

# Steris®

ULTRAVIOLET DISINFECTION SYSTEM

# PLATINUM



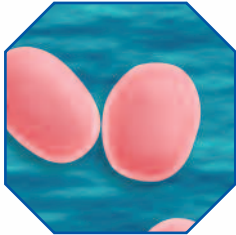
System Tested and Certified by NSF International against NSF/ANSI Standard 55 for Disinfection Performance, Class A.

MODELS: SPV-1.5, SPV-2.5, SPV-3.5, SPV-6, SPV-8, SPV-12, SPV-15, SPV-20

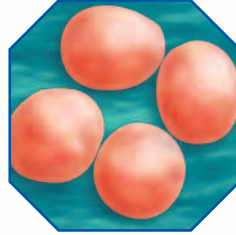
*ensuring the safety of your water*

## Sterilight® Platinum will ensure the safety of your water...

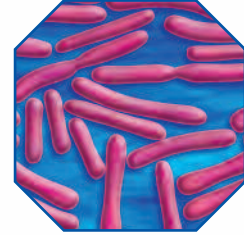
Sterilight's PLATINUM UV disinfection systems offer simple, safe and effective disinfection. If water-borne pathogens, including bacteria, virus, protozoa and others are a concern, Sterilight PLATINUM UV is the answer!



Giardia lamblia



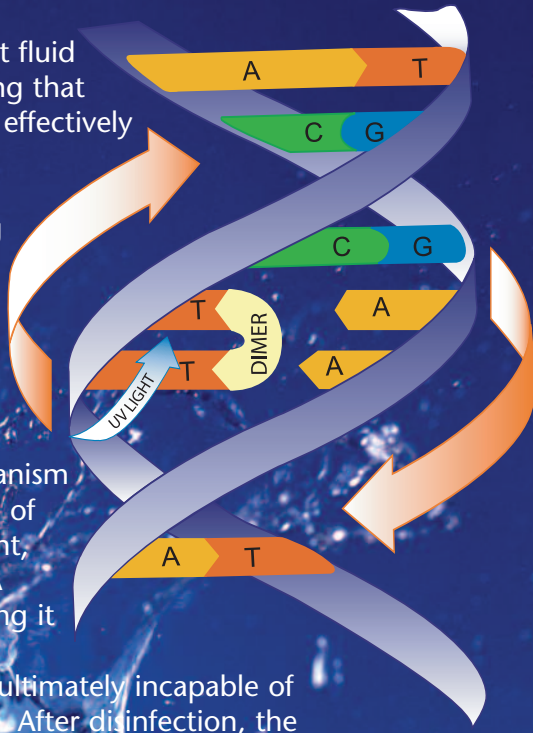
Cryptosporidium



E. coli

Disinfection using ultraviolet (UV) light is fast becoming the ecological choice in disinfection techniques. UV effectively destroys microbial contaminants without adding anything to the water. Unlike chlorine where there is the possibility of potentially harmful by-products created during its disinfection process, UV creates no residual disinfection by-products. The process is quickly completed within the confines of the reactor. Unlike chlorine and ozone treatments, no external tanks are required and no hazardous chemicals need to be handled.

Sterilight's PLATINUM UV systems incorporate a unique stainless steel reactor design based on advanced computational fluid dynamic (CFD) modeling. These new reactors create an extremely efficient fluid flow path, ensuring that ultraviolet light is effectively delivered to any microbiological organism residing in the water. As the organisms pass through the reactor, a powerful high-output UV lamp irradiates the organism with a lethal dose of germicidal UV light, rupturing its DNA (or RNA), rendering it incapable of reproducing and ultimately incapable of causing infection. After disinfection, the water exits the reactor ready for use.



Looking for a system that provides more information than just when it is time to change your lamp? Look no further than Sterilight's new PLATINUM ICE CONTROLLER. This revolutionary device includes a small touch panel switch providing a graphical representation of a variety of system functions. Depress switch to obtain UV output represented in "% UV intensity output". Depress switch two times to obtain remaining lamp life and depress three times to show total controller runningtime.



