

# SANITRON®

ULTRAVIOLET WATER PURIFIERS

Models S2400C &  
S5,000C, S10,000C, S15,000C, S20,000C  
& S25,000C High Capacity Systems



Installation, Operation & Maintenance



A  
**ATLANTIC U ULTRAVIOLET**  
CORPORATION®

375 Marcus Boulevard • Hauppauge, NY 11788 • USA  
631.273.0500 • Fax: 631.273.0771  
e-mail: info@ultraviolet.com

Extensive Product Information Available at:

**www.ultraviolet.com**



Owner's Manual

# TABLE OF CONTENTS

---

SAFETY WARNINGS.....	3
SAFETY INSTRUCTIONS .....	3
PRODUCT APPLICATION .....	4
CONSTRUCTION .....	4
PRINCIPLE OF OPERATION .....	4
LIMITATION OF USE .....	4
WATER QUALITY .....	4
INSTALLATION .....	5
LOCATION.....	5
INSTALLATION .....	6-7
RECOMMENDED OPTIONS.....	7
MAINTENANCE.....	8
INSPECTION .....	8
DISPOSAL OF MERCURY ADDED LAMP.....	8
QUARTZ SLEEVE CLEANING USING WIPER MECHANISM.....	8
LAMP INSTALLATION OR REPLACEMENT.....	9
QUARTZ SLEEVE CLEANING OR REPLACEMENT.....	10
REPLACEMENT OF BROKEN QUARTZ SLEEVE .....	11
CLEANING OF OPTIONAL GUARDIAN™ ULTRAVIOLET MONITOR SENSOR PROBE .....	12
TROUBLESHOOTING .....	13
OPTIONAL ACCESSORIES .....	13
TECHNICAL SPECIFICATIONS.....	14
REPLACEMENT PARTS .....	15-16
HIGH CAPACITY SYSTEMS.....	17-18
DIMENSIONAL DATA S5,000C & S10,000C .....	17
DIMENSIONAL DATA S10,000C, S15,000C, S20,000C & S25,000C .....	18
DECLARATION OF CONFORMITY .....	19
WARRANTY .....	20
USER ASSISTANCE .....	20
PATENT NOTICE.....	20

These instructions generally describe the installation, operation and maintenance of the SANITRON® Model S2400C line of water purifiers. Models S5,000C and S10,000C through S25,000C High-Capacity Systems utilize the Model S2400C single lamp water purifier in various configurations. Questions that are not specifically answered by these instructions should be directed to the Factory.

Atlantic Ultraviolet Corporation takes all possible precautions when packaging equipment to prevent damage. Carefully inspect and report all damages. Do not install damaged equipment.

Follow all instructions on any labels or tags. Carefully inspect all packing materials before discarding to prevent the loss of accessories, mounting hardware, spare parts or instructions.

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.



## **SAFETY WARNINGS**

---

- All personnel should be alerted to the potential hazards indicated by the product safety labeling on this unit.
- The following conventions are used to indicate and classify precautions in this manual and on product safety labeling. Failure to observe precautions could result in injury to people or damage to property.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **⚠ DANGER**

Danger indicates an **IMMINENTLY** hazardous situation, which, if not avoided, **WILL** result in death or serious injury.

### **⚠ WARNING**

Warning indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **COULD** result in death or serious injury.

### **⚠ CAUTION**

Caution indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **MAY** result in minor or moderate injury.

### **CAUTION**

Caution used without the safety alert symbol indicates a potentially hazardous situation, which, if not avoided, may result in property damage.



This symbol/pictorial is used to identify an **ELECTRICAL SHOCK** or **ELECTROCUTION** hazard.



This symbol/pictorial is used to identify components which must not be disposed of in the trash.



This symbol/pictorial is used to identify an **ULTRAVIOLET LIGHT** hazard.

- Product safety labels should be periodically inspected and cleaned, as necessary, to maintain good legibility. Always replace illegible safety labels. Contact factory to obtain replacement safety labels.

## **SAFETY INSTRUCTIONS**

---

### **⚠ WARNING: To guard against injury, basic safety precautions should be observed, including the following:**

1. Read and follow ALL safety instructions.
2. Do not use this water purifier for other than its intended purpose as described in this manual.
3. Do not alter design or construction.
4. Do not remove any labels or devices.
5. **⚠ DANGER: To prevent the risk of severe or fatal electrical shock, special precautions must be taken since water is present near electrical equipment. Always disconnect power before performing any service or maintenance.**
6. **⚠ WARNING: Avoid exposure to direct or strongly reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.**
7. Intended for indoor use only. The water purifier should be protected from the elements and from temperatures below freezing.
8. Do not operate water purifier if lamp cable, lamp connection, power cord and/or plug are damaged, or if any other damage to the water purifier is visible or suspected..
9. Electrical power supplied, to the water purifier, **MUST** match power requirements listed on the water purifier.
10. Plug the water purifier into an approved ground fault circuit interrupt (GFCI) receptacle.
11. **⚠ CAUTION: Do not operate without proper electrical ground.**
12. Do not exceed water purifier's maximum rated flow capacity.
13. Do not exceed maximum operating pressure of 100 PSI.
14. Read and follow all notices and warnings on the water purifier.
15. **SAVE THESE INSTRUCTIONS.**

# PRODUCT APPLICATION —

---

## CONSTRUCTION

---

- The water purifier is designed to mount horizontally.
- The water purifier's dual chamber heads are removable and may be rotated independently, (See “**Figure 3 - Recommended Positions of Inlet/Outlet Fittings**” in the “**Installation**” section.) which aids in the installation, maintenance or the retrofitting of an existing system. A drain port on the chamber head aids in the draining of the purifier.
- The water purifier's chamber, and chamber heads are electropolished and passivated type 316 stainless steel.
- The ballast housing is type 304 stainless steel.
- Coated chambers are available for uses with special applications. Coated chambers are not recommended for use in drinking water applications or in applications where the treated product is consumed. Consult factory with your application requirements.
- The dual action wiper mechanism allows for quick and easy quartz sleeve cleaning, without interrupting service.
- EASY-OFF™ end caps allow for quick and easy lamp change, without disconnecting from the water supply or draining the purifier. No tools are required.
- Certain versions of 220v units have been designed to be CE compliant. These units have been tested to and comply with the requirements of the Electromagnetic Compatibility Directive and the Machinery Directive. The Declaration of Conformity lists the European Norm (EN) standards to which these units were tested, to demonstrate conformity.

