

# SANITRON™

ULTRAVIOLET WATER PURIFIERS

ATLANTIC **AU** ULTRAVIOLET  
CORPORATION



Model S2400C  
40 GPM

**ULTRAVIOLET WATER PURIFIERS**

## ADVANTAGES

### **Effective**

Virtually all microorganisms are susceptible to **SANITRON™** ultraviolet disinfection.

### **Economical**

Hundreds of gallons are purified for each penny of operating cost.

### **Safe**

No danger of overdosing, no addition of chemicals.

### **Fast**

Water is ready for use as soon as it leaves the purifier – no further contact time required.

### **Easy**

Simple installation and maintenance. Compact units require minimum space.

### **Automatic**

Provides continuous or intermittent disinfection without special attention or measurement.

### **Chemical Free**

No chlorine taste or corrosion problems.

### **Versatile**

Capacities available from 2 to 416 gallons per minute (g.p.m.).

(For larger capacities please refer to our **MEGATRON™** Ultraviolet Water Disinfection catalog.)

## GERMICIDAL ULTRAVIOLET



Ultraviolet water purification is a unique and rapid method of water disinfection without the use of heat or chemicals.

**SANITRON™** Ultraviolet Purifiers utilize germicidal ultraviolet lamps that produce short wave radiation lethal to bacteria, viruses and other microorganisms present in water.

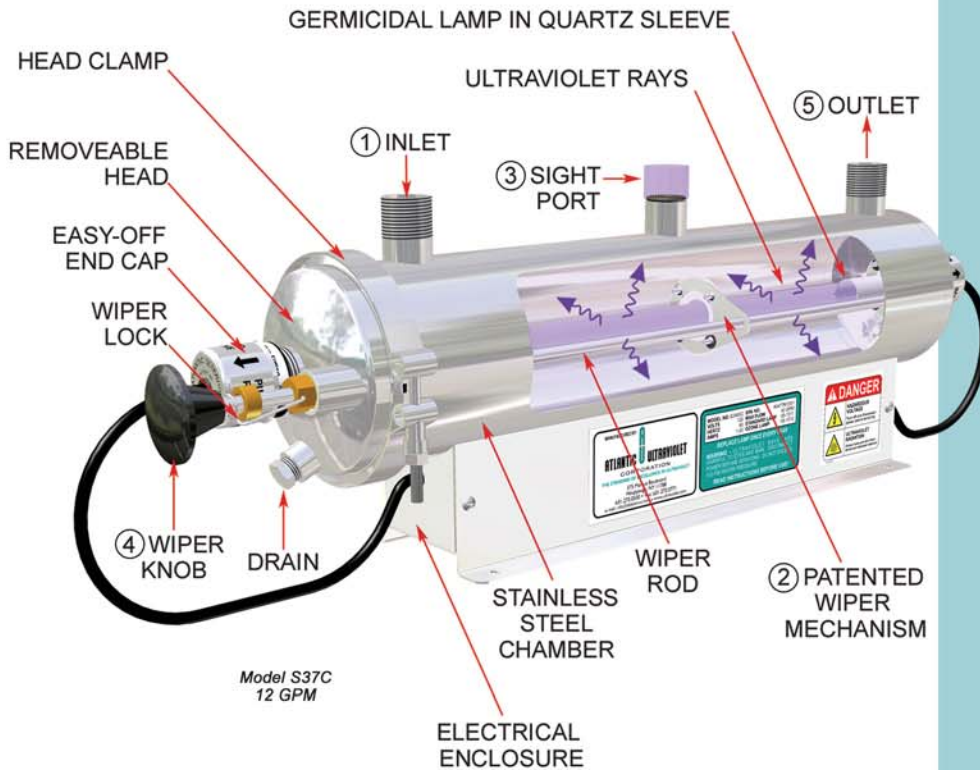
Through the years ultraviolet technology has become well established as a method of choice for effective and economical water disinfection.

**SANITRON™** Ultraviolet Water Purifiers are the ideal solution for an ever growing range of water treatment applications.



## PRINCIPLE OF OPERATION

## ABOUT US



- ① The water enters the purifier and flows into the annular space between the quartz sleeve and the chamber wall.
- ② The wiper segments induce turbulence in the flowing liquid to assure uniform exposure of suspended microorganisms to the lethal ultraviolet rays.
- ③ Translucent sight port provides positive indication of germicidal lamp operation.
- ④ The wiper assembly facilitates periodic cleaning of the quartz sleeve without any disassembly or interruption of purifier operation.
- ⑤ Water leaving the purifier is instantly ready for use.

