SANITRON®

ULTRAVIOLET WATER PURIFIERS

ATLANTIC ULTRAVIOLET CORPORATION®

Model S2400C
40 GPM

ultraviolet.com

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 3 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.

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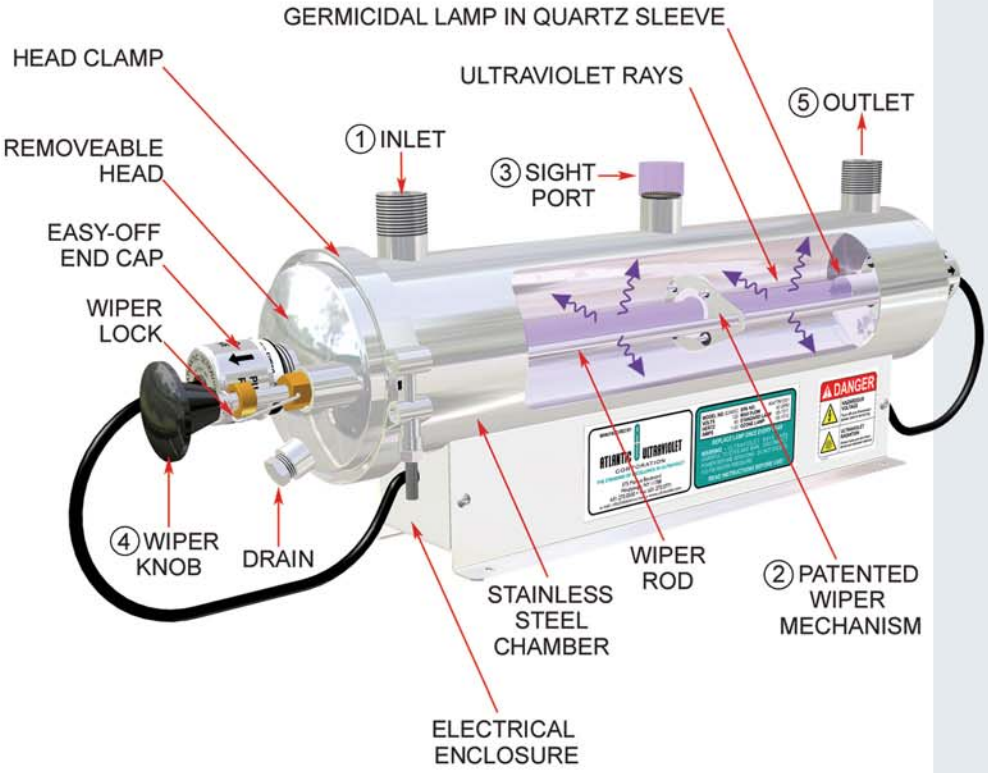
PRINCIPLE OF OPERATION



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.

ABOUT US

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.

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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 shutdown 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 ⑥	Replacement Lamps	Power Consumption ⑦	Unit Dimensions (Inches)			Shipping Data (lbs.)	
						Length	Width	Height	Gross Wt.	Net Wt.
S5,000C ①	83	5,000	2" NPT	05-1311-R (2)	280 Watts	52 1/8	17	15	116	85
S10,000C ②	166	10,000	2" NPT	05-1311-R (4)	560 Watts	52 1/8	21 1/8	34 3/4	267	188
S15,000C ③	250	15,000	2" NPT	05-1311-R (6)	840 Watts	52 1/8	21 1/8	53 3/4	400	263
S20,000C ④	333	20,000	2" NPT	05-1311-R (8)	1120 Watts	52 1/8	21 1/8	71 3/4	534	396
S25,000C ⑤	416	25,000	2" NPT	05-1311-R (10)	1400 Watts	52 1/8	21 1/8	90 3/4	670	520

①Two S2400C's connected in series, 1 inlet and 1 outlet.
②Two S5,000C's connected in parallel, 2 inlets and 2 outlets.
③Three S5,000C's connected in parallel, 3 inlets and 3 outlets.
④Four S5,000C's connected in parallel, 4 inlets and 4 outlets.
⑤Five S5,000C's connected in parallel, 5 inlets and 5 outlets.
⑥All inlets and outlets are male pipe threads.
⑦Total 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 and 220 Volt units are standard.
- SANITRON® is available for operation on public power supplied throughout the world.
- Consult factory with specific power requirements.

