

# C<sup>3</sup>500™

## Ultraviolet Disinfection System

### Description

The C<sup>3</sup>500 open channel series is an advanced, cost effective solution for the ultraviolet disinfection of wastewater using high powered (500W), low-pressure lamps. Calgon Carbon designed the C<sup>3</sup>500 open channel, parallel flow ultraviolet disinfection series to meet the demands of treatment plant operators with simple operation and maintenance. The C<sup>3</sup>500 allows plant operators to eliminate chlorine usage, which eliminates the risks associated with chemical handling, while improving effluent quality.

The C<sup>3</sup>500 can be built to treat the flows of most open channel wastewater streams from medium- to large-sized wastewater treatment plants. The C<sup>3</sup>500 is also capable of disinfecting combined sewer overflows (CSO), sanitary sewer overflows (SSO), and reuse waters. The modular design allows for easy expansion as plant capacity increases.

The C<sup>3</sup>500 can be equipped with simple manual controls or sophisticated control systems based on customer requirements. The UV System includes: lamp racks, power distribution center, automatic level control device, automatic cleaning system, and all necessary interconnecting cables. It is designed for simple installation and trouble-free operation throughout the life of the system. The C<sup>3</sup>500 is designed to operate at ambient air temperatures ranging from 14°-104°F (-10°- 40°C) with 5-95% relative humidity (non-condensing). System options are available for conditions outside of this range.

### Design Features

#### Modular Design

- Modular components are preassembled with quick-connect cables for simple installation and system start-up
- Components are designed to comply with NEMA 4X (IP55) ratings



#### Lamp Technology

- Low-pressure, high-output (LPHO) amalgam lamp technology
- Pre-heat start and continuous heat configuration

#### Ballast Technology

- Efficient, high frequency electronic ballast
- Variable output
- Each ballast powers one LPHO lamp

#### Automatic Cleaning System

- Mechanical, non-chemical cleaning
- Automatic or manual initiation

#### Innovative Control System

- Dose or flow pacing
- Self-diagnostics
- Individual lamp status indication
- Elapsed time counter
- Remote annunciation of alarms and bank status

#### UV Intensity Sensor

- Monitors the average intensity within the lamp bank array
- User adjustable setpoints for low and low-low UV intensity alarms

#### Level Control Devices

- Stainless steel serpentine weir, counterbalanced stainless steel level control gate or motorized stainless steel weir

#### Input Power Options

- 400/230VAC, 3 Phase, 4 wire and GND, 50/60 Hz
- 480/277VAC, 3 Phase, 4 wire and GND, 60 Hz

#### Power Demand

- 565 watts/lamp including ballast (nominal)

#### Power Quality

- System Power Factor is 0.98 minimum
- System complies with IEEE519-1992 current Total Harmonic Distortion guidelines

## Options

### Advanced Control System

- Optimizes disinfection performance
- Full control and monitoring features
- Lowers operating costs

### Portable Photometer (Model # UV-254)

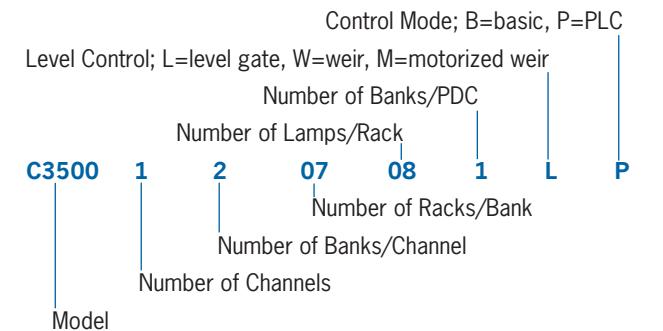
- Permits monitoring of effluent's UV transmittance

### Service Trolley

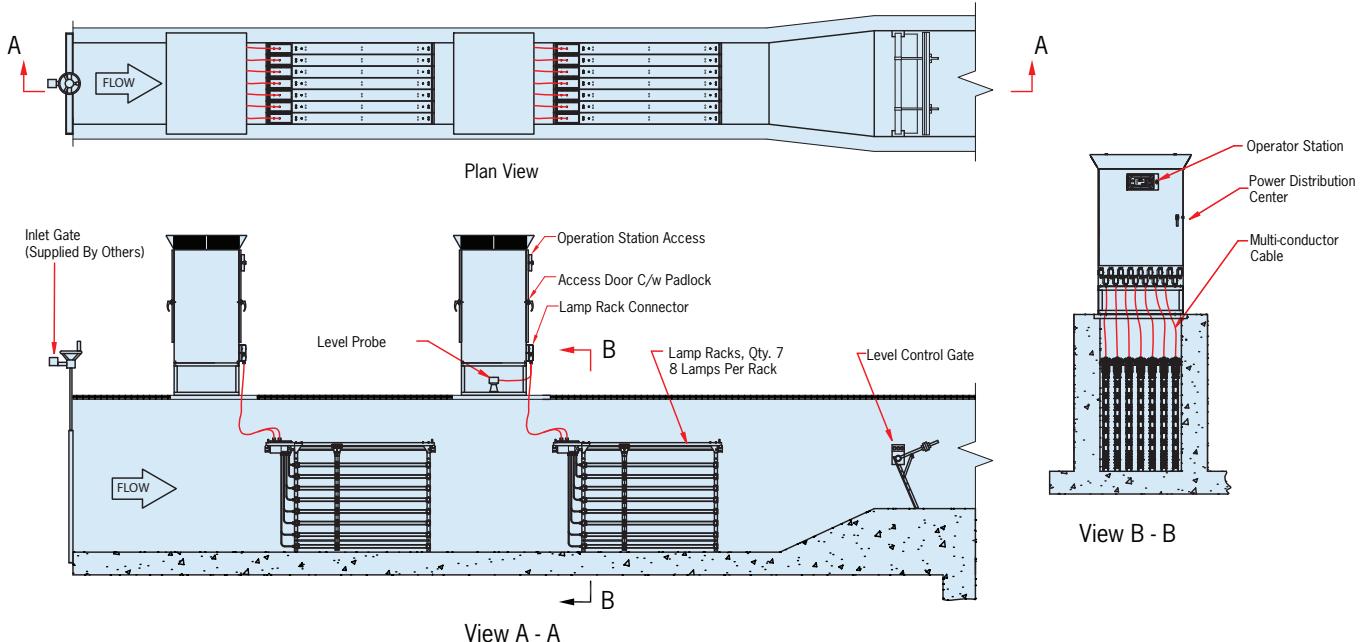
- Portable trolley ideal for servicing lamp racks

## Model Number Nomenclature

The C<sup>3</sup>500 open channel series is identified by a combination of letters and digits by which the system's size, both mechanically and electrically, is designated.



## Typical System Overview



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