## PRINCIPLE OF OPERATION

---

The SANITRON® design has been carefully conceived to provide adequate germicidal dosage throughout the disinfection chamber. The dosage, as it applies to ultraviolet disinfection, is a function of time and the intensity of ultraviolet radiation to which the water is exposed. The exposure time, in seconds, is the total time it takes the water to flow through the disinfection chamber exposing it to the germicidal lamp. Exposure time is related to the flow rate; the higher the flow rate, the lower the exposure time or the lower the flow rate, the higher the exposure time. The ultraviolet intensity is the amount of energy, per unit time, emitted by the germicidal lamp. The dosage is the product of ultraviolet intensity and the exposure time. The operation of the SANITRON® is as follows:

1. Water enters the purifier and flows into the annular space between the quartz sleeve and the chamber wall.
2. Suspended microorganisms are exposed to the ultraviolet rays emitted by the germicidal lamp.
3. The translucent sight port, or optional ultraviolet monitor, provides visual indication of germicidal lamp operation.
4. The dual action wiper mechanism facilitates periodic cleaning of the quartz sleeve without disassembly or interruption of purifier operation.
5. Water leaving the purifier is instantly ready for use, no further contact time is required.

## LIMITATION OF USE

---

The water purifier is intended for the use with visually clear water, not colored, cloudy or turbid.

See “**Water Quality**” section below.

The water purifier is **NOT** intended for the treatment of water that has an obvious contamination or intentional source, such as raw sewage; nor is the unit intended to convert wastewater to microbiologically safe drinking water.

## WATER QUALITY

---

Water quality plays a major role in the transmission of germicidal ultraviolet rays. It is recommended that the water does not exceed the following maximum concentration levels:

**Table 1 - Maximum Concentration Levels**

Turbidity:	5 NTU
Manganese:	0.05mg/l
Total Suspended Solids:	10 mg/l
pH:	6.5 - 9.5
Color:	None
Hardness:	6 GPG or 102.6 PPM
Iron:	0.3 mg/l

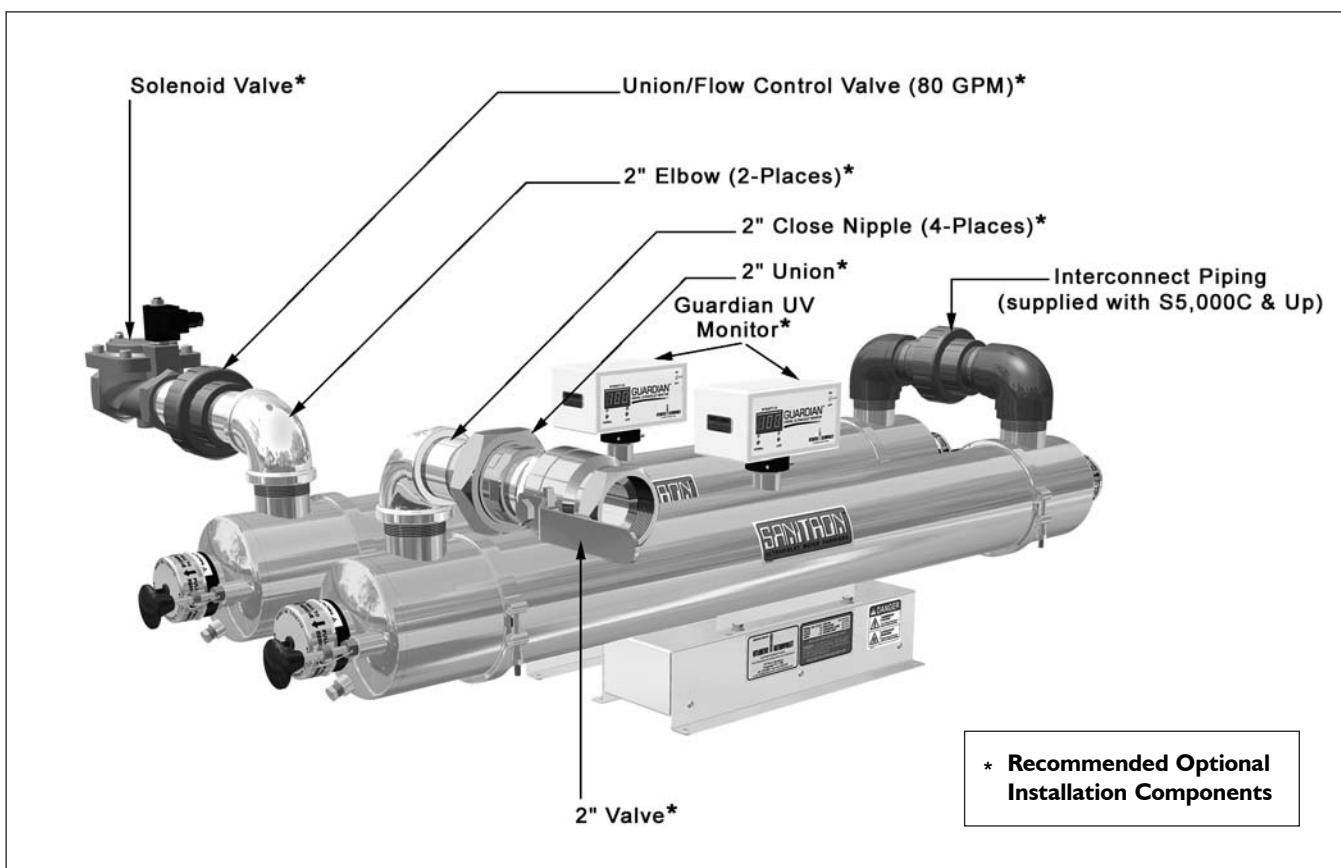
Effectively treating water with higher concentration levels than listed above can be accomplished, but may require added measures to improve water quality to treatable levels. If, for any reason, it is believed the ultraviolet transmission is not satisfactory, contact the factory.