Since 1963, Atlantic Ultraviolet Corporation has pioneered the discovery and development of beneficial uses of ultraviolet energy. Over the years these efforts have led to the development of valuable, cost effective and environmentally sound techniques and products now known and respected throughout the world.

Atlantic Ultraviolet's application specialists assist customers in the selection of germicidal lamps and equipment. Their specialized knowledge is a valuable resource in formulating effective and cost-conscious ultraviolet solutions. Extensive inventories and a dedicated staff enable Atlantic Ultraviolet to fulfill its commitment to provide fast deliveries and responsive customer service.



[ultraviolet.com](http://ultraviolet.com)

## COMMERCIAL & INDUSTRIAL

### Flexibility

System components are readily reconfigured to meet changing flow and process requirements.

### Independent Monitoring

Single lamp chamber design enables separate output monitoring of each ultraviolet lamp.

### Standby Capacity

Reserve chambers permit shut-down or replacement of individual components without interruption of service.

### Special Options

Protective Coating - for seawater & corrosive environments.

Sanitary & Custom Fittings - for system compatibility. Special Configurations - for TOC and ozone reduction.

Shown with supplied Interconnect Piping, optional Guardian™ Digital Ultraviolet Monitor, Solenoid Valve, Flow Control Valve and customer supplied Piping, Union and Shut Off Valve.



Model S5,000C  
83 GPM

| MODEL                 | GALLONS PER MINUTE | GALLONS PER HOUR | INLET AND OUTLET <sup>⑥</sup> | REPLACEMENT LAMP(S) | POWER CONSUMPTION <sup>⑦</sup> | UNIT DIMENSIONS (Inches)       |                                |                                | SHIPPING DATA (lbs.) |         |
|-----------------------|--------------------|------------------|-------------------------------|---------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------|---------|
|                       |                    |                  |                               |                     |                                | Length                         | Width                          | Height                         | Gross Wt.            | Net Wt. |
| S5,000C <sup>①</sup>  | 83                 | 5,000            | 2" NPT                        | 05-1311 (2)         | 280 Watts                      | 52 <sup>1</sup> / <sub>8</sub> | 17                             | 15                             | 116                  | 85      |
| S10,000C <sup>②</sup> | 166                | 10,000           | 2" NPT                        | 05-1311 (4)         | 560 Watts                      | 52 <sup>1</sup> / <sub>8</sub> | 21 <sup>1</sup> / <sub>8</sub> | 34 <sup>3</sup> / <sub>4</sub> | 267                  | 188     |
| S15,000C <sup>③</sup> | 250                | 15,000           | 2" NPT                        | 05-1311 (6)         | 840 Watts                      | 52 <sup>1</sup> / <sub>8</sub> | 21 <sup>1</sup> / <sub>8</sub> | 53 <sup>3</sup> / <sub>4</sub> | 400                  | 263     |
| S20,000C <sup>④</sup> | 333                | 20,000           | 2" NPT                        | 05-1311 (8)         | 1120 Watts                     | 52 <sup>1</sup> / <sub>8</sub> | 21 <sup>1</sup> / <sub>8</sub> | 71 <sup>3</sup> / <sub>4</sub> | 534                  | 396     |
| S25,000C <sup>⑤</sup> | 416                | 25,000           | 2" NPT                        | 05-1311 (10)        | 1400 Watts                     | 52 <sup>1</sup> / <sub>8</sub> | 21 <sup>1</sup> / <sub>8</sub> | 90 <sup>3</sup> / <sub>4</sub> | 670                  | 520     |

① Two S2400C's connected in series, 1 inlet and 1 outlet.

② Two S5,000C's connected in parallel, 2 inlets and 2 outlets.

③ Three S5,000C's connected in parallel, 3 inlets and 3 outlets.

④ Four S5,000C's connected in parallel, 4 inlets and 4 outlets.

