

The UVS Series of ultraviolet water disinfection systems (UV reactors) are designed to address the high flow rate and high dosage requirements for microbial disinfection, Chlorine/Chloramine Removal, and Ozone Destruction applications. The patented design of the UVS series utilizes 99% of the UV energy emitted from the LP Amalgam lamps into the water flow channel. The UVS Series of water disinfection systems are the most efficient UV treatment chambers on the market. The high efficiency of UVS systems require fewer lamps and a smaller chamber to treat a given volume of water. This results in substantial savings in operational costs and maintenance costs, as much as a 90% savings!

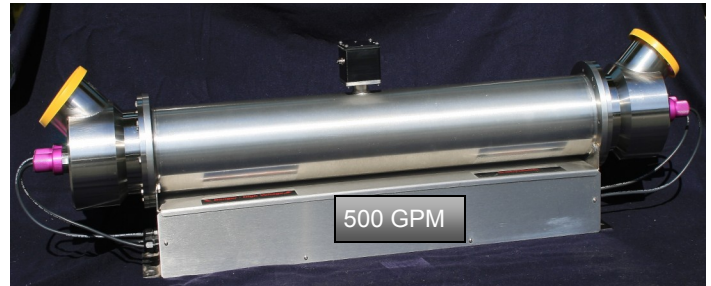
Uniform UV energy dose is critical through disinfection. This is difficult to achieve with traditional systems due to the absorption of the 254 nm UV into the stainless steel housing. The patented design resolves this problem. Nearly 99% of the UV energy stays in the water treatment chamber, delivering high levels of UV energy, uniform in dosage, inside the flow chamber for both 185 nm and 254 nm wavelengths. This is accomplished without baffles or other potentially unsanitary devices.

Benefits of the UVS Water Treatment Systems

The unique chamber design of the UVS Series treatment chambers have these important benefits:

- Lower Overall Cost of Ownership
- Reduced Energy Consumption and Costs
- Smaller Footprint
- Fewer and/or Shorter Lamps
- Static Operation up to 1 hour
- Vertical and Horizontal Installation Configurations
- More Sanitary Design

The compact UVS438S-500 is rated at 500 GPM for disinfection and is only 40" in length. Only two LP Amalgam lamps are required, drawing just 200 Watts of power.

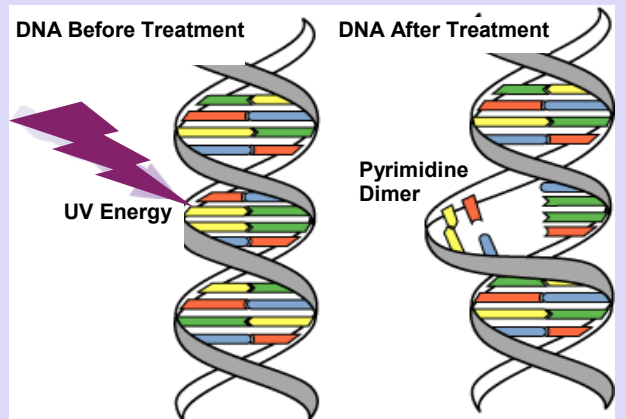


How Does Ultraviolet Light Disinfect Water?

Short wave UV and Vacuum UV are able to penetrate the cell walls of microorganisms, and subsequently disrupt the cells in such a way as to prevent them from replicating. Microorganisms that are unable to replicate are unable to cause human infection or create damaging situations for manufactured products and/or processing equipment.

The primary mechanism by which UV inactivates microorganisms is the creation of Pyrimidine Dimers. These are bonds that are formed between adjacent pairs of thymine or cytosine pyrimidines on the same DNA or RNA strand. Once the dimers are formed the microorganism is "locked-up" and unable to reproduce.

The peak wavelengths for cellular penetration and disruption are in the range of 250 - 270 nm. This is why low pressure UV lamps with a peak output of 253.7 nm are so effective for disinfection purposes.



Common UV Water Purification Applications:

- Disinfection
- Chlorine/Chloramine Removal
- Ozone Destruction
- Advanced Oxidation
- TOC Reduction
- Urea Reduction