# INSTALLATION

## LOCATION

1. The water purifier is intended for indoor use only. The water purifier should be protected from the elements and from temperatures below freezing. The ambient temperature, in the area surrounding the water purifier, should be between 33° F and 100° F.
2. Electrical power supplied to the water purifier **MUST** match power requirements listed on the water purifier. Use of a voltage surge protector is recommended.
3. The water purifier should be located in a dry, well-lit area, which provides enough room to perform routine maintenance. This includes a minimum distance of one chamber length from the wiper end, to allow for cleaning and/or the changing of the lamp and quartz sleeve as well as a minimum of 6" on the opposite end of the water purifier.
4. The water purifier should always be located closest to the point of use. This reduces the chance of the purified water being re-contaminated by bacteria in the water distribution system after the water purifier.
5. **CAUTION:** As with any water handling device, the water purifier should be located in an area where any possible condensation or leakage from the water purifier, any purifier accessory and/or plumbing will not result in damage to the area surrounding the water purifier. For added protection, it is recommended that a suitable drain pan be installed under the purifier. The drain pan must be plumbed to an adequate, free flowing, drain to prevent water damage in the event of a leak. There are numerous leak detection/flood stop devices, available on the market today, designed to stop the flow of water, reducing the chance of water damage due to leakage. For more details regarding leak prevention and/or limiting damages due to leaks, please contact the factory.
6. The water purifier should be located after all other water devices, such as De-ionizers, Water Softeners, Carbon Filters, Pre-Filters, Reverse Osmosis, Pressure Tanks, and Pumps. This reduces the chance of the purified water being re-contaminated by bacteria in any of these units.

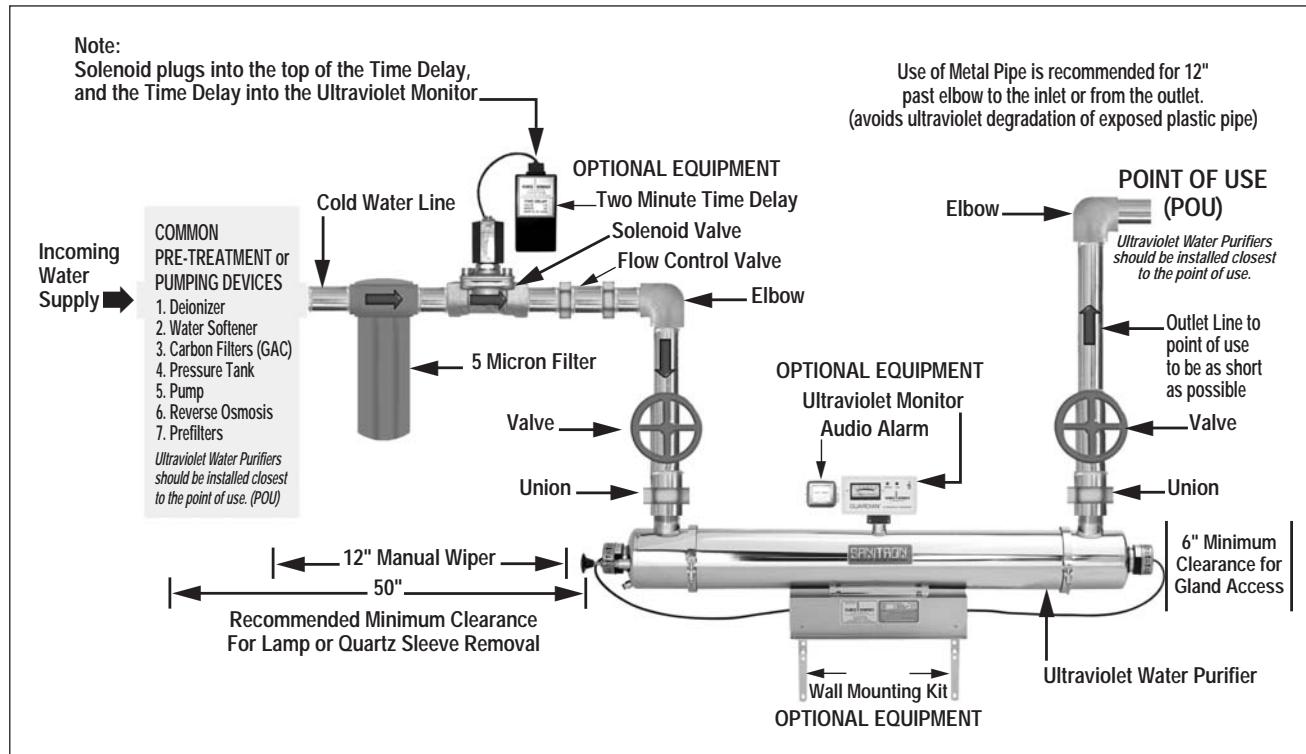
Figure 1 - (1) S5,000C Shown With Recommended Optional Installation Components



## INSTALLATION

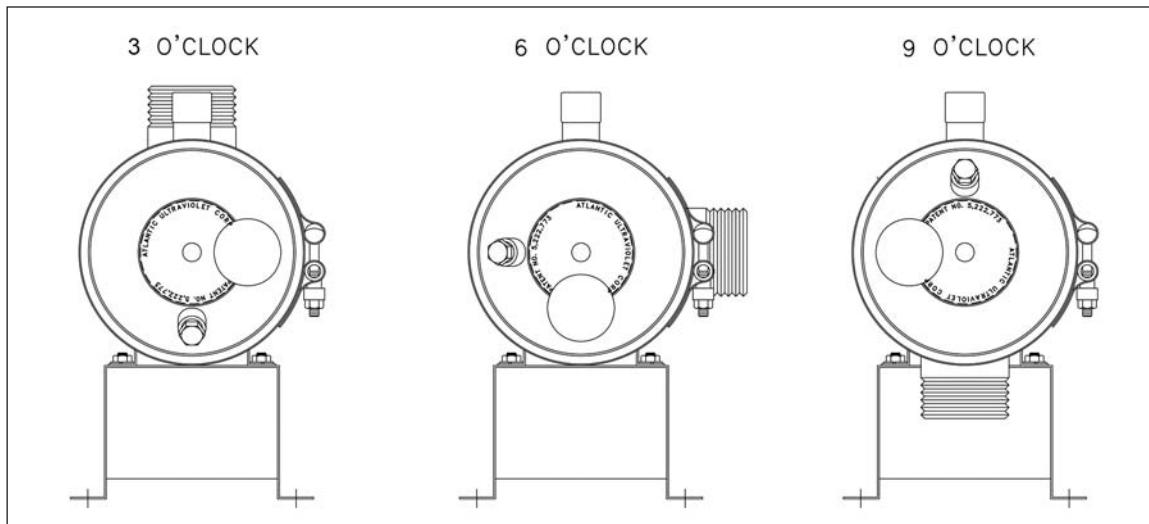
1. Remove water purifier from shipping carton. Inspect water purifier, power cord and plug for damage. Do not operate if there is any damage to the purifier, power cord or plug. SANITRON® Model S2400C is shipped with the lamp packed separately. Keep the lamp aside for installation once the purifier has been properly installed.
2. Units occasionally experience damage in shipment due to the fragility of the quartz sleeve. It is, therefore, recommended to inspect the water purifier for damage to the quartz sleeve after it has been removed from the shipping carton. Each end of the unit as well as the inlet and outlet should be viewed to see if the quartz sleeve has experienced damage. If the quartz sleeve shows signs of damage it should be replaced before the purifier is pressurized. See “**Quartz Sleeve Cleaning or Replacement**” in the “**Maintenance**” section for the proper method of replacing the quartz sleeve in your water purifier.