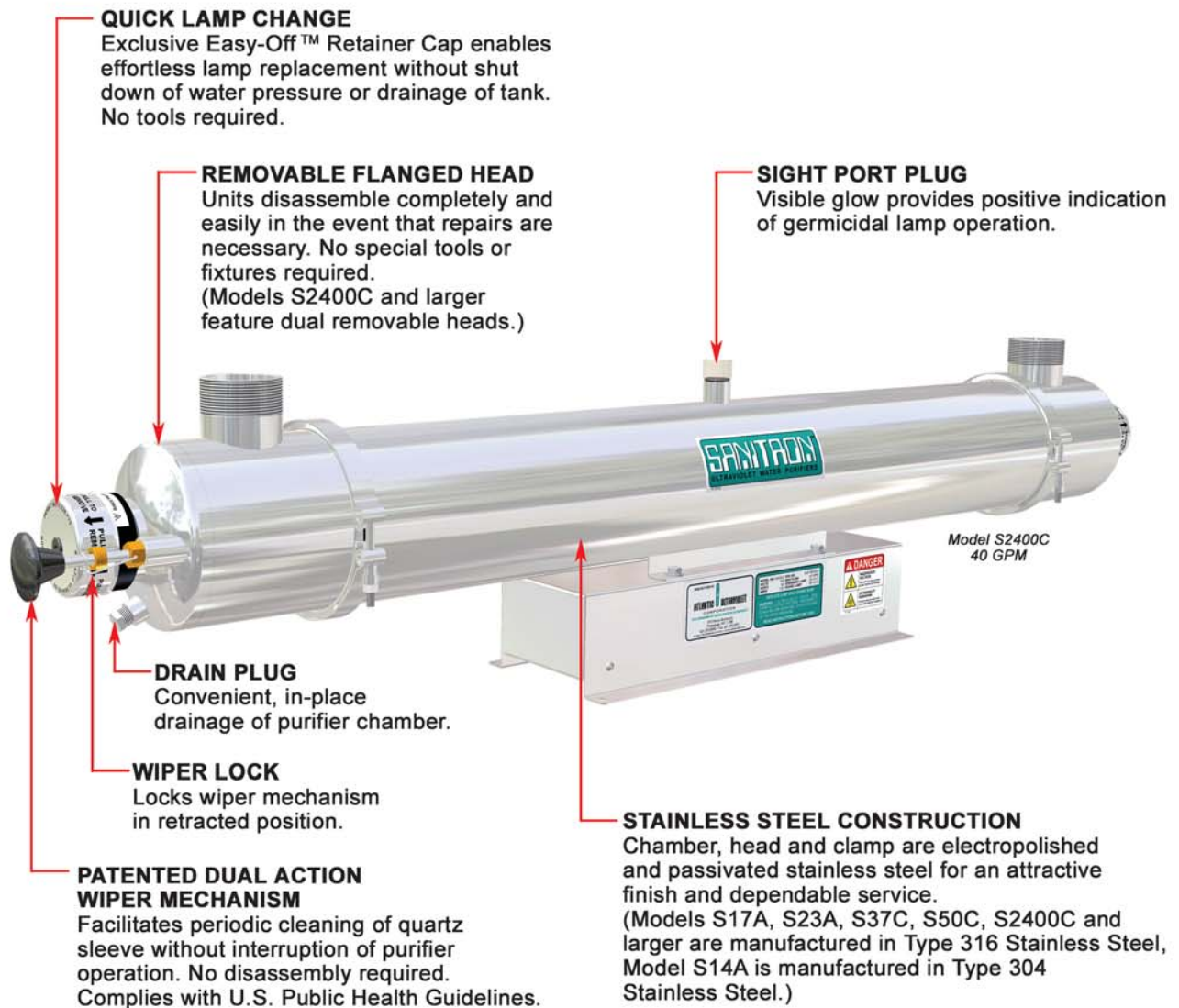
⑤ Five S5,000C's connected in parallel, 5 inlets and 5 outlets.

⑥ All inlets and outlets are male pipe threads.

⑦ Total power consumption including ballast loss.

- Maximum recommended operating pressure for all purifiers is 100 PSI.
- Pressure drop at maximum recommended flow rate is less than 5 PSI.
- Flow rates are based on Maximum Concentration Levels, shown on page 7.
- 120 Volt 60 Hz and 220 Volt 50 Hz units are standard.
- SANITRON™ is available for operation on public power supplied throughout the world.
- Consult factory with specific power requirements.