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SPECIAL FEATURES

QUICK LAMP CHANGE
Exclusive Easy-Off™ Retainer Cap enables effortless lamp replacement without shut down of water pressure or drainage of tank. No tools required.

FUSED QUARTZ SLEEVE
Insures optimum lamp output at normal potable water temperatures. *(See interior detail page 3.)*

REMOVABLE FLANGED HEAD
Units disassemble completely and easily in the event that repairs are necessary. No special tools or fixtures required.
(Models S2400C and larger feature dual removable heads.)

SIGHT PORT PLUG
Visible glow provides positive indication of germicidal lamp operation.

Model S2400C
40 GPM

DRAIN PLUG
Convenient, in-place drainage of purifier chamber.

WIPER LOCK
Locks wiper mechanism in retracted position.

PATENTED DUAL ACTION WIPER MECHANISM
Facilitates periodic cleaning of quartz sleeve without interruption of purifier operation. No disassembly required. Complies with U.S. Public Health Guidelines.

TYPE 316 STAINLESS STEEL CONSTRUCTION
Chamber, head and clamp are electropolished and passivated stainless steel for an attractive finish and dependable service.

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.

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 for 120v 50/60Hz water purifiers operating with electronic ballasts.

Best

Analog

Digital

Digital Remote

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.

Options may be obtained along with **SANITRON**® unit or added at a later date. For further details visit our website at **www.ultraviolet.com**.

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.

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WATER QUALITY RECOMMENDATIONS

Maximum Concentration Levels Before Ultraviolet

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

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.

STANDARD MODELS

Model S37C
12 GPM

Model	Gallons per Minute	Gallons per Hour	Inlet and Outlet ①	Replacement Lamps	Power Consumption ②	Unit Dimensions (Inches)			Shipping Data (lbs.)	
						Length	Width	Height	Gross Wt.	Net Wt.
S17A	3	180	3/4" NPT	05-1098-R	18 Watts	19 3/8	4 5/16	8 3/16	11	8
S23A	6	360	3/4" NPT	05-1097-R	24 Watts	25 3/8	4 5/16	8 3/16	14	12
S37C	12	720	1" NPT	05-1343-R	44 Watts	39 3/8	5 11/16	9 1/2	30	25
S50C	20	1,200	1 1/2" NPT	05-1334-R	54 Watts	52 3/8	5 11/16	9 1/2	36	29
S2400C	40	2,400	2" NPT	05-1311-R	140 Watts	52 1/8	6 5/8	11 1/2	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 and 220 Volt 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.

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ULTRAVIOLET DOSAGE

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

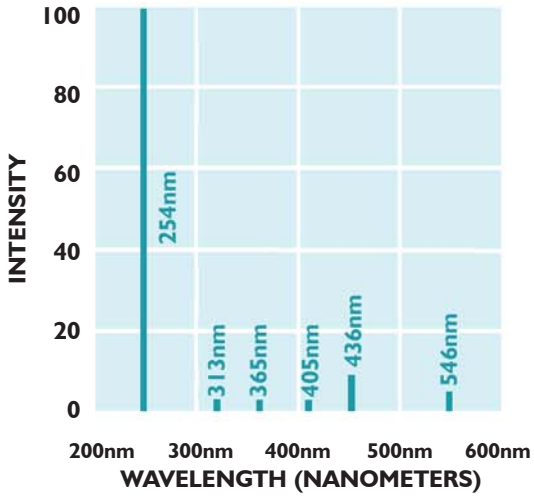
ORGANISM	ALTERNATE NAME	TYPE	DISEASE	DOSE*
Bacillus subtilis spores	*B. subtilis*	Bacteria	——	22,000
Bacteriophage	Phage	Virus	——	6,600
Coxsackie virus	————	Virus	Intestinal infection	6,300
Shigella spores	————	Bacteria	Bacterial Dysentery	4,200
Escherichia coli	*E. coli*	Bacteria	Food poisoning	6,600
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
Legionella pneumophila	————	Bacteria	Legionnaires' Disease	12,300
Salmonella typhi	————	Bacteria	Typhoid Fever	7,000
Staphylococcus aureus	Staph	Bacteria	Food poisoning, Toxic Shock Syndrome, etc.	6,600
Streptococcus 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 (μWSec/cm^2).