**Figure 2 - Recommended Installation**



3. The water purifier's dual chamber heads are removable and may be rotated independently, which aids in the installation, maintenance or the retrofitting of an existing system.

**Figure 3 - Recommended Positions of Inlet/Outlet Fittings**



Note: **DO NOT** rotate head so wiper knob is at 12 o'clock position.

4. The water purifier should be mounted horizontally on a flat dry surface. Secure the water purifier using the mounting holes in the ballast housing or with the optional wall mounting kit. The purifier should not be solely supported by its plumbing connections.
5. The water purifier must be connected to the cold water line only.
6. It is recommended that a 5-micron sediment filter be installed, in line, prior to the water purifier. The sediment filter will stop or trap any particulates from entering the water purifier. Particulates may cause damage to the quartz sleeve, as well as interfere with the purifier's ability to disinfect the water. The sediment filter may also help to reduce the amount of routine cleaning of the quartz sleeve.
7. Shut off valves should be installed on both the inlet and outlet sides of the water purifier. **The use of bypass valves is not recommended.** The shut off valves allow the purifier to be isolated from the water supply, which is required when removing the quartz sleeve.
8. Unions should be installed on both the inlet and outlet of the water purifier; this will allow easy removal of the water purifier from the plumbing, if required. Apply Teflon® tape to threads of inlet and outlet ports to ensure a tight seal.
9. When all plumbing connections are complete, allow water to enter the water purifier at a low flow rate, until the purifier is pressurized. With the purifier pressurized, it should be checked for leaks. Once it is determined that there are no leaks, the inlet valve can be fully opened.
10. Install lamp following the steps in "**Lamp Installation or Replacement**" section.

**▲ CAUTION: Lamp and quartz sleeve are easily damaged. Exercise care when handling.**

11. Plug the water purifier into an approved ground fault circuit interrupt (GFCI) receptacle.
12. Once the plumbing hook ups are made, it is a good practice to disinfect the "downstream" plumbing between the purifier and point of use. This is done by introducing chlorine into the purifier chamber, a 100-ppm of chlorine is suggested. With the chlorine in the purifier chamber, turn the ultraviolet purifier on. Open the "downstream" outlet until a chlorine odor is noticed. Close the outlet and allow the chlorine to remain in the plumbing for three (3) hours. Flush the plumbing with ultraviolet purified water; allow the water to run for several minutes before use. This will allow the ultraviolet lamp to reach its full germicidal output.

---

## **RECOMMENDED OPTIONS**

1. **Guardian™ Ultraviolet Monitor\***: Visually indicates the level of germicidal ultraviolet energy that penetrates the quartz sleeve and the water within the water purifier. The ultraviolet monitor is capable of operating an optional audio alarm and/or solenoid valve. The ultraviolet monitor will detect reduction of ultraviolet levels due to:
  - Fouling or deposits on the quartz sleeve.
  - Poor ultraviolet transmission through the water; color, turbidity, and organic or other impurities in the water can reduce or interfere with the transmission of ultraviolet rays.
  - Lamp outage, component or power failure.
  - Depreciation of the lamp output due to usage or other cause. Lamp output gradually depreciates with use. Lamp replacement is recommended once each year.
2. **Sentry™ Safety Sensor**: Pilot lamps provide constant visual monitoring of normal operation. In the event of power or lamp failure the safety sensor indicates an alarm condition. The safety sensor is capable of operating an optional audio alarm and/or solenoid valve.
3. **Steralert™**: Lamp Status Alarm produces a high pitched, pulsed tone when the purifier is no longer functioning due to lamp or power failure.
4. **SureFLO™**: Flow Control Valve, limits water flow to the rated capacity of the purifier. The flow control valve is located in line prior to the water purifier, and should be protected from ultraviolet exposure by the use of a 90-degree elbow fitting between the flow control valve and the water purifier.
5. **Audio Alarm\***: Activated by the Ultraviolet Monitor or Safety Sensor, alerts the user to any malfunction detected.
6. **Solenoid Valve\***: Operated in conjunction with the Ultraviolet Monitor, Safety Sensor or Time Delay Mechanism, this valve prevents water flow through the water purifier when an abnormal condition is detected or in the event of power failure.
7. **Elapsed Time Indicator**: A non-resettable display of the water purifier operating hours. Useful for scheduling and recording maintenance and lamp replacement.
8. **Time Delay Mechanism\***: Provides a 2-minute warm up period during which the ultraviolet lamp achieves its full germicidal output before the water is allowed to flow through the water purifier. The time delay mechanism is used in conjunction with, and is electrically connected to the Solenoid Valve.
9. **Wall Mount Kit**: (S2400C) Stainless steel wall brackets provide quick and easy installation and professional finish. Pre-drilled and ready to install. Optimizes free air circulation to cool ballast housing.

\*Use of this option is recommended by U.S. Public Health Service "*Criteria for Acceptability of an Ultraviolet Disinfection Unit.*" Originally issued April, 1966.