## SPECIAL FEATURES



## INSTALLATION & MAINTENANCE

The purifier is installed as close as possible to the point of use. Connection of the inlet and outlet to water supply and insertion of plug into 3-wire grounded outlet is all that is required.

Ordinary maintenance consists of cleaning the quartz sleeve with the manual wiper once monthly or more frequently where conditions dictate. Lamp replacement is recommended every 10,000 hours of operation (approximately 14 months of continuous service).

## MONITORING OPTIONS

### Good



The **STERALERT™** lamp status alarm monitors visible light emitted through the sight port plug of the water purifier and activates an audible alarm when visible light falls below acceptable levels.

- Easy installation, no tools.
- Mounts on the sight port plug.
- Warns of lamp or power failure.
- Produces a high frequency tone pulse at two to three cycles per second.
- Monitors visible light only; does not monitor ultraviolet intensity.
- Operates on a 9v battery or optional 120v 60Hz Power Adapter, specify when ordering.
- Available for use with all models.

### Better



The **SENTRY™** safety sensor provides constant monitoring of the water purifier's ballast and germicidal lamp operation. Indicator lights provide visual indication of ballast and germicidal lamp status.

- Easy installation.
- Plug **Sentry™** into an electrical outlet, then plug water purifier into **Sentry™**.
- Operates optional Solenoid Valve and/or Audio Alarm.
- Warns of lamp failure.
- Easily adaptable for use with other water purifier brands.
- Available in 120v 50/60Hz and 220 - 240v 50/60Hz, specify when ordering.
- Available for use with models up to 20 gpm.

### Best



The **GUARDIAN™ Ultraviolet Monitor** visually indicates the level of germicidal ultraviolet energy that penetrates the quartz sleeve and the water within the disinfection chamber. The **GUARDIAN™ Ultraviolet Monitor** is capable of operating an optional Audio Alarm and Solenoid Valve. In addition, the **GUARDIAN™ Ultraviolet Monitor** will detect loss of ultraviolet due to lamp outage, component or power failure. Use of the Ultraviolet Monitor is recommended by the US Public Health Service "Criteria for the Acceptability of an Ultraviolet Disinfection Unit".

The **GUARDIAN™ Ultraviolet Monitor** will detect reduction of ultraviolet levels due to:

1. Fouling or deposits on quartz sleeve.
2. Poor ultraviolet transmission through the water. (Color, turbidity, organic or other impurities in the water can reduce or interfere with the transmission of ultraviolet rays.)
3. Depreciation of lamp output due to usage or other cause. (Lamp output gradually depreciates with use. Lamp replacement is recommended once each year.)

The **GUARDIAN™ Ultraviolet Monitor** has three models; Analog, Digital and Digital Remote. Voltage Configurations include 120V / 50 or 60Hz, 220-240V / 50 or 60 Hz, or 12VDC. Contact factory for special requirements. **NOTE: GUARDIAN™ Ultraviolet Monitor** (analog, digital or digital remote) can be purchased and installed with the water purifier or at a later date for an existing installation.

The **GUARDIAN™ Ultraviolet Analog and Digital Monitors** are mounted directly on to the water purifier. The sensor probe (included) is threaded into the sight port fitting of the ultraviolet water purifier. The aluminum collar on the bottom of the **GUARDIAN™ Ultraviolet Analog or Digital Monitor** is secured over the sensor probe.

The **GUARDIAN™ Ultraviolet Digital Remote Monitor** is intended for use in a location away from the water purifier that is being monitored. In all other respects, the remote **GUARDIAN™** behaves the same as the standard **GUARDIAN™**. Mounted on the back of the remote monitor is a socket into which the lead from an ultraviolet sensor is connected. Instead of being mounted inside the monitor housing, this sensor is contained within the remote probe. A standard length for the connecting cable supplied with the probe is 50 ft., but the lead length may be extended if desired. Please contact the factory for additional lengths.

## OPTIONAL ACCESSORIES



### Audio Alarm

Activated by the **Sentry™** or **Guardian™** - alerts user to any malfunction detected.



### Elapsed Time Indicator

Real-time, non-resettable display of accumulated operating hours.



### Solenoid Valves

Operates with the **Guardian™** or **Sentry™** and prevents flow during detected malfunctions. Available in nylon or brass.



### Time Delay Mechanism

Operates with **Guardian™** or **Sentry™** and solenoid valve to provide a 2-minute warm-up period for lamp to achieve full germicidal output.



