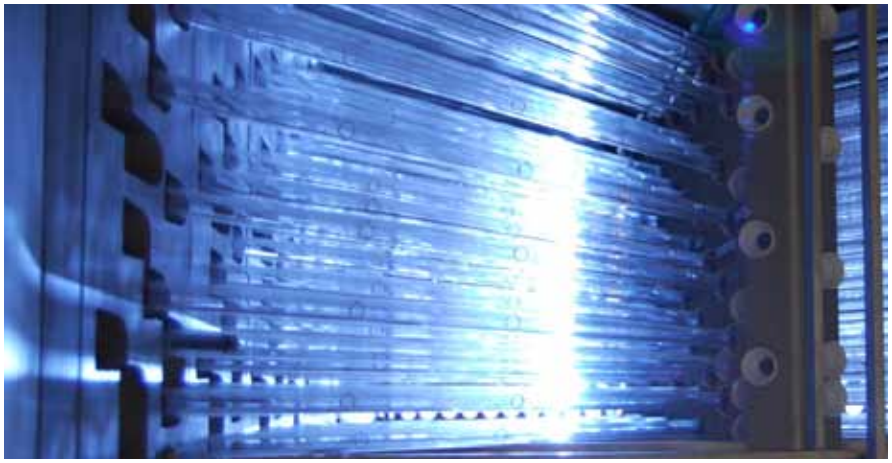


Advanced Hydraulic Design

Lamp orientation increases efficiency and simplifies maintenance

Benefits:

- UV lamps, installed at an angle to the flow, offer several tangible benefits
- Headloss is reduced, enabling treatment of higher flow rates in a single reactor
- Superior reliability due to high structural integrity of angled lamp orientation
- Lamps and sensors are easy to access and quick to replace – saving operators time
- Efficiency of angled UV lamp orientation proven through full-scale validations



Trojan's angled UV lamp orientation reduces headloss and optimizes disinfection performance. Developed and proven for the world's largest UV disinfection facility treating drinking water.

Built for Reliable Performance and Easy Maintenance

Incorporates design features proven to reduce maintenance

Benefits:

- ActiClean™ wiping system removes fouling automatically – without operator involvement
- TrojanUV Solo Lamps™ significantly reduce the total number of lamps – reducing time spent monitoring and replacing lamps
- Lamp sleeves are easily inserted using the sleeve insertion tool
- UV intensity sensor calibration checks are performed at the reactor service entrance using a hand-held monitor
- Touch-screen HMI features intuitive graphical display for all system operating parameters
- Safety features ensure operators can work confidently with the UV system

The hand-held UV Intensity sensor monitor allows operators to quickly and easily measure duty and reference sensor calibration.

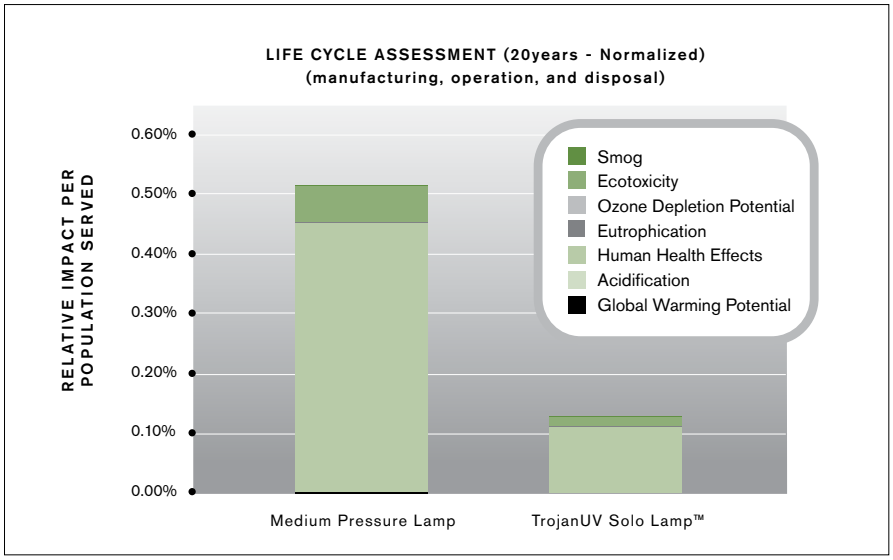
TROJAN UV TORRENT™

Reducing Environmental Impact Of UV Disinfection

The benefits of UV – now with smaller environmental footprint

Benefits:

- Increased electrical efficiency reduces power consumption and carbon footprint
- Fewer total lamps and smaller construction footprint favor the TrojanUVTorrent™ in a Life Cycle Assessment (LCA) evaluating manufacturing, operation and disposal
- LCA measures environmental impact in terms of photochemical smog, ecotoxicity, ozone depletion potential, eutrophication, human health effects, acidification and global warming potential



The TrojanUVTorrent™ system has a smaller total environmental impact than an equivalent-sized medium-pressure lamp system. In this example, impact categories are measured against a served population of 500,000.

Building Water Confidence in a Changing Climate

Trojan's Environmental Policy

Trojan has an environmental policy to minimize the carbon footprint and waste stream of our business activities and products as we continue to develop and service quality products that address global water issues. Trojan is committed to achieving these environmental protection goals through:

- Setting goals for maximizing energy efficiency and minimizing waste streams of our operations and products, taking action and monitoring our progress against those goals
- Designing products that minimize resource consumption and reduce the environmental impact of our customers
- Achieving optimal carbon footprint and waste reduction throughout our value chains
- Minimizing or eliminating the use of hazardous substances in our operations and products
- Meeting or exceeding all applicable environmental rules and regulations

Find out how your drinking water treatment plant can benefit from the TrojanUVTorrent™ — call us today.

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TROJAN UV WATER CONFIDENCE™