# MAINTENANCE

---

The water purifier is designed to operate with a minimal amount of maintenance, providing the water quality does not exceed maximum concentration levels, see “**Water Quality**” in the “**Product Application**” section. Ordinary maintenance consists of;

- Lamp replacement is recommended every 10,000 hours of operation, approximately 12 months of continuous service.
- Cleaning of the quartz sleeve, when conditions warrant.
- Always disconnect the water supply and completely drain the water purifier if it will be subjected to temperatures below freezing, for extended periods of time.

## INSPECTION

---

1. Regularly inspect the water purifier to ensure that the germicidal lamp is still in operation.
  - On purifiers not equipped with the Ultraviolet Monitor, lamp operation can be verified by a visible glow through the translucent sight port. This provides an indication of lamp operation and does not indicate the level of ultraviolet intensity or transmission through the water.
  - On purifiers so equipped, the Guardian™ Ultraviolet Monitor provides visual indication of the ultraviolet intensity through the quartz sleeve and water in the purifier chamber.
2. To ensure proper operation of the water purifier, regular biological testing should be performed on a schedule recommended by local public health authorities, or at minimum; at installation, quarterly for the first year of service and annually, at lamp replacement, for the life of the water purifier.

## DISPOSAL OF MERCURY ADDED LAMPS

---

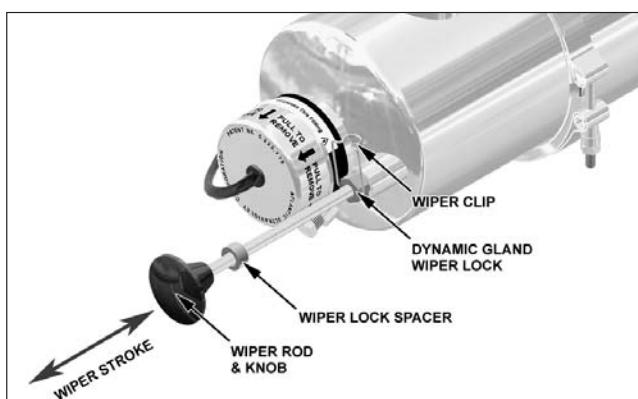
Germicidal ultraviolet lamps, like standard fluorescent lamps contain small amounts of mercury. Mercury added lamps should not be placed in the trash. Dispose of properly.

For further information regarding the disposal and recycling of lamps containing mercury, along with Federal and State requirements visit <http://www.lamprecycle.org>. Product Data Sheets for germicidal ultraviolet lamps can be found in the “PDF Library for **Ster-L-Ray®** Germicidal Ultraviolet Lamps” section of <http://www.ultraviolet.com>.

## QUARTZ SLEEVE CLEANING USING WIPER MECHANISM

---

Figure 4 - Quartz Sleeve Cleaning



Routine cleaning of the quartz sleeve is easily accomplished, using the dual action wiper mechanism.

1. Lift wiper clip up and away from wiper rod.
2. Grasp wiper knob and gently pull out, away, from the purifier until it reaches its stop
3. Push wiper back in, toward the purifier until it reaches its second stop.
4. Repeat steps 2 and 3 as necessary.
5. Holding wiper in place, return wiper clip and snap over wiper rod, in front of the wiper lock spacer.



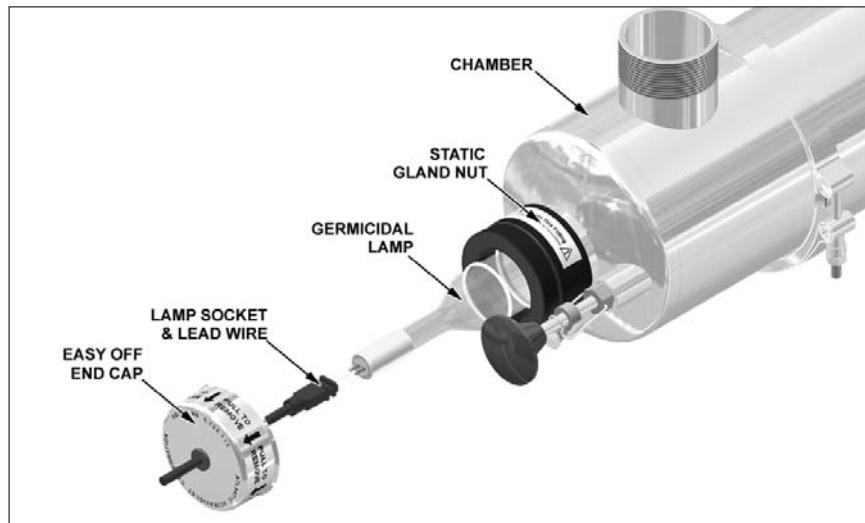
Step 1 - Lift wiper clip up

Step 2 - Gently pull wiper knob out

Step 3 - Push wiper back in

## LAMP INSTALLATION OR REPLACEMENT

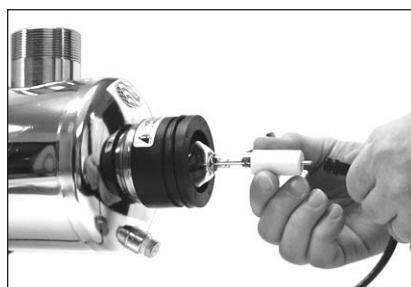
Figure 5 - Lamp Replacement



Step 2 - Remove End-Cap



Step 3 - Withdraw Lamp



Step 4 & 5 - Remove Sockets



Step 6 - Remove Lamp

1. **Disconnect power to water purifier.**
2. Remove both EASY-OFF™ end caps by pulling each cap off static gland nut. Slide each end cap along the wire away from the socket.
3. Carefully withdraw lamp approximately 2 inches from chamber while feeding lamp socket and lead wire on opposite end of chamber.
4. While holding lamp end, carefully remove lamp socket on end now exposed.
5. Next, carefully slide lamp back into chamber, until approximately 2 inches of the lamp is exposed on the opposite end. Hold lamp and remove lamp socket.
6. Lamp should now be disconnected on both ends. Carefully remove lamp from chamber. Be sure to withdraw lamp straight out without angling until completely clear of quartz sleeve.