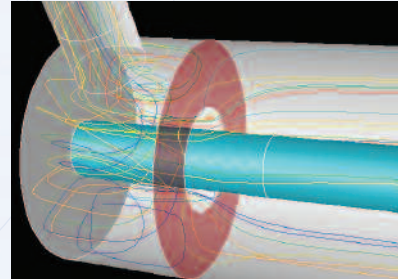
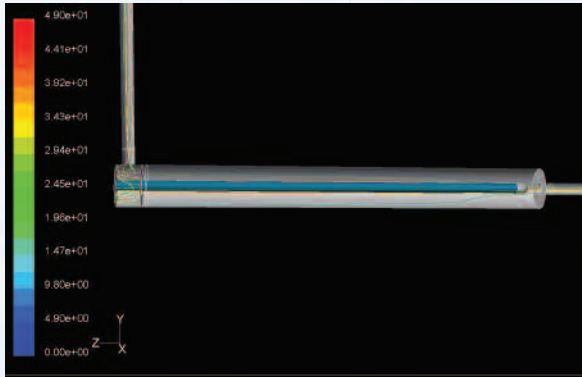
UV disinfection systems are used around the world treating water, air and other viscous fluids. Applications are broad and ever expanding. They include residential, commercial, institutional and now municipal applications. Sterilight systems have been installed and operating around the world since 1986. Sterilight has become a world leader in the design and manufacture of UV disinfection systems and continues to make many advancements within the industry.

# Reactor

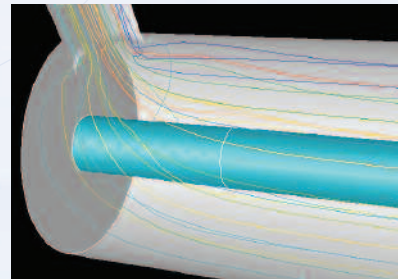


Sterilight's new PLATINUM reactors were designed using advanced computational fluid dynamics (CFD) to optimize the fluid flow path, ensuring that ultraviolet light is more efficiently delivered to any microbiological organism residing in the water. This achievement represents a marked improvement over traditional designs, which tend to suffer from reduced overall efficiency due to non-uniform dose distribution within the reactor.

improvement over other products which allow a portion of the water to take a "fast-track" short-circuit path along the reactor wall near the outlet port, with the result that some microorganisms receive less than optimal germicidal dose.



This CFD image shows water track path lines as they approach and go through the Platinum reactor's unique flow distributor prior to exiting the reactor. This flow distributor ensures that the water follows the most optimum path in this region, enabling more effective delivery of germicidal UV energy to any microorganism in this zone.



Other systems, as shown at left without the Sterilight flow distributor, allow a portion of the water to take a "fast-track" short-circuit path (dark blue lines) along the reactor wall near the outlet port. This short-circuit path is flowing faster as it approaches the outlet, and even exits the reactor early before traveling the full lamp length! Coupled with the fact that the UV intensity is lower near the reactor wall, microorganisms following this short-circuit path will receive lower germicidal dose.

This new Sterilight reactor starts with an axial flow inlet that directs the fastest flowing fluid to the region of highest intensity close to the UV lamp. Just prior to the outlet, the Sterilight PLATINUM design incorporates a unique flow distributor which again forces the water into close proximity to the lamp. This represents a marked

# Controller



IF YOU ARE LOOKING FOR THE MOST ADVANCED UV CONTROLLER ON THE MARKET....LOOK NO FURTHER THAN STERILIGHT'S NEW PLATINUM ICE CONTROLLER.



This patented controller features an integral Smart Switch™, which provides a graphical interface and selection switch all in one compact unit. The PLATINUM ICE controller provides features typically found only on commercial systems costing thousands of dollars more. The new PLATINUM ICE provides:

- 100-250 VAC universal operation
- Visual UV intensity readings (reads in % UV intensity output)
- Visual elapsed time meter (counts down remaining days between lamp changes and provides for total running time of the controller)
- Constant current output over entire input line voltage
- Active power factor correction
- EMI/RFI filtering (meets new CE directives)
- One controller to drive all lamps
- Isolated power source for alarm system
- True lamp current detection
- Full diagnostic check on start-up
- Separate fuse protection for controller circuit
- Dry contacts (for solenoid, lamps, audible alarms, etc.)
- RJ-11 communication port (sensor output and future RF remote alarm package)
- Universal IEC power input connector



## Connector

Once again, Sterilight offers an industry first: an interlock switch moulded into the new **Safety-Loc™** lamp connector. The interlock switch prevents lamp operation in the event that the lamp is not fully inserted into the reactor chamber. This new design

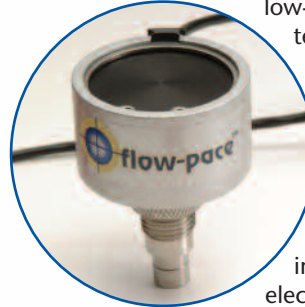


allows the user quick and simple removal of the lamp connector by hand without any special tools or assistance. This connector is keyed to the reactor chamber, allowing for the correct lamp orientation within the reactor and thereby eliminating

potentially false sensor readings. The Safety-Loc™ connector is keyed to the Sterilume™ lamps, ensuring the integrity of the manufacturer's lamp/controller design selection.

