



CALGON CARBON CORPORATION

UV Technologies Division

Making Water and Air Safer and Cleaner



**C³ Series™ UV Wastewater
Disinfection Systems**

C³ Series™ - A New Standard in UV Wastewater Disinfection

Already a proven leader in UV disinfection for drinking water and advanced oxidation for groundwater, Calgon Carbon's UV Technologies Division now offers a new standard in UV wastewater disinfection.

A safer, more cost-effective alternative to chlorination/dechlorination, ozonation, and membrane filtration, Calgon Carbon's new C³ Series™ wastewater disinfection systems are designed to disinfect wastewater and prevent the spread of waterborne pathogens to lakes, streams, rivers, and coastal waters. The C³ Series™ wastewater disinfection systems use ultraviolet (UV) light energy to damage the DNA of bacteria, viruses, and protozoan cysts. The damaged DNA is unable to replicate as a result of the exposure to UV light, rendering these pathogens harmless.

 Calgon Carbon's
UV Technologies Division
now offers a **NEW** standard in
UV wastewater disinfection

Recently, there has been growing public concern associated with chlorination because of the potential production of harmful disinfection by-products and increased aquatic toxicity from wastewater plant effluent. There are also increased risks and costs associated with chlorine handling at the plant level. Because of these issues associated with chlorine, many regulatory agencies encourage the use of alternative disinfection methods such as UV disinfection.

Calgon Carbon's UV Technologies Division recognizes the growing need for an advanced, cost-effective solution for wastewater disinfection. The C³ Series™ wastewater disinfection systems employ energy-efficient UV lamp technology to effectively disinfect wastewater plant effluent without the harmful by-products or residuals of chlorination. The rugged, modular design can be quickly installed in an open channel parallel to the flow of wastewater. The C³ Series™ is designed for easy installation, simple operation, and trouble-free maintenance.

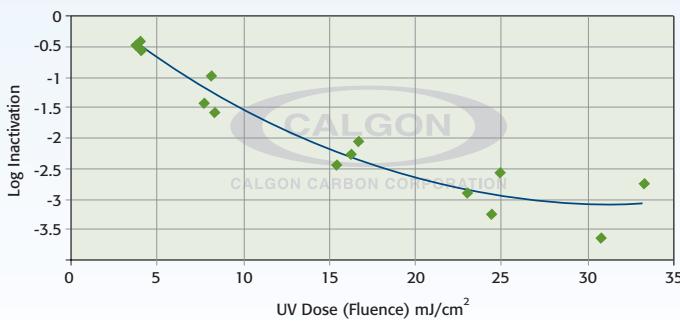
Advantages of the C³ Series™ UV Wastewater Disinfection System

- Reliable and compact modular design
- High performance, energy-efficient low-pressure, high-output lamp design
- Energy-efficient variable output electronic ballast design
- Non-chemical, mechanical cleaning system that is electrically driven
- Innovative control system with Real-Time Dose Pacing and built-in self-diagnostics
- Easy to maintain and operate
- Cost-effective solution for a wide range of effluent qualities
- A reliable wastewater disinfection system from Calgon Carbon - a proven name in water treatment for over 60 years

UV Disinfection vs. Chlorination

- More cost effective than chlorination/dechlorination
- Cleaner and safer than chlorination
- Highly efficient (99.9% reduction in fecal coliform is easily attained)
- No formation of disinfection by-products; e.g., THMs
- No residual chlorine discharges

Fecal Coliform Reduction



Product Lines

C³150™ - Low to medium flow wastewater UV disinfection system

- Nearly twice the lamp power compared to other low-flow competitive systems (170W)
- Automatic cleaning system
- Real-Time Dose Pacing or Flow Pacing

C³150™ PS - Low to medium flow packaged UV disinfection system

- Convenient packaged system design includes a stainless steel channel for easy installation, thereby reducing design and construction costs

C³500™ - Medium to high flow wastewater UV disinfection system. Also designed for combined sewer overflows, sanitary sewer overflows, and wastewater reuse applications

- Industry's most powerful low pressure, high output, amalgam lamp (490W)
- Automatic cleaning
- Real-Time Dose Pacing or Flow Pacing