### Flow Control Valves

Limits water flow to rated capacities. Available in PVC and stainless steel.



### Wall Mounting Kit

Stainless steel material provides professional finish. Pre-drilled and ready for quick and easy mounting of water purifier. Optimizes free air circulation to cool ballast housing.



### Quantum Thermal Optimizer

Used to help regulate the water temperature inside the purifier's chamber.

Options may be obtained along with **SANITRON™** unit or added at a later date. For further details visit our website at [www.ultraviolet.com](http://www.ultraviolet.com).

**ultraviolet.com**

# WATER QUALITY RECOMMENDATIONS — STANDARD MODELS

## Maximum Concentration Levels Before Ultraviolet

|                         |                  |
|-------------------------|------------------|
| <i>Turbidity</i>        | <i>5 NTU</i>     |
| <i>Suspended Solids</i> | <i>10 mg/L</i>   |
| <i>Color</i>            | <i>None</i>      |
| <i>Iron</i>             | <i>0.3 mg/L</i>  |
| <i>Manganese</i>        | <i>0.05 mg/L</i> |
| <i>pH</i>               | <i>6.5 - 9.5</i> |
| <i>Hardness</i>         | <i>6 gpg</i>     |

Effectively treating water with higher concentration levels than listed above can be accomplished, but may require added measures to improve water quality to treatable levels.



Model S37C  
12 GPM

| MODEL  | GALLONS PER MINUTE | GALLONS PER HOUR | INLET AND OUTLET <sup>①</sup> | REPLACEMENT LAMPS | POWER CONSUMPTION <sup>②</sup> | UNIT DIMENSIONS (Inches)       |                                 |                                | SHIPPING DATA (lbs.) |         |
|--------|--------------------|------------------|-------------------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------------|----------------------|---------|
|        |                    |                  |                               |                   |                                | Length                         | Width                           | Height                         | Gross Wt.            | Net Wt. |
| S14A   | 2                  | 120              | 1/2" NPT                      | 05-1400           | 14 Watts                       | 16 <sup>3</sup> / <sub>8</sub> | 4 <sup>5</sup> / <sub>16</sub>  | 8 <sup>3</sup> / <sub>16</sub> | 11                   | 7       |
| S17A   | 3                  | 180              | 3/4" NPT                      | 05-1098           | 18 Watts                       | 19 <sup>3</sup> / <sub>8</sub> | 4 <sup>5</sup> / <sub>16</sub>  | 8 <sup>3</sup> / <sub>16</sub> | 11                   | 8       |
| S23A   | 6                  | 360              | 3/4" NPT                      | 05-1097           | 24 Watts                       | 25 <sup>3</sup> / <sub>8</sub> | 4 <sup>5</sup> / <sub>16</sub>  | 8 <sup>3</sup> / <sub>16</sub> | 14                   | 14      |
| S37C   | 12                 | 720              | 1" NPT                        | 05-1343           | 44 Watts                       | 39 <sup>3</sup> / <sub>8</sub> | 5 <sup>11</sup> / <sub>16</sub> | 9 <sup>1</sup> / <sub>2</sub>  | 30                   | 30      |
| S50C   | 20                 | 1,200            | 1 1/2" NPT                    | 05-1334           | 54 Watts                       | 52 <sup>3</sup> / <sub>8</sub> | 5 <sup>11</sup> / <sub>16</sub> | 9 <sup>1</sup> / <sub>2</sub>  | 36                   | 36      |
| S2400C | 40                 | 2,400            | 2" NPT                        | 05-1311           | 140 Watts                      | 52 <sup>1</sup> / <sub>8</sub> | 6 <sup>5</sup> / <sub>8</sub>   | 11 <sup>1</sup> / <sub>2</sub> | 49                   | 36      |

① All inlets and outlets are male pipe threads.

② Total power consumption including ballast loss (approximate).

- Maximum recommended operating pressure for all purifiers is 100 PSI
- Pressure drop at maximum recommended flow rate is less than 5 PSI
- Flow rates are based on Maximum Concentration Levels.
- 120 Volt 60 Hz and 220 Volt 50 Hz units are standard.
- 12 and 24 Volt DC units also available.
- **SANITRON™** is available for operation on public power supplied through out the world.
- Consult factory with specific power requirements.

