



Wastewater Disinfection

Pure Water. Clean Air. Better World.



C³500™D

UV Wastewater Disinfection

UV disinfection is a physical process that applies only UV light to the water to render pathogens harmless to humans. It can be used to replace or reduce the traditional use of chlorine as a disinfectant. Chlorine has been shown to have significant environmental impact via toxicity to aquatic life and formation of disinfection by-products (DBPs). Additionally, it presents safety risks to plant operators that handle and store the chemical.

The unique design of the Calgon Carbon C³500™D provides an open channel wastewater disinfection solution using fewer lamps and with reduced head loss. This is made possible by the unique design with rack-mounted delta-shaped wings that provide continual rotation and mixing of the effluent for uniform UV dose application from low-pressure, high-output (LPHO) amalgam lamps.

The C³500™D is completely modular and scalable and can be precisely sized to any application requirement. The control system provides automated closed-loop dose or flow pacing for secondary and tertiary wastewater applications. Additionally, the efficient mixing provided by the delta wing has been proven for demanding reuse and low-quality effluent applications.

The system includes self-cleaning lamp racks, power distribution center (PDC), system control center (SCC), level control and all interconnecting cables.

Features/Benefits

- **Superior Disinfection Efficiency**

Fewer lamps than competing UV systems by use of 500 W LPHO lamps and controlled mixing.

- **Smaller Footprint Suitable for Outdoor Installation**

Lower overall cost of installation.

- **Low Headloss**

Efficient hydraulic channel flow and design flexibility.

- **Self-Cleaning**

Patented, electrically driven, stainless steel scrapers clean automatically without hazardous chemicals.

- **Validated Performance**

Rigorously bioassay-tested from 35 to 80% UVT using MS2 and T1 surrogates.

- **Reuse-Ready**

Tested and recognized for treatment requirements of the California Water Recycling Criteria (Title 22), recognized worldwide as the most-stringent standard for water reuse.

Flood Resistant Rack Modules

Wastewater plants are highly susceptible to flooding because they generally sit in low elevations and close to the body of water in which they discharge. Many UV systems contain sensitive equipment near the surface of the water that is not designed to be wet and feature only limited protection from extended submergence. Even minor flooding can result in catastrophic damage to most UV systems, but the the C3500D has been designed with resiliency at its forefront.

- IP68-rated lamp racks.
- Tested for 24 hours simulating a depth of 10 feet over the lamp racks.
- Plant can resume operations immediately following a flood event.

Applications



Wastewater
Treatment

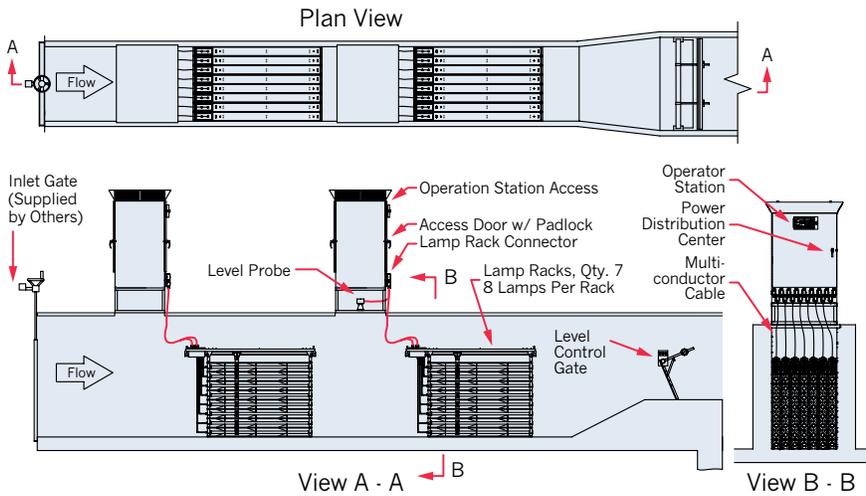


Reuse



Industrial
Wastewater

Typical System Overview



PDC

- Each ballast drives one lamp
- Variable output 60 to 100%
- Interchangeable, addressed via slot in card cage
- Individual lamp failure indication reported locally via LED and remotely at SCC
- Designed to comply with NEMA 4X (IP 65) ratings
- Operator station on front door allows operators to view PDC status and control locally