## UV Sensor

Sterilight's new **Flow-Pace™** UV sensor is a discrete 254nm sensor which incorporates the latest in UV detection components for stable, long-life reliability. In addition, the UV sensor is capable of detecting a

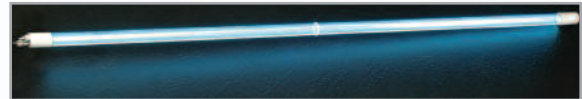


low-flow condition with a novel design technique. The processing electronics are all enclosed in a compact, watertight enclosure. This patent pending design, when coupled with the new Platinum ICE controller, allows for 2-stage flow pacing that automatically adjusts lamp power to the water flow. This unique design incorporates the sensor and calibration electronics in an integral unit, thus

eliminating the two separate components used in competitive units. This "flow-pacing" results in lower power consumption, reduced operational costs and ultimately less heat transfer into the water!

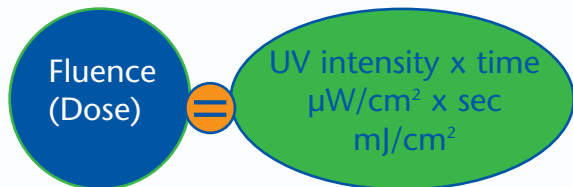
## Lamps **Sterilume™**

Sterilight's Sterilume™-HO ultraviolet disinfection lamps use new low-pressure high-output lamp technology. These lamps incorporate an advanced proprietary lamp coating, offering consistent UV output over the life of the lamp. These lamps offer superior cold water starting conditions, ideal for those cold weather climates. High-output lamps offer more UV output than traditional designs, therefore more compact systems can be designed to deliver even higher UV fluence (dose). Sterilight offers a full one year warranty on their Sterilume™-HO lamps!



## Sizing

The UV fluence (dose) delivered by a given reactor is dependent on many factors, including water quality and flow rate. Actual delivered fluence is flow dependent. As fluence is a product of UV intensity and residence time within the reactor, changes in the flow rates through a reactor will change the delivered fluence. NSF/ANSI Standard 55 requires that the UV system deliver a minimum UV fluence of **40 mJ/cm<sup>2</sup>** at the alarm set-point. The accompanying graph shows how the delivered fluence will be affected at varying UV transmittance levels. It should be noted that as the NSF/ANSI certified systems contain a flow restrictor to limit the maximum flow at the certified level. Therefore at maximum flow, the systems are capable of delivering much higher fluences at higher levels of water quality. As an example, if your water has UVT of 95%, the delivered fluence of the system will be in excess of 95 mJ/cm<sup>2</sup>. Conversely, systems that flow less than the "validated" flow will result in an increased fluence (e.g. 40 mJ/cm<sup>2</sup> @ 20 gpm ~ (at full rated flow) 80 mJ/cm<sup>2</sup> @ 10 gpm (40 x 20/10).



Note: 1mJ/cm<sup>2</sup> = 10mJ/m<sup>2</sup> = 1000μWsec/cm<sup>2</sup>

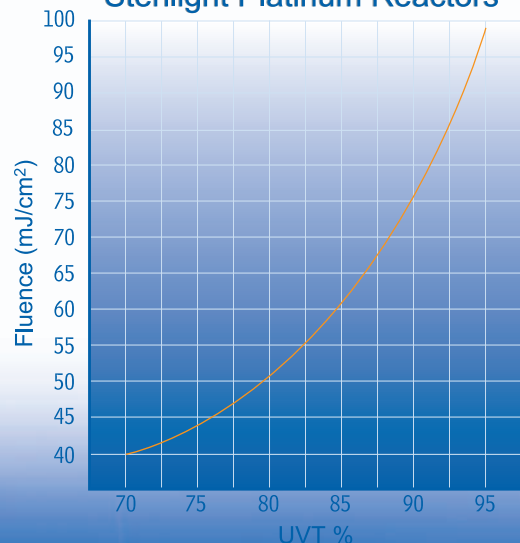
As a note, microorganisms require varying UV fluence levels for destruction. Some of the common organisms and their corresponding fluence level are shown below.

