



Blue Springs Missouri USA - 40 MGD Vertical Amalgam

Ultraviolet Disinfection

Closed Vessel, Open Channel and Fluoropolymer Tube



GLASCO UV

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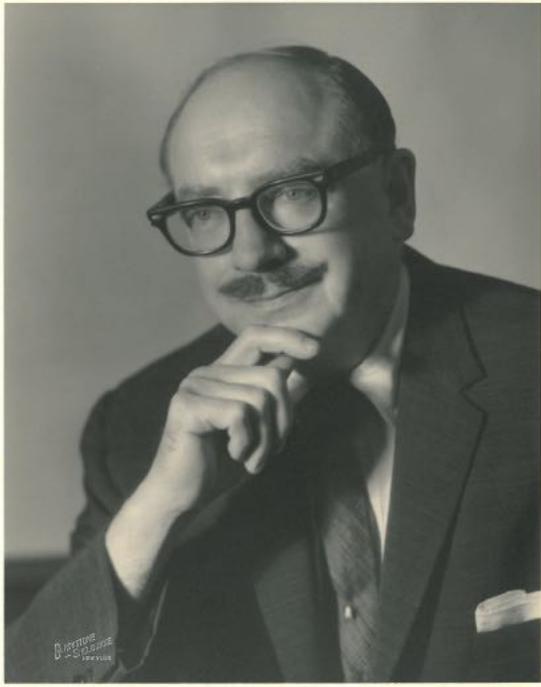
Our Company

GLASCO UV (NJ-USA) has continuously manufactured UV systems for various markets, industries and applications since the 1960s.

In the 1920's, Glasco started as a NY City equipment manufacturer for the food industries. By the 1940's, we worked to support manufacturers during the war effort. Even then, our mission was to "build and design any handling equipment made of metal that will enable you to process or fabricate more expeditiously or more efficiently".

Walter Trommler, current owners' grandfather, founded Glasco's UV division in the 1960s in a new factory in Paterson NJ. These first UV systems were for industrial and commercial applications.

Today, Glasco manufactures UV systems for treating both clean and wastewater for residential, commercial, industrial and various municipal marketplaces.



Founder - Walter Maxwell Trommler

About UV Wastewater Disinfection

When wastewater pathogens (disease causing microorganisms) are exposed to UVC light in the 254 nm wavelength, their cells become damaged and this inhibits reproduction. The light, produced by a special UV lamp, damages the cell's DNA and RNA and once damaged, they are unable to replicate. This physical process renders them harmless.

The amount of damage is a result of the lamp's UVC intensity multiplied by the residence time. The dosage is commonly referred to as microwatts and is often expressed as mJ/cm². Dosages of 30,000 uWs/cm² (30 mJ) are common for meeting a 200/100 ml discharge permit.

There are a number of ways to size and design a UV system. The two primary sizing methods are biological testing (bioassay) and mathematical calculations using light physics (Point Source Summation Method aka UVDIS). Both offer end-users with critical information required to size UV systems. Each method takes into account flow rate, water transmission, lamp type and number of lamps.

UV light technology is a well accepted method for disinfecting wastewater. The main benefits are that it is a green technology (no chemicals), that it does not require a long residence time and the technology has matured over the last 25 years. UV disinfection produces no harmful by-products, does not change tastes or odors, and will work on a wide range of effluent quality.



Chamber IL Series



Chambered UV disinfection systems have been used to treat secondary wastewater since the 1980s. The US EPA indicates that over 50% of the first UV wastewater systems were chambered.