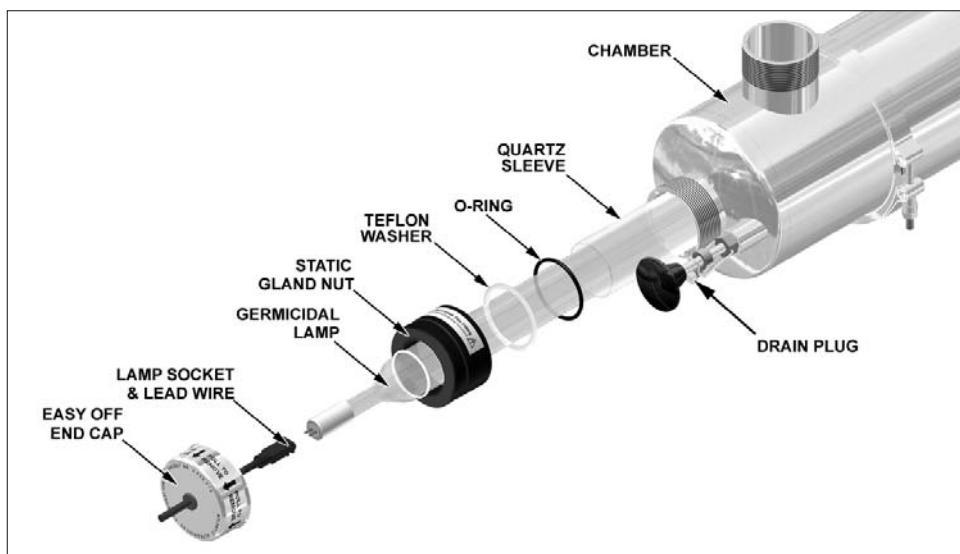
**▲ CAUTION:** Lamp and quartz sleeve are easily damaged. Exercise care when handling.

7. Reinstall lamp in reverse order.

**▲ WARNING:** Germicidal ultraviolet rays are harmful to eyes and skin. Do not restore power to water purifier until lamp and both EASY-OFF™ end caps have been properly reinstalled.

## **QUARTZ SLEEVE REMOVAL, CLEANING OR REPLACEMENT**

**Figure 6 - Quartz Sleeve Cleaning or Replacement**



**Step 4 - Remove Gland Nuts**



**Step 5 - Remove Washer & O-Ring**



**Step 6 - Remove Quartz Sleeve**

1. **Disconnect power to water purifier.**
2. Shut off water supply to water purifier via inlet and outlet shut off valves. Drain chamber by removing drain plug. Once the chamber is completely drained, remove any old sealing tape from the threads of the drain plug, rewrap with 1/2" wide Teflon® thread sealing tape, reinstall and tighten the drain plug.
3. Follow the steps in “**Lamp Installation or Replacement**” to remove lamp.

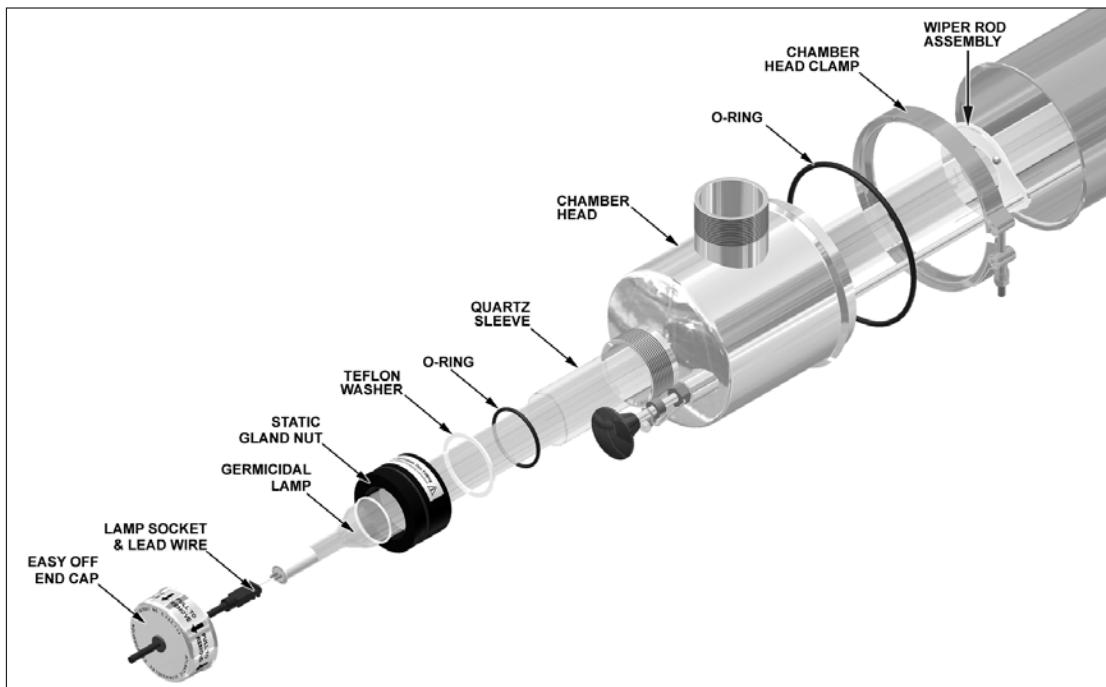
**▲ CAUTION:** Lamp and quartz sleeve are easily damaged. Exercise care when handling.

4. Unscrew static gland nuts from each end of the chamber. Avoid striking quartz sleeve with static gland nut.
5. Remove Teflon® washer and o-ring from both ends of quartz sleeve. Teflon® washer will sometimes remain within the static gland nut. If so, remove Teflon® washer from static gland nut before proceeding.
6. Carefully remove quartz sleeve from chamber. **NOTE:** It is advisable to support the quartz sleeve on the opposite end with your finger so that it does not drop to the bottom of the chamber as it slides into the chamber.
7. Once the quartz sleeve is removed, clean with alcohol or a mild, non-abrasive detergent. Stubborn stains usually can be removed with a dilute hydrochloric acid. **NOTE:** Follow all manufacturer’s instructions and precautions when handling chemicals.
8. Reassemble in reverse order. Make sure the quartz sleeve protrudes an equal distance past each threaded nipple. Be sure o-rings are placed on quartz sleeve before Teflon® washer.
9. Tighten static gland nuts firmly by hand only, **DO NOT USE HAND TOOLS**. Tightening with hand tools is likely to cause quartz sleeve to break.
10. **Slowly** restore water supply to water purifier and check for leaks.
11. If no leaks occur, reinstall lamp, following the steps in “**Lamp Installation or Replacement**” section.