MICROORGANISM	FLUENCE (DOSE)
E. coli <sup>2</sup>	6.6 mJ/cm <sup>2</sup>
Cryptosporidium parvum <sup>2</sup>	<10 mJ/cm <sup>2</sup>
Giardia lamblia <sup>2</sup>	<10 mJ/cm <sup>2</sup>
Hepatitis Virus <sup>1</sup>	8 mJ/cm <sup>2</sup>
Influenza Virus <sup>1</sup>	6.6 mJ/cm <sup>2</sup>
Shigella dysenteriae <sup>2</sup>	4.2 mJ/cm <sup>2</sup>
Legionella pneumophila <sup>2</sup>	3.8 mJ/cm <sup>2</sup>
Salmonella paratyphi <sup>2</sup>	6.1 mJ/cm <sup>2</sup>

1. 2-log reduction

2. 4-log reduction

### Sterilight Platinum Reactors



# Product Specifications

Models		SPV-1.5	SPV-2.5	SPV-3.5	SPV-6	SPV-8	SPV-12	SPV-15	SPV-20
Rated Flow Rate		1.5 gpm <sup>1</sup> (5.7 lpm) (0.5m <sup>3</sup> /hr.)	2.5 gpm <sup>1</sup> (9.5 lpm) (0.6m <sup>3</sup> /hr.)	3.5 gpm <sup>1</sup> (13.2 lpm) (0.8m <sup>3</sup> /hr.)	6 gpm <sup>1</sup> (22.7 lpm) (1.4m <sup>3</sup> /hr.)	8 gpm <sup>1</sup> (30.3 lpm) (1.8m <sup>3</sup> /hr.)	12 gpm <sup>1</sup> (45.4 lpm) (2.7m <sup>3</sup> /hr.)	15 gpm <sup>1</sup> (56.8 lpm) (3.4 m <sup>3</sup> /hr.)	20 gpm <sup>1</sup> (75.7 lpm) (4.5m <sup>3</sup> /hr.)
UV Intensity Monitor		yes	yes	yes	yes	yes	yes	yes	yes
Flow Pacing		yes	yes	yes	yes	yes	yes	yes	yes
Elapsed Time Meters	Remaining Lamp Life	yes	yes	yes	yes	yes	yes	yes	yes
	Total Running Hours	yes	yes	yes	yes	yes	yes	yes	yes
Flow Restrictor		yes	yes	yes	yes	yes	yes	yes	yes
Dry Contacts		yes	yes	yes	yes	yes	yes	yes	yes
Safety Interlock		yes	yes	yes	yes	yes	yes	yes	yes
Lamp Replacement Reminder		yes	yes	yes	yes	yes	yes	yes	yes
Diagnostic Check		yes	yes	yes	yes	yes	yes	yes	yes
Communication Port		yes	yes	yes	yes	yes	yes	yes	yes
Reactor Chamber Material		316L SS <sup>2</sup>	316L SS <sup>2</sup>	316L SS <sup>2</sup>	316L SS <sup>2</sup>	316L SS <sup>2</sup>	316L SS <sup>2</sup>	316L SS <sup>2</sup>	316L SS <sup>2</sup>
Electrical	Volts	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.	100-250V./ 50-60Hz.
	Power Consumption	20W	25W	35W	42W	52W	73W	88W	110W
	Lamp Watts	15W	20W	30W	36W	45W	65W	80W	100W
Maximum Operating Pressure		8.62 bar (125 psi)	8.62 bar (125 psi)	8.62 bar (125 psi)	8.62 bar (125 psi)	8.62 bar (125 psi)	8.62 bar (125 psi)	8.62 bar (125 psi)	8.62 bar (125 psi)
System Pressure Drop		0.3 bar (4psi) at 50% rated flow							
Ambient Water Temperature		2-40°C (36-104°F)	2-40°C (36-104°F)	2-40°C (36-104°F)	2-40°C (36-104°F)	2-40°C (36-104°F)	2-40°C (36-104°F)	2-40°C (36-104°F)	2-40°C (36-104°F)
		(UVT at 75% stated at 20°C please consult factory for other water temperatures)							
Maximum Ambient Air Temperature		50°C (122°F)	50°C (122°F)	50°C (122°F)	50°C (122°F)	50°C (122°F)	50°C (122°F)	50°C (122°F)	50°C (122°F)
Rated Service Life of Lamp		9000 hours	9000 hours	9000 hours	9000 hours	9000 hours	9000 hours	9000 hours	9000 hours
Replacement Lamps		S100RL-HO	S150RL-HO	S200RL-HO	S320RL-HO	S410RL-HO	S600RL-HO	S740RL-HO	S950RL-HO
Dimensions	Chamber (L x D)	13.8" x 3.5" (350.52 x 89 mm)	15.8" x 3.5" (401.32 x 89 mm)	17.8" x 3.5" (452.12 x 89 mm)	22.8" x 3.5" (579.12 x 89 mm)	26.0" x 3.5" (660.4 x 89 mm)	30.7" x 3.5" (779.78 x 89 mm)	39.4" x 3.5" (1000.76 x 89 mm)	47.6" x 3.5" (1130.3 x 89 mm)
	Controller (L x W x H)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)	10.75" x 4.5" x 2" (254 x 114 x 53 mm)
Shipping Weight		11 lbs (5 kg)	12 lbs (5.4 kg)	13 lbs (5.9 kg)	16 lbs (7.3 kg)	18 lbs (8.2 kg)	20 lbs (9 kg)	25 lbs (11.3 kg)	30 lbs (13.6 kg)
Inlet/Outlet Port Size		1/2" MNPT	1/2" MNPT	1/2" MNPT	Combo 3/4" FNPT/ 1" MNPT	Combo 3/4" FNPT/ 1" MNPT	Combo 3/4" FNPT/ 1" MNPT	Combo 3/4" FNPT/ 1" MNPT	Combo 3/4" FNPT/ 1" MNPT
NSF/ANSI Standard 55 Class "A" Validation		yes	yes	yes	yes	yes	yes	yes	yes
Other Approvals		 	 	 	 	 	 	 	 