C³ Series™ Design Features

Modular Design	Automatic Cleaning System
<ul style="list-style-type: none"> Modular components are preassembled with quick-connect cables for simple installation and system start-up Components are designed to comply with NEMA 4X (IP56) ratings 	<ul style="list-style-type: none"> Mechanical non-chemical cleaning Automatic or manual initiation
Lamp Technology	Innovative Control System
<ul style="list-style-type: none"> Energy-efficient, low-pressure, high-output lamp technology Rapid-start continuous heat configuration for improved lamp life Cost-effective design 	<ul style="list-style-type: none"> Real-Time dose pacing or flow pacing Built-in self-diagnostics Local and remote indications Optional Advanced Control System that optimizes disinfection performance and lowers operating costs
Ballast Technology	UV Intensity Sensor
<ul style="list-style-type: none"> Energy-efficient high frequency electronic ballast Variable output Ballast and lamp are matched for improved performance and lifetime Robust modular design that can be easily serviced 	<ul style="list-style-type: none"> Monitors the average intensity within the lamp bank array User adjustable setpoints for low and low-low UV intensity alarms
	Level Control Devices
	<ul style="list-style-type: none"> Stainless steel weir Counterbalanced stainless steel level control gate
	Power¹
	<ul style="list-style-type: none"> Input Options: 208/120 VAC, 3 Phase, 4 Wire and GND, 60 Hz 380/220 VAC, 3 Phase, 4 Wire and GND, 50/60 Hz 415/240 VAC, 3 Phase, 4 Wire and GND, 50/60 Hz 480/277 VAC, 3 Phase, 4 Wire and GND, 60 Hz System Power Factor is 0.95 minimum for the C³150 System Power Factor is 0.98 minimum for the C³500
	<p>¹Refer to model Specification Sheet for details.</p>
	Operating Conditions (Ambient Air)²
	<ul style="list-style-type: none"> 14° - 104°F (-10° - 40°C) 5 - 95% relative humidity (non-condensing)

Calgon Carbon's UV Technologies Division Leadership and Experience

Calgon Carbon Corporation's UV Technologies Division has installed hundreds of systems for treating a broad spectrum of contaminated groundwater, wastewater, process water, and drinking water. The SENTINEL® drinking water system has a large base of installations treating flows of up to three hundred million gallons per day. RAYOX® advanced oxidation systems have been treating contaminated groundwater, industrial wastewater, and process water for over fifteen years and remain as one of the leading technologies to treat emerging contaminants such as MTBE, NDMA and 1,4-Dioxane.

“Calgon Carbon continues to **lead the marketplace** with **innovative UV technologies**”

In addition to being a leading UV equipment manufacturer and supplier, Calgon Carbon is also the innovator of UV disinfection for drinking water. In 1998, Calgon Carbon's researchers invented a process that could be used to inactivate *Cryptosporidium* and other similar pathogens in surface water, rendering them harmless to humans. This inventive process, which led to the first U.S. patent for using a low dose of UV light to control *Cryptosporidium* in water, placed Calgon Carbon on the leading edge of UV disinfection technology.

With the introduction of the C³ Series™ UV wastewater disinfection systems, Calgon Carbon continues to lead the marketplace with innovative UV technologies.

Technical and Customer Services / Spare Parts

Customers at thousands of installations across the globe trust Calgon Carbon's extensive network of skilled service technicians to provide the support they need every day. If there is a service need related to any Calgon Carbon system, technology, or piece of equipment, it will be addressed promptly and handled to your satisfaction every time.

In addition, Calgon Carbon's dedicated Spare Parts Department can assist each customer in ordering replacement parts for all UV equipment, providing the assurance that the correct parts will be shipped in a timely manner. As the designers and manufacturers of the equipment, Calgon Carbon can easily determine the parts required to keep each system operating properly.

All Calgon Carbon products, systems, and technologies are available on a laboratory, pilot plant, or full-scale production basis. Each customer is provided with a customized process engineering design to ensure that the manufacturing process meets their specific requirements. Full analytical laboratory support is also available including computer modeling to demonstrate product performance and quality.

About Calgon Carbon Corporation

Calgon Carbon Corporation (NYSE: CCC) has been a global leader in services and solutions for making water and air safer and cleaner and for purifying food, beverage, and industrial process streams. Headquartered in Pittsburgh, Pennsylvania, Calgon Carbon operates 16 carbon manufacturing, reactivation, and equipment fabrication facilities and 21 sales and service centers. Calgon Carbon is known as Chemviron Carbon in Europe, the Middle East, and Africa. Calgon Carbon serves more than 4,000 customers around the world. In 2005, the company's sales totaled \$291 million.



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