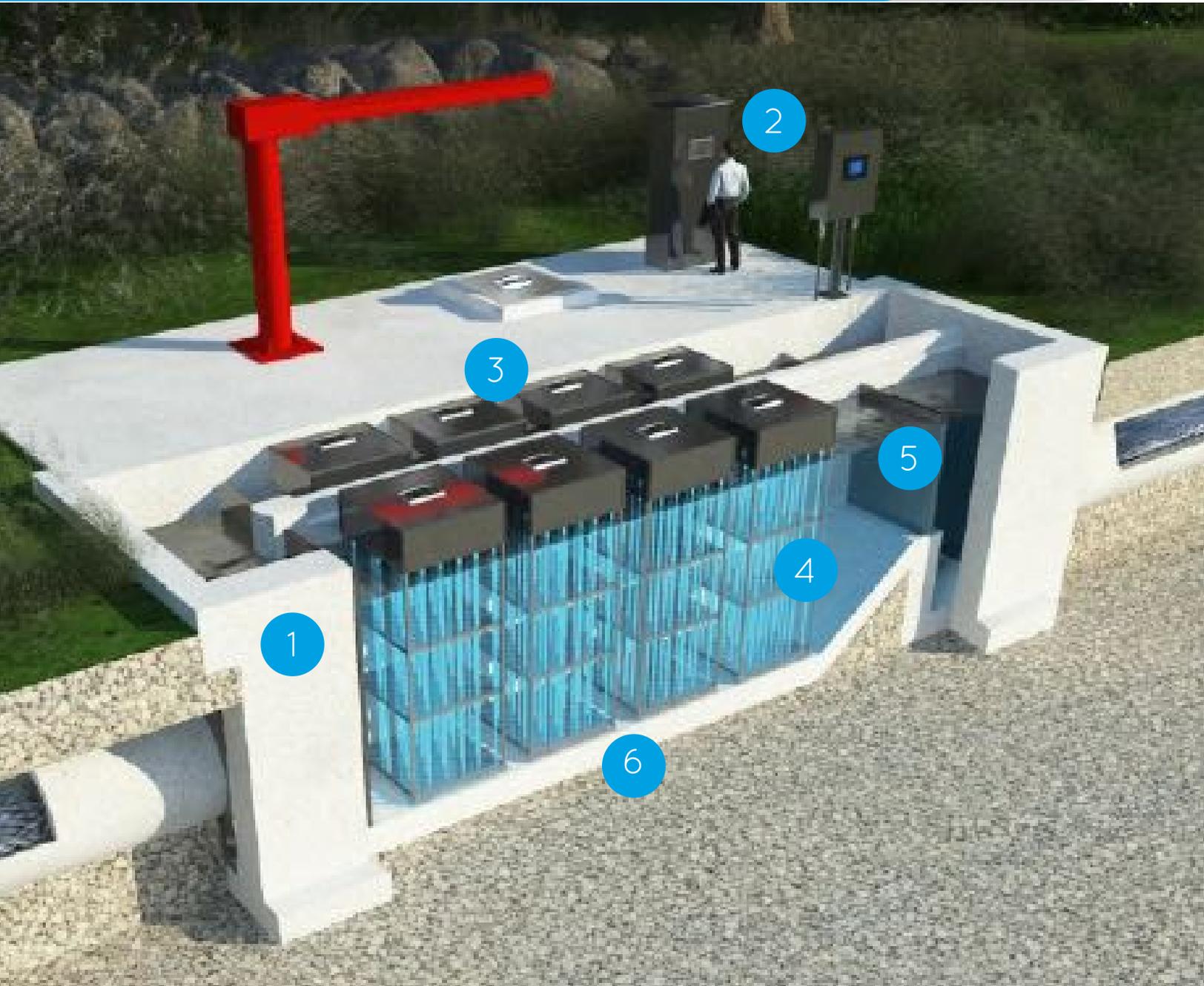
316L electropolished stainless steel vessels are piped to and from the plant's infrastructure. Systems incorporate state of the art lamp and ballast technologies and can be customized to meet existing footprints.

Depending on the requirements, systems can be provided with such options as automatic quartz cleaning, PLC controls, online UV transmission monitoring and supplemental chemical recirculation tanks.