**▲ WARNING:** Germicidal ultraviolet rays are harmful to eyes and skin. Do not restore power to water purifier until lamp and both EASY-OFF™ end caps have been properly reinstalled.

## REPLACEMENT OF BROKEN QUARTZ SLEEVE

Figure 7 - Chamber Head Removal

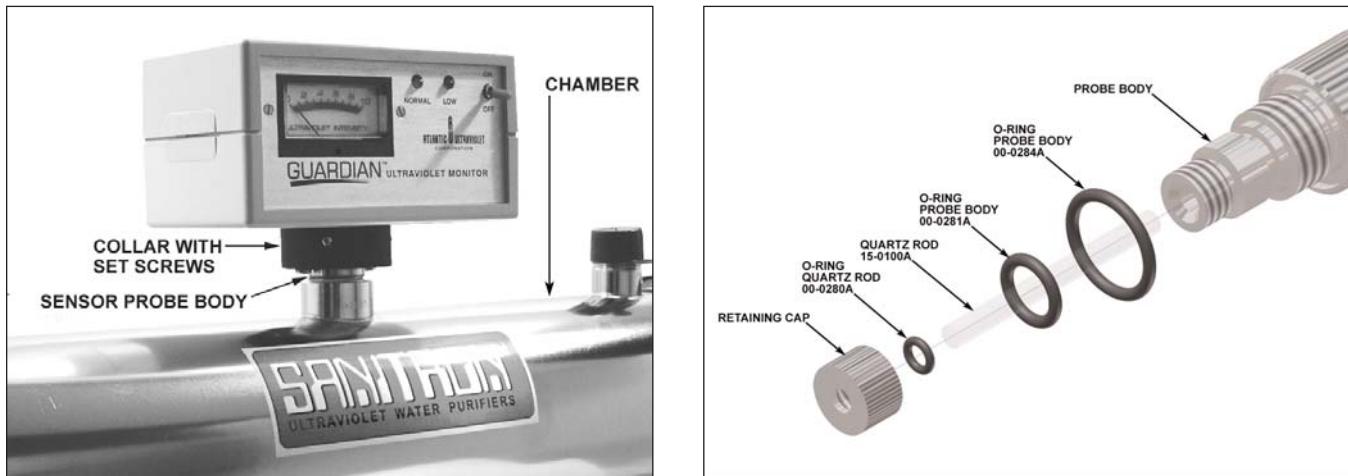


**⚠ CAUTION:** Broken Quartz is SHARP. It is recommended that protective goggles and gloves are worn when handling.

1. Follow the steps in “Quartz Sleeve Removal” to remove lamp and quartz sleeve.
  2. To prevent damage to the electrical components, it is necessary to separate the ballast housing from the purifier chamber.
    - On SANITRON® Model S2400C the ballast housing is mounted to the purifier chamber using four (4) 1/4"-20 x 3/8" long hex head bolts. Using a 7/16" wrench or an adjustable wrench, carefully remove the four (4) bolts with the lock and flat washers, from along the top of the ballast housing, and set aside. Separate the housing from the chamber.
    - Keep ballast housing and mounting hardware in a clean, dry area.
  3. Carefully remove as much of the broken quartz sleeve as possible, from each end of the chamber.
  4. Remove chamber head clamp, by using a 7/16" wrench to loosen and remove the 1/4" nut from the head clamp.
  5. Withdraw chamber head and wiper assembly, from the chamber.
  6. Any broken pieces of the quartz sleeve can now be removed through the open end of the purifier chamber. Flush water through chamber being careful to remove all quartz fragments from the interior of the chamber.
  7. **Carefully** discard all pieces of the broken quartz sleeve.
  8. Inspect the large O-ring used to seal the chamber and the chamber head. Make sure the O-ring is seated properly between the chamber head ring and the flare of the chamber head.
  9. Insert replacement quartz sleeve through each Teflon® wiper segment, starting from the furthest segment working towards the chamber head. Twisting the quartz sleeve will help work the quartz sleeve through the Teflon® segments. Align the end of the quartz sleeve with the threaded gland nipple of the chamber head, and pass the quartz sleeve through the chamber head.
  10. To re-install, carefully slide the chamber head and wiper rod assembly, into the chamber, with drain port pointing down, using your finger, support the far end of the quartz sleeve when passing it through the gland fitting of the chamber. Push chamber head flange into the chamber until both flared ends, of the chamber and the head, mate against the O-ring.
  11. Replace the head clamp around the flared ends of the head and chamber. Install the 1/4" nut and tighten, using a 7/16" wrench, until approximately 3/4" to 7/8" of the bolt protrudes past the nut.
  12. Center the quartz sleeve in the chamber, making sure the quartz sleeve protrudes an equal distance past each threaded gland fitting, of the chamber.
  13. Re-install o-rings, Teflon® washers, and static gland nuts. Be sure o-rings are placed on quartz sleeve before Teflon® washer. Tighten static gland nuts firmly by hand only, **DO NOT USE HAND TOOLS**. Tightening with hand tools is likely to cause quartz sleeve to break.
  14. Re-assemble ballast housing to purifier chamber, using hardware removed in Step 2.
- NOTE:** When re-assembling ballast housing to purifier chamber, electrical power cord should exit ballast housing from the end mounted opposite the drain plug.
15. When all connections are complete, allow water to enter the water purifier at a low flow rate until the purifier is pressurized. With the purifier pressurized, it should be checked for leaks.
  16. See “**Lamp Installation or Replacement**” section to properly re-install the lamp into the water purifier.

## **OPTIONAL GUARDIAN™ ULTRAVIOLET MONITOR SENSOR PROBE CLEANING**

**Figure 8 - Ultraviolet Monitor and Sensor Probe**



If after cleaning the quartz sleeve, there is no significant improvement in the ultraviolet intensity, as shown on the intensity meter, it may be necessary to clean the Ultraviolet Monitor's sensor probe. The sensor probe body mounts in a fitting, located in the center of the disinfection chamber, and protrudes into the chamber.

