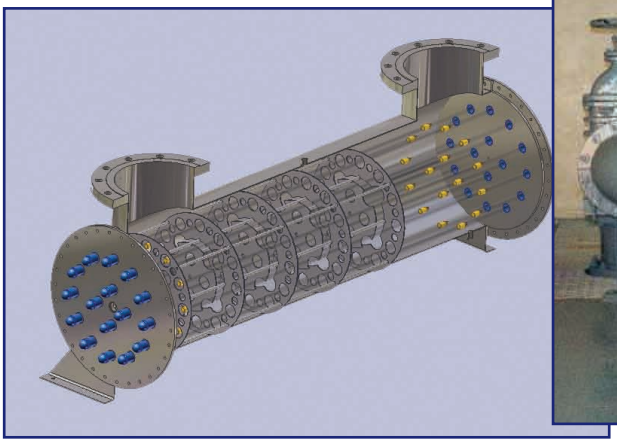
ULTRAVIOLET WASTEWATER DISINFECTION

Chambered Treatment Systems
1 to Millions of Gallons Per Day

SUN SERIES



APPLICATIONS

The SUN Series of chambered ultraviolet disinfection systems is designed to treat unlimited flows. The most significant features are its chambered design, small footprint and ease of operation.

The systems come standard with horizontally oriented stainless steel chambers, remote NEMA 4x power control centers, automatic air-driven cleaning systems and PLC controls.

PRODUCT HIGHLIGHTS

- Lamp replacement without draining vessel
- Automatic quick-stroke quartz cleaning
- Flexible inlet and outlet sizes and locations
- Low maintenance

TYPICAL INSTALLATIONS

- Towns, cities and municipalities
- Private developments
- Schools and institutions
- Camp grounds and trailer parks
- Highway rest stops
- Business parks
- Industrial wastewater plants
- Parks and recreational areas

STANDARD FEATURES

- Stainless steel electropolished vessels
- Local window kits displaying lamp status, elapsed run time and UV output
- Low pressure standard, high output (HO) or amalgam lamp technology with 12,000 hour lamp life
- Medium pressure lamp technology with variable output lamp power
- Energy efficient electronic ballasts
- High-heat protection

OPTIONAL FEATURES

- PLC control
- 4-20 mA output or dry contact alarming
- HOA switches
- Supplemental chemical cleaning systems
- On-line UV transmission monitoring

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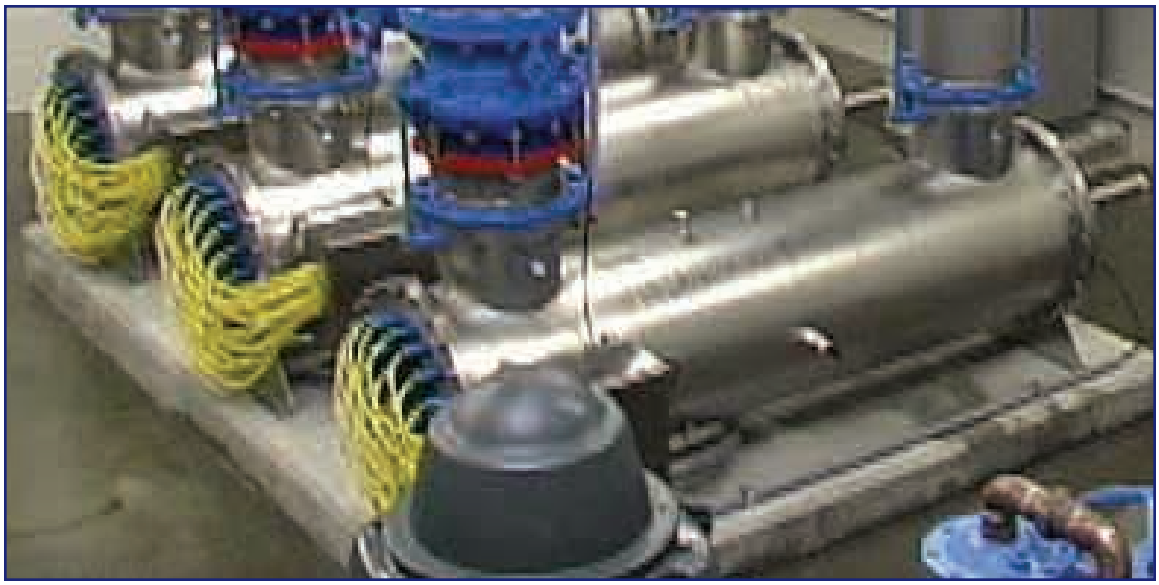

DESIGN CONSIDERATIONS

When designing a chambered wastewater UV system into the overall wastewater treatment plant (WWTP), you will need to determine how the system will be connected.

The piping must be designed to allow the chamber to remain flooded at all times including no flow situations.

The inlet and outlet sizes and location are customizable. Based on existing or new piping, the engineer can design a UV system that fits into the overall plant design.

INFORMATION REQUIRED FOR SYSTEM DESIGN

- Discharge permit
- Peak instantaneous flow rate
- Average flow rate
- No flow situations
- UV transmission % at 254 nm
- Total suspended solids (TSS)
- Biological oxygen demand (BOD)
- Installation location (indoor or outdoor)
- Pre-process description
- Access to maintenance personnel

OPERATION AND MAINTENANCE

In order to meet the discharge permit, the system will require maintenance. Lamps will need to be replaced every 12,000 hours. Due to the heat of the lamps and the harsh nature of wastewater, the quartz sleeves (the protective material over the lamps) will need to be cleaned. The cleaning regimen will be directly related to the pre-treatment, the makeup of the wastewater and access to personnel. Fouled quartz sleeves will prevent the UV from penetrating and thus reduce system efficiency. The choices for cleaning are as follows:

Manual

Operator can use a portable chemical tank to re-circulate a citric acid through the vessel.

Automatic

An air compressor will drive a wiper across the sleeves and help remove build up. Based on a field adjustable timer or PLC, operators can adjust frequency and duration of cleaning cycles. This is highly recommended for all installations.

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