Key Benefits

- Gravity or pressure fed
- Indoor or outdoor installation
- Remote stainless steel Ballast Control Centers
- Automatic quartz cleaning
- Uses high output or amalgam lamps up to 1200 watts per lamp
- Select models bioassayed at UV Validation and Research Center of New York, Johnstown, NY
- Hydraulically tested and profiled

Vertical VC Series



1 Concrete Channel

2 BCC / SCC

3 Vertical Modules

4 Automatic Cleaning

5 Level Control

6 155, 320 & 600 Watts

Vertical Operation

Modules are placed into a pre-poured concrete channel. Once in place, the module's utilities (power, data and air) are connected to the Ballast Control Center (BCC) or Power Distribution Center (PDC) as well as to the System Control Center (SCC-PLC).

Wastewater enters the channel and is exposed to UVC light. UV lamps turn On and Off in relation to flow rate, water quality and lamp aging. A level control system at the discharge end of the channel (Weir) ensures that the water is properly exposed to UVC light.

The automatic cleaning system wipes the quartz sleeves and UV sensor on a periodic basis. This prevents minerals and solids from building and plating.

Operators inspect the system to ensure that the lamps are functioning and that they are producing the required UVC light. Lamp out and low UV output alarms will direct operators to service issues.

Modules can be removed from the channel for seasonal storage or for supplemental cleaning.



