



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.

- **Floodable Rack Modules**

Racks are designed to withstand prolonged submersion, should flooding or upsets occur.

Applications



Wastewater Treatment

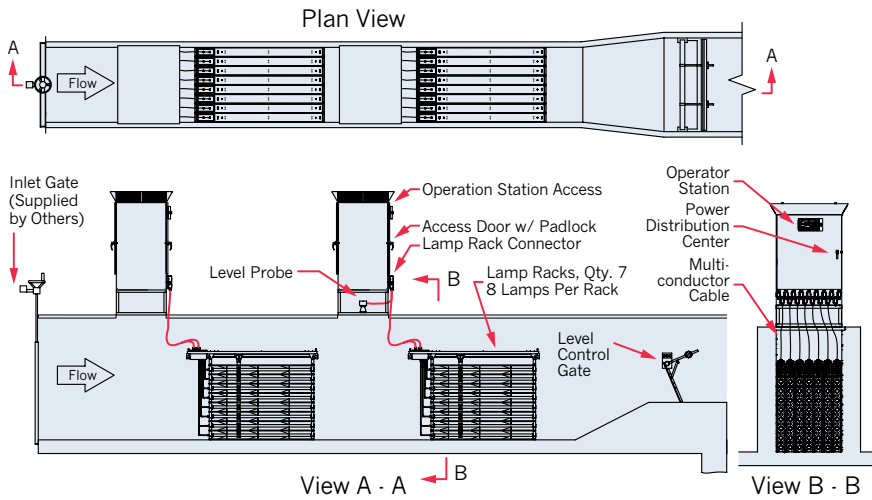


Reuse



Industrial Wastewater

Typical System Overview

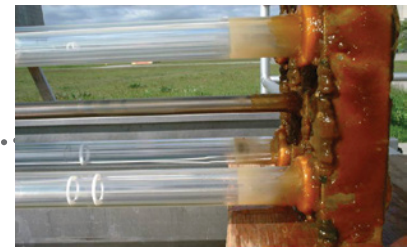


PDC

- 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

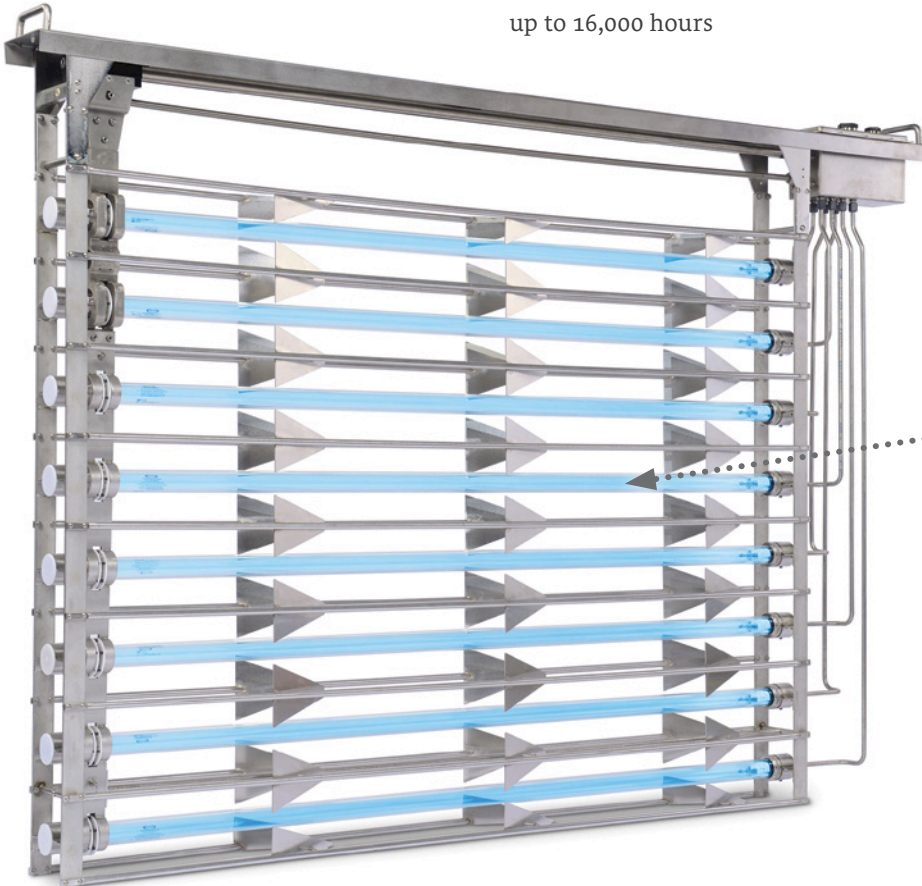


Cleaning System

- 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

Calgon Carbon Corporation (NYSE:CCC) is a global leader in innovative solutions, high-quality products and reliable services designed to protect human health and the environment from harmful contaminants in water and air. As a leading manufacturer of activated carbon, with broad capabilities in ultraviolet light disinfection, the Company provides purification solutions for drinking water, wastewater, 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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