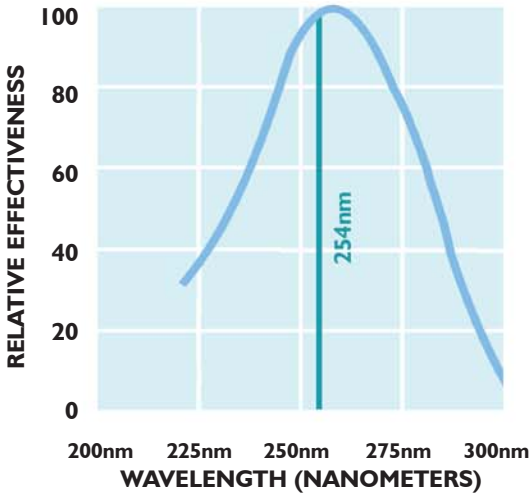
* Nominal Ultraviolet dosage (μWSec/cm^2) necessary to inactivate better than 99% of specific microorganism. Consult factory for more complete listing.

OPERATING CHARACTERISTICS

Relative Spectral Energy Distribution (Typical)



Germicidal Effectiveness As Related to Wavelength



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™ GX Germicidal Lamps yield 1/3 to 2/3 more ultraviolet output than standard lamps of the same length.

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.

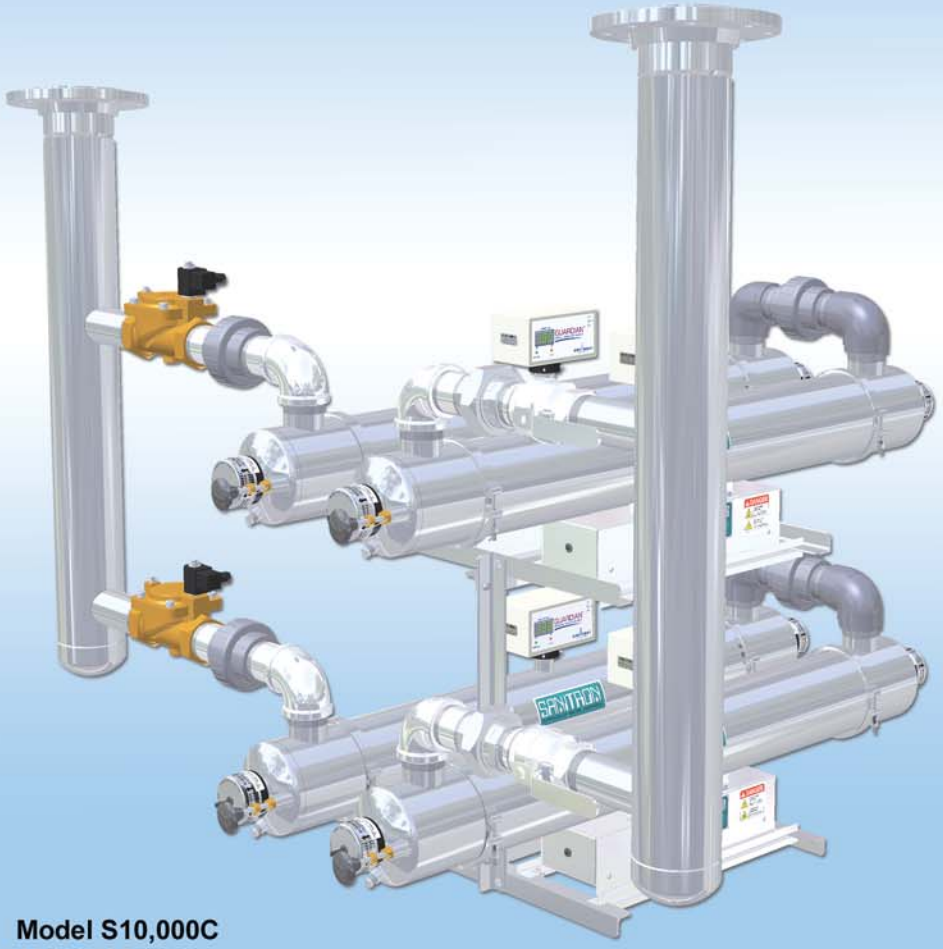
GERMICIDAL LAMP DATA

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



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.

ATLANTIC ULTRAVIOLET
CORPORATION®

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