SCC

- Optimizes system disinfection performance
- SCADA communications module

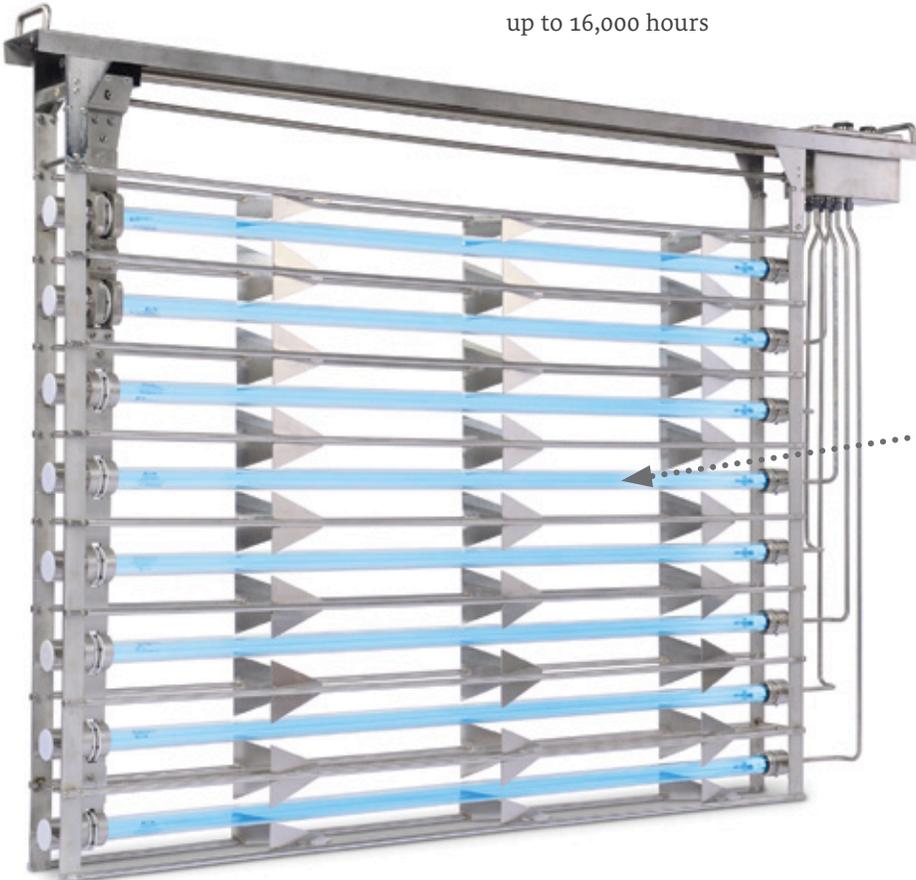


Cleaning System

- Cleaning system is electrically driven, minimizing number of components
- Patented stainless steel scraper
- No chemicals required

Rack Modules

- Self-supporting modular design, 8 lamps per rack, max., with hydraulically efficient 6-inch (15.2 cm) spacing between lamps
- Easy to install and service
- Ballasts external to rack – tolerant to flooding events
- 500 W (nominal) low-pressure high-output pellet amalgam lamp
- Coated lamp for longer life, up to 16,000 hours



C³500™ UV System Specifications

Application Range	Validated from 35-80% UVT, (MS2 & T1 surrogate)
Rack Configuration	2 to 8 lamps per rack
Lamps	Low-pressure, high-output (LPHO) amalgam
Ballasts	Electronic, variable output (60-100%), pre-heat start to extend lamp life
Cleaning System	Automatic mechanical wiper driven by fractional HP motor
Power Demand	575 watts/lamp including ballast (nominal)
Power Quality	.98 minimum system power factor, complies with IEEE519-1992 for Total Harmonic Distortion
Input Power Options	400/230VAC, 3 Phase, 4 wire and GND, 50/60 Hz 480/277VAC, 3 Phase, 4 wire and GND, 60 Hz
Location	Indoor or Outdoor

About Calgon Carbon a Kuraray Company

Calgon Carbon is an acknowledged leader – nearly 75 years in production - in the activated carbon and reactivation industry for many liquid and vapor phase applications, with complementary expertise in ultraviolet disinfection and oxidation, ion exchange technology, and ballast water treatment.

As the activated carbon industry forerunner and with ultraviolet light disinfection and oxidation expertise, Calgon Carbon has originated cutting-edge purification systems for drinking water, wastewater, odor control, pollution abatement, and a variety of industrial and commercial manufacturing processes.

For more information about Calgon Carbon's leading activated carbon, filtration media and ultraviolet technology solutions, visit www.calgoncarbon.com.



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