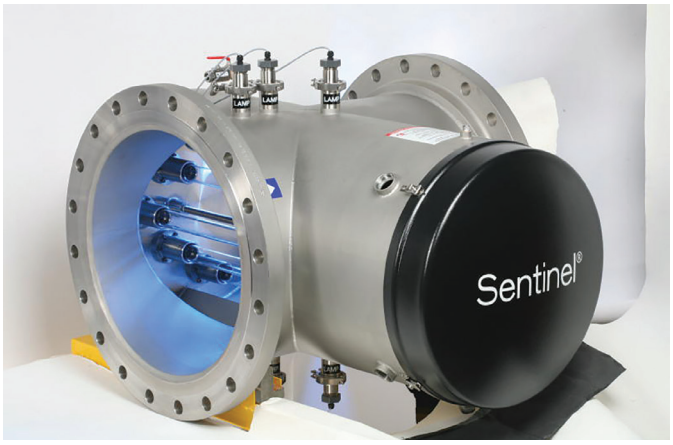
SENTINEL® 24

Ultraviolet Drinking Water Disinfection System



Applications

Ultraviolet

Drinking Water (Potable)

UV disinfection with SENTINEL® provides a proven barrier to harmful pathogens that can be present in source water. This includes bacteria, viruses and chlorine-resistant protozoa such as Cryptosporidium and Giardia. SENTINEL disinfection is a chemical free physical process producing zero disinfection byproducts and is more cost effective than ozone or membranes.

Description

Designed to treat flows up to 28 million gallons per day (105 MLD), the Sentinel 24 can effectively disinfect drinking water in medium-sized treatment plants. The Sentinel 24 uses medium-pressure lamp technology to achieve greater than 4 log inactivation of Cryptosporidum, Giardia, and virus in drinking water. Medium-pressure lamp technology allows the Sentinel 24 to be compact with a small footprint. This can provide a significant advantage to water treatment plants looking for a system that can be easily retrofitted into existing treatment systems.

The Sentinel 24 system features include independent, third-party-certified UV intensity sensors to assure accurate delivery of UV dose, an automatic quartz sleeve cleaning system, and a fully automated control system. The Sentinel 24 was designed using advanced computational fluid dynamics allowing for optimal lamp and baffle placement to ensure maximum reactor performance and operational efficiency. The Sentinel 24 has undergone third-party validation under the U.S. EPA LT2 Enhanced Surface Water Treatment Rule guidelines.

Features / Benefits

- Lamps: High intensity medium-pressure lamps
- Lamp Intensity Sensors: DVGW-certified germicidal sensors (one per lamp)
- Cleaning System: Automatic Quickwipe™ system
- Automated Operation and Control System: PLC-based operation and control
- Reliable: robust long-life electromagnetic ballasts with superb voltage tolerance
- Safe: automatic emergency shut down
- Easily Installed: power cabinets may be located up to 500 feet (150 meters) from reactor
- Validated per US EPA UV Disinfection Guidance Manual
  - with multiple organisms MS2, T1 and T7 to bracket Cryptosporidium
  - with high relative absorbance at low wavelengths to minimize Action Spectrum Correction Factor
  - with 1, 2, 3, 4, 5 or 9 lamps operating for efficient turndown capability
- Can be used as a combined AOP/Disinfection reactor – e.g. for Taste and Odor control with 9 lamps for high dose AOP during T&O events and 2 to 5 lamps for disinfection (see Sentinel 24 AOP Data Sheet)

Specifications	SENTINEL 24
Inlet/Outlet	24” (600 mm) – 150# flange
Flow	Validated up to 28 MGD (105 MLD)
% UVT at 254 nm	Validated down to 54%T
Number of Lamps	up to 9
Total Lamp Power	20–90 kW
Turndown	90 kW (9 lamps) – 4 kW (1 Lamp at 40% power)
Power Supply	400–600 VAC
Reactor Body	316L Stainless Steel
Maximum System Pressure	150 psi (10.3 bar)
Sensors	DVGW-certified germicidal (one per lamp)
Wipers	Quickwipe™ Stainless Steel Wipers