## ULTRAVIOLET DOSAGE

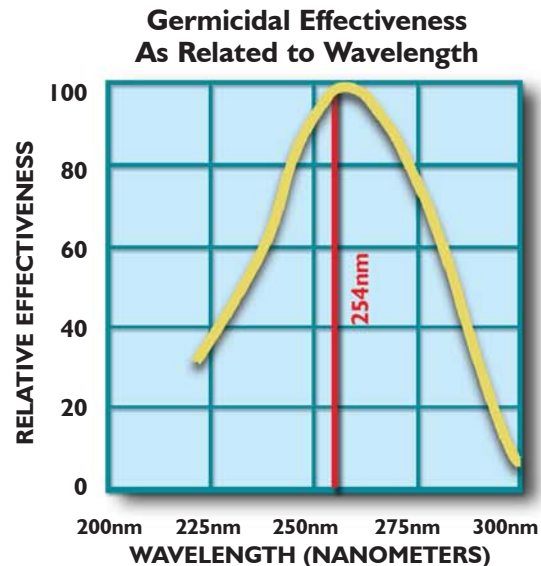
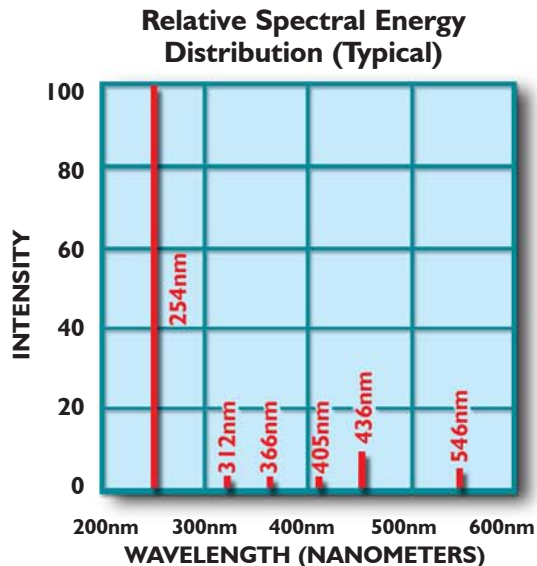
Germicidal lamps provide effective protection against microorganisms. A small cross-section is shown below.

| ORGANISM                        | ALTERNATE NAME             | TYPE     | DISEASE                                    | DOSE*  |
|---------------------------------|----------------------------|----------|--|--------|
| <i>Bacillus subtilis</i> spores | <i>B. subtilis</i>         | Bacteria | —  | 22,000 |
| Bacteriophage                   | Phage                      | Virus    | —  | 6,600  |
| Coxsackie virus                 | —                          | Virus    | Intestinal infection                       | 6,300  |
| <i>Shigella</i> spores          | —                          | Bacteria | Bacterial Dysentery                        | 4,200  |
| <i>Escherichia coli</i>         | <i>E. coli</i>             | Bacteria | Food poisoning                             | 6,600  |
| Fecal coliform                  | —                          | Bacteria | Intestinal infection                       | 6,600  |
| Hepatitis A virus               | Infectious Hepatitis virus | Virus    | Hepatitis of the liver                     | 8,000  |
| Influenza virus                 | Flu virus                  | Virus    | Influenza                                  | 6,600  |
| <i>Legionella pneumophila</i>   | —                          | Bacteria | Legionnaires' Disease                      | 12,300 |
| <i>Salmonella typhi</i>         | —                          | Bacteria | Typhoid Fever                              | 7,000  |
| <i>Staphylococcus aureus</i>    | Staph                      | Bacteria | Food poisoning, Toxic Shock Syndrome, etc. | 6,600  |
| <i>Streptococcus</i> spores     | Strep                      | Bacteria | Strep throat                               | 3,800  |

When used as directed to disinfect clear water, **SANITRON™** Water Purifiers provide an ultraviolet dosage in excess of 30,000 microwatt seconds per square centimeter ( $\mu\text{WSec}/\text{cm}^2$ ).

\* Nominal Ultraviolet dosage ( $\mu\text{WSec}/\text{cm}^2$ ) necessary to inactivate better than 99% of specific microorganism. Consult factory for more complete listing.

## OPERATING CHARACTERISTICS



Approximately 95% of the ultraviolet energy emitted from **STER-L-RAY™** germicidal lamps is at the mercury resonance line of 254 nanometers, the region of germicidal effectiveness most destructive to bacteria, mold and virus.