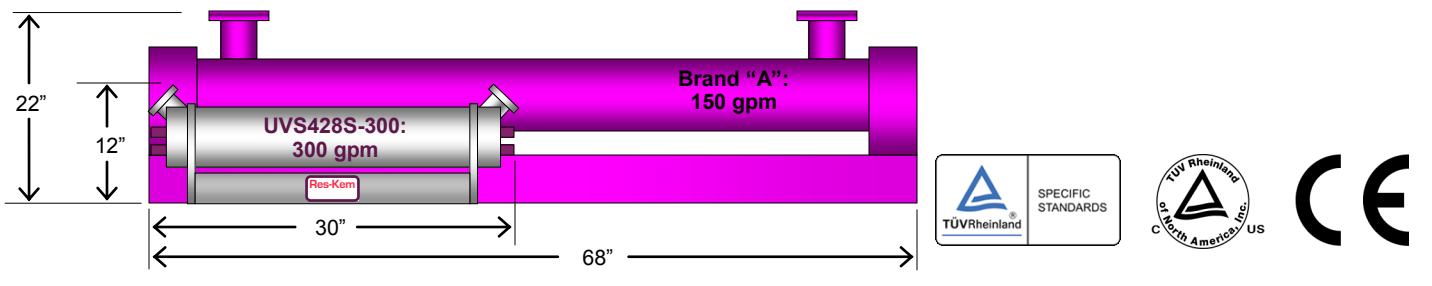
UVS water treatment systems are available in a variety of sizes and configurations to meet the needs of virtually any water purification application. The unique patented design of UVS systems allows for treatment of a given volume of water with fewer and/or shorter lamps, in less space, and with lower energy costs. For applications greater than 500 gpm, multiple systems can easily be combined in series or in parallel to meet the necessary flow rate requirements.

UVSI systems are supplied as standard with Amalgam High Intensity Low Pressure UV lamps and Electronic Ballasts. Water contact surfaces are 316L stainless steel, Teflon, Viton, and quartz. UVS systems are NRTL listed (UL/CSA equivalents) and CE marked.

Model Number:	UVS322S-100	UVS328S-150	UVS338S-225	UVS428S-300	UVS438S-500
Flow Rate for Disinfection* (99% UVT)	100 gpm (23 m ³ /hr)	150 gpm (34 m ³ /hr)	225 gpm (50 m ³ /hr)	200 gpm (45 m ³ /hr)	500 gpm (112 m ³ /hr)
Flow Rate for Disinfection* (95% UVT)	65 gpm (15 m ³ /hr)	100gpm (23m ³ /hr)	150 gpm (34 m ³ /hr)	200 gpm (45 m ³ /hr)	333 gpm (75 m ³ /hr)
Number of UV Lamps	1	1	1	2	2
Lamp Length inches (mm)	22" (559 mm)	28" (711 mm)	38" (914 mm)	28" (711 mm)	38" (914 mm)
Reactor Chamber Size L x W x H inches (mm)	24" x 6" x 10" (610 x 152 x 254)	30" x 6" x 10" (762 x 152 x 254)	40" x 6" x 10" (1016 x 152 x 254)	30" x 8" x 12" (762 x 203 x 305)	40" x 8" x 12" (1016 x 203 x 305)
Control Unit Size W x D x H inches (mm)	8" x 4" x 9" (203 x 102 x 229)	8" x 4" x 9" (203 x 102 x 229)	8" x 4" x 9" (203 x 102 x 229)	8" x 4" x 9" (203 x 102 x 229)	8" x 4" x 9" (203 x 102 x 229)
Total Operating Power	100 Watts	100 Watts	125 Watts	160 Watts	200 Watts
Electrical Requirements	1.0 amps @ 120V 0.5 amps @ 220V	1.0 amps @ 120V 0.5 amps @ 220V	1.2 amps @ 120V 0.6 amps @ 220V	1.4 amps @ 120V 0.7 amps @ 220V	1.7 amps @ 120V 0.9 amps @ 220V
Inlet / Outlet Size (sanitary flange standard)	2"	2"	2"	3"	3"
	Adapters are available for virtually any size or type of connection (sanitary flange, NPT, and ANSI 150 # bolt-hole flange)				
Max Operating Pressure	150 p.s.i. (10 bar)	150 p.s.i. (10 bar)	150 p.s.i. (10 bar)	150 p.s.i. (10 bar)	150 p.s.i. (10 bar)
Operating Temperature Range	3° - 40° C 36° - 104° F	3° - 40° C 36° - 104° F	3° - 40° C 36° - 104° F	3° - 40° C 36° - 104° F	3° - 40° C 36° - 104° F
UV Intensity Monitor (NIST Traceable)	UV Intensity Monitor provides real-time validation of UV dose and is strongly recommended for any UV system				
	OPT	OPT	OPT	OPT	OPT
Stainless Steel Control Box Rated: NEMA 4 and IP-65	Standard	Standard	Standard	Standard	Standard
4-20 mA Signal for Remote Monitoring and Control	Standard	Standard	Standard	Standard	Standard
Alarms and LED Indicators for Operating Status	Standard	Standard	Standard	Standard	Standard

* Based on 30 mJ/cm² or 30,000 μW×sec/cm² (1 mJ/cm² = 1000 μW×sec/cm²)

Size Comparison of UVS428-300 (300 gpm) vs. Competitive System that treats only 150gpm



About Res-Kem Corp:

Since 1963 Res-Kem has been a leader in commercial and industrial water treatment systems. Res-Kem is a manufacturer, supplier and provider of service for water treatment systems in industrial and commercial applications for drinking water and process water. Res-Kem designs, engineers, and assembles a full line of quality standard and custom water treatment equipment for applications in: Power Generation, Electronics, Chemicals, Pharmaceuticals, Food and Beverage, Textiles, Paper and Printing.