1. Flow rates stated as determined by NSF/ANSI Standard 55 testing.

2. All reactors are electropolished and passivated.

## Water Quality Guidelines

- Iron: < 0.3 ppm (0.3 mg/L)
- Hardness: < 7gpg (120 mg/L)
- Turbidity: < 1 NTU
- Manganese: < 0.05 ppm (0.05 mg/L)
- Tannins: < 0.1 ppm (0.1 mg/L)
- UV Transmittance: > 75% (UVT at 75% stated at 20°C please consult factory for other water temperatures or if UVT level is <75%)



R-Can Environmental Inc is proud to be an NSF certified manufacturer. NSF International's Standards are voluntary consensus standards, "developed with the active participation of public health and other regulatory officials, users, and industry".

NSF certification assures regulators and consumers that a credible, objective, independent third party has verified product compliance with specific standards.

R-Can Environmental Inc is located in Guelph, Ontario, Canada, which is physically situated 40 miles to the west of Toronto in the heart of Southwestern Ontario's manufacturing district. A modern facility houses all manufacturing, distribution, sales and marketing operations. R-Can's total focus is in the water treatment industry and has been manufacturing UV systems under the Sterilight and other brand names since 1989.

R-Can's corporate commitment is to provide quality water treatment products and exceptional service, all at the most economical prices!

### General Installation and Operating Requirements

- Lamps must be replaced after 9,000 hours (approximately 1 (one) year) of continuous service.
- Quartz sleeves and UV sensor window will require periodic cleaning. Please refer to Owner's Manual for cleaning details and frequency.
- Proper maintenance of any pre-treatment equipment is essential to the proper functioning of a UV system. Please refer to Owner's Manual for greater detail.
- Replacement parts and service are available through Authorized Representatives around the world. Please contact R-Can for further information.



### System Tested and Certified by NSF International against NSF/ANSI Standard 55 for Disinfection Performance, Class A.

This class A system conforms to NSF/ANSI 55 for the disinfection of microbiologically contaminated water that meets all other public health standards. The system is not intended to convert wastewater or raw sewage to drinking water. The system is intended to be installed on visually clear water.

NSF/ANSI 55 defines wastewater to include human and/or animal body waste, toilet paper, and any other material intended to be deposited in a receptacle designed to receive urine and/or feces (blackwaste); and other waste materials deposited in plumbing fixtures (greywaste).

If this system is used for the treatment of untreated surface waters or ground water under the direct influence of surface water, a device found to be in conformance for cyst reduction under the appropriate NSF/ANSI Standard shall be installed upstream of the system.



Sterilight systems carry a 7 year warranty on the stainless steel reactor chamber, a 1 year warranty on UV lamps and monitor probes, and a 5 year pro-rated warranty on all other components.



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