## GENUINE **STER-L-RAY™** GERMICIDAL LAMPS

**STER-L-RAY™** Germicidal Lamps are shortwave, low pressure mercury vapor discharge tubes that produce ultraviolet wavelengths lethal to microorganisms.

**STER-L-RAY™** Germicidal Lamps are well suited to applications requiring high ultraviolet intensity such as water sterilization.

**STER-L-RAY™** Slimline Germicidal Lamps are instant starting and utilize a coil filament on each end which operates hot. Lamp life is governed by the life of the electrodes and is affected by the frequency of starting.

**STER-L-RAY™** Preheat Germicidal Lamps are operated by a preheat-start circuit that employs a compact and economical ballast. The preheat circuit requires four electrical connections per lamp and a slight to moderate delay is needed to start the lamp.

**STER-L-RAY™** High Output Germicidal Lamps yield 1/3 to 2/3 more ultraviolet output than standard lamps of the same length. Ballasts are available in 120v and 220v.

**STER-L-RAY™** and the **STER-L-RAY™** logo are trademarks of Atlantic Ultraviolet Corporation.

CAUTION: Exposure to direct or reflected germicidal ultraviolet rays will cause painful eye irritation and reddening of the skin. Personnel subject to such exposure must wear suitable faceshield, gloves and protective clothing.

Hg - LAMP CONTAINS MERCURY, manage in accord with disposal laws, see: [www.lamprecycle.org](http://www.lamprecycle.org).

*Slimline Germicidal Lamps*

*Preheat Germicidal Lamps*

*High Output GX Germicidal Lamps*

## GERMICIDAL LAMP DATA

| Lamp Number          | Purifier Model No. | Nominal Lamp Length                       | Power Consumption <sup>①</sup> | Ultraviolet Output <sup>②</sup> | Rated Effective Life |
|----------------------|--------------------|---|--------------------------------|---------------------------------|----------------------|
| 05-1400              | S14A               | 8 <sup>15</sup> / <sub>16</sub> " (227mm) | 10 Watts                       | 2.3 Watts                       | 10,000 Hrs.          |
| 05-1098              | S17A               | 11 <sup>7</sup> / <sub>8</sub> " (302mm)  | 14 Watts                       | 3.7 Watts                       | 10,000 Hrs.          |
| 05-1097              | S23A               | 17 <sup>3</sup> / <sub>4</sub> " (451mm)  | 20 Watts                       | 6.4 Watts                       | 10,000 Hrs.          |
| 05-1343              | S37C               | 33 <sup>7</sup> / <sub>8</sub> " (860mm)  | 39 Watts                       | 13.8 Watts                      | 10,000 Hrs.          |
| 05-1334              | S50C               | 45 <sup>7</sup> / <sub>8</sub> " (1165mm) | 50 Watts                       | 19.3 Watts                      | 10,000 Hrs.          |
| 05-1311 <sup>③</sup> | S2400C             | 46 <sup>1</sup> / <sub>4</sub> " (1175mm) | 110 Watts                      | 42 Watts                        | 10,000 Hrs.          |

① Wattage is lamp watts only and does not include ballast loss (approximate).

② Maximum rated output at 254 nanometers.

③ Patented by Atlantic Ultraviolet Corporation.

The lamps listed above have been especially developed and are recommended for use with **SANITRON™** Water Purifiers.

All **STER-L-RAY™** lamps used in **SANITRON™** units are low pressure type which afford the maximum efficiency in producing the required germicidal rays. In addition to the obvious advantages of high efficiency and low power requirements, there is no possibility of the unit overheating (as is the case with some other lamp types). Consequently, the need for additional equipment to combat overheating is eliminated.

**ATLANTIC** **A** **U** **ULTRAVIOLET**  
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**Model S10,000C**  
**166 GPM**

*Shown with supplied Interconnect Piping, optional Guardian™ Digital Ultraviolet Monitor, Solenoid Valve, Flow Control Valve and customer supplied Manifolds, Piping, Union and Shut Off Valve.*

The information and recommendations contained in this publication are based upon data collected by the Atlantic Ultraviolet Corporation and are believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. Specifications and information are subject to change without notice.

[www.ultraviolet.com](http://www.ultraviolet.com)