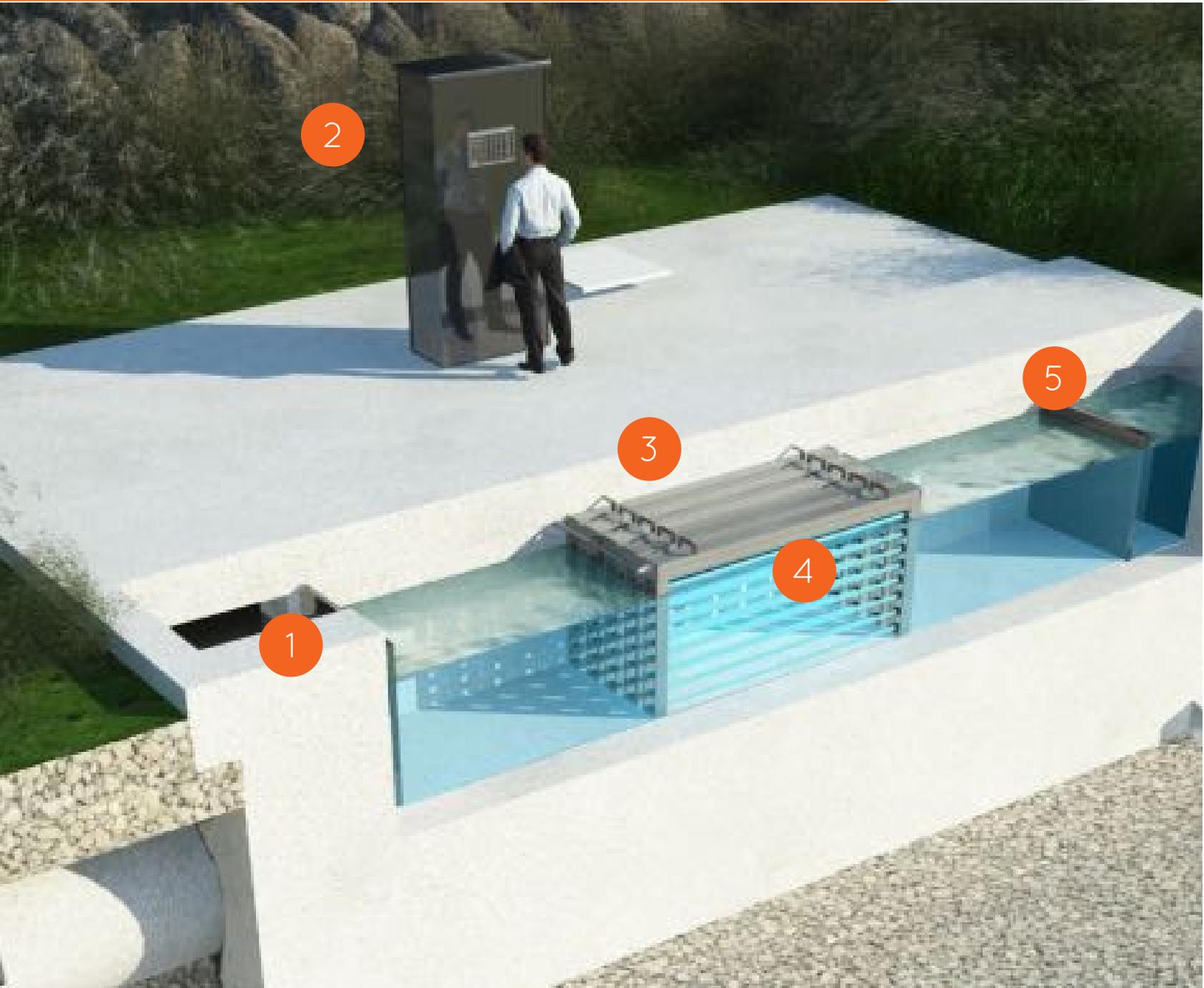
Design

- 30" or 60" water level
- Biologically Validated
- High Output 80 and 155 watt
- High Intensity Amalgam 150, 320, 600 watt
- Automatic quartz cleaning

Highlights

- Low operational costs due to flow pacing
- All lamp connections above water
- Fastest lamp change
- First vertical amalgam installation 2003
- Retro fits into existing UV or chlorine contact

Horizontal **GLOW** Series



1 Concrete Channel

2 BCC / SCC

3 Horizontal Modules

4 Automatic Cleaning

5 Level Control

Horizontal Operation

Modules are lowered into a pre poured concrete or packaged stainless steel channel. Once in place, the module's utilities (power, data and air) are connected to the Ballast Control Center (BCC) and to the System Control Center (SCC-PLC).

Wastewater enters the channel and is exposed to UVC light. A level control system at the discharge end of the channel (Weir) ensures that the water is properly exposed to UVC light.

The **optional** automatic quartz cleaning system wipes the sleeves and UV sensor on a periodic basis. This prevents minerals and solids from building and plating to the quartz material.

Operators inspect the system to ensure that the lamps are functioning and that they are producing the required UVC light. Lamp out and low UV output alarms will direct operators to service issues. Modules can be removed from the channel for seasonal storage or for supplemental cleaning.



Design

- Packaged stainless or pre poured concrete
- Biologically Validated
- High Output 80 & 155 watt
- High Intensity Amalgam 320 & 400 watt
- Automatic quartz cleaning

Highlights

- First high output installation 1999
- First amalgam installation 2003
- Ability to treat low flows <25,000 gpd
- Ability to treat larger flows < 10 mgd
- Customized channels
- Retro-fit existing UV systems

NONCON

S E R I E S



The “**NONCON 5000**” Series is a “flow through” fluoropolymer (aka FEP/Teflon™) style of ultraviolet (UV) water and wastewater disinfection systems.

Unlike our other systems where the UV lamps are immersed in the water (using protective quartz sleeves), the “NONCON 5000” uses non conductive transparent fluoropolymer tubes to transport the water close to the UV lamps.

The UV lamps are suspended in the channel (lamps are not in water but in air) and shine germicidal rays (@ 254 nm) through the fluoropolymer tubes directly at their intended targets.

Key Benefits

- Lowest maintenance of any UV system
- Stainless steel disinfection reactor OR Open concrete channel insert for large flows
- Low-pressure high-output UV lamps
- Fluoropolymer FEP (aka Teflon) flow tubes
- Multi-voltage power (120-277)
- UV monitoring
- Lamp status and run time indicators
- 45 or 80 psi pressure-rated
- Remote Ballast Control Center (BCC)
- Environmental temperature management