1. Disconnect power to the water purifier and ultraviolet monitor.
  2. Shut off water supply to the water purifier via the inlet and outlet shut off valves. Drain the chamber by removing the drain plug. Once the chamber is drained, remove any old sealing tape from the threads of the drain plug, rewrap with 1/2" wide Teflon® thread sealing tape, reinstall and tighten the drain plug.
  3. Remove the ultraviolet monitor by loosening the two setscrews on the collar and lifting it free from probe body.
  4. Unscrew the sensor probe and remove from the chamber.
  5. Remove the quartz rod retainer cap, from the probe body. Take care not to damage the quartz rod, o-ring or the threads of the probe body.  
**NOTE:** It is recommended, when servicing the sensor probe, to work in a clean, dry area.
  6. Once the quartz rod is removed, clean with alcohol or a mild detergent, and rinse with clean water. Stubborn stains usually can be removed with a dilute hydrochloric acid. **NOTE:** Follow all manufacturer's instructions and precautions when handling chemicals. Once the quartz rod has been cleaned, handle the rod by the sides, to avoid getting fingerprints on the quartz rod faces.
  7. Clean the probe body, by removing any dirt or deposits on all surfaces. O-rings should be inspected and can be replaced if worn or damaged.
  8. Reassemble, replacing the o-ring, quartz rod and securing in place with the quartz rod-retaining cap. Tighten the quartz rod-retaining cap by hand only, **DO NOT USE HAND TOOLS**. Tightening with hand tools may damage the quartz rod or o-ring seal.
  9. Reinstall sensor probe into the center fitting of the chamber and tighten.
  10. **Slowly** restore water supply to the water purifier, pressurize, and check for leaks. Once it is determined that there are no leaks, inlet valve can be fully opened.
  11. Reposition Ultraviolet Monitor on probe body and tighten setscrews.
  12. Restore power to the water purifier and ultraviolet monitor.
- If after the cleaning of the sensor quartz rod, there is still no significant improvement in the ultraviolet intensity, as shown on the intensity meter, proceed to the “**Troubleshooting**” section.

# TROUBLESHOOTING

---

**▲ CAUTION:** Always disconnect power to the water purifier before performing any service or maintenance.  
**IMPORTANT:** This unit is to be serviced **ONLY** by qualified, and appropriately licensed, personnel.

Table 2 - Troubleshooting

Problem	Possible Cause	Corrective Action
Purifier not operating.	No electrical power...	Verify that the purifier is connected to a live power source.
Water leaking into/from purifier.	Cracked or broken quartz sleeve...	Shut down purifier, drain, and replace quartz sleeve. See “Quartz Sleeve Cleaning or Replacement” in the “Maintenance” section.
	Quartz sleeve sealing o-ring (s) worn, damaged...	Shut down purifier, drain, and remove static gland nut, replace sealing o-ring. See “Quartz Sleeve Cleaning or Replacement” in the “Maintenance” section.
	Poor, or loose, connections or fittings...	Tighten suspect connection or fitting; or shut down purifier, drain, and remove fitting or connection. Clean threads; reapply thread sealing tape and reinstall.
Poor purifier performance AND/OR Low UV intensity (As indicated on Optional Guardian™ Ultraviolet Monitor).	Quartz sleeve fouled...	Clean quartz sleeve, see “Quartz Sleeve Cleaning or Replacement” in the “Maintenance” section.
	Sensor Probe, if equipped, lens fouled...	Clean lens or Quartz Rod, see “Optional Ultraviolet Monitor Sensor Probe Cleaning” in the “Maintenance” section.
	Germicidal lamp output depreciating...	Replace lamp, as it nears its end of life (EOL). See “Lamp Replacement” in the “Maintenance” section.
	Germicidal lamp not functioning...	Replace lamp. See “Lamp Replacement” in the “Maintenance” section.
	Low input voltage...	Verify input voltage to purifier.
	Change in water quality...	Have water tested to confirm that it does not exceed maximum recommended concentration levels for use with this purifier.

# OPTIONAL ACCESSORIES

---

Table 3 - Optional Accessories

Optional Accessories	Available for:
Guardian™ Ultraviolet Monitor - Analog/Digital	S2400C, S5,000C - S25,000C
Sentry™ Safety Sensor	S2400C, S5,000C - S25,000C
Steralert™	S2400C, S5,000C - S25,000C
Audio Alarm	S2400C, S5,000C - S25,000C
Elapsed Time Indicator - Universal Input	S2400C, S5,000C - S25,000C
Time Delay Mechanism	S2400C, S5,000C - S25,000C
Wall Mounting Kit	S2400C
Solenoid Valve - Brass (1-1/2") ①	S2400C
Solenoid Valve - Brass (1-1/2") ②	S2400C
Solenoid Valve - Brass (2") ①	S5,000C - S25,000C
Solenoid Valve - Brass (2") ②	S5,000C - S25,000C
SureFLO™ Flow Control - PVC (2") ③	S2400C
SureFLO™ Flow Control - Stainless Steel (2") ③	S2400C
SureFLO™ Flow Control - PVC (2" Union) ③	S5,000C - S25,000C

Most options are available for operation at 120v 60Hz or 220v 50Hz. Please specify.

Not all options may be available for all models, consult factory for availability.

① Solenoid requires 10-PSI for satisfactory operation.

② Solenoid operates at 0-PSI and up.

③ Unless otherwise specified: PVC flow controls are supplied. All PVC and Stainless Steel flow controls are male NPT.

# TECHNICAL SPECIFICATIONS

---

**Table 4 - Technical Specifications**

Model:	S2400C	\$5,000C	\$10,000C	\$15,000C	\$20,000C	\$25,000C
<b>Flow Rate (GPM):</b>	40	83	166	250	333	416
<b>Flow Rate (GPH):</b>	2400	5,000	10,000	15,000	20,000	25,000
<b>Inlet\Outlet Size:</b>	2"m NPT					
<b>Number of Lamps:</b>	1	2	4	6	8	10
<b>Lamp Model No.:</b>	05-1311-R	05-1311-R	05-1311-R	05-1311-R	05-1311-R	05-1311-R
<b>Length:</b>	52 $\frac{1}{8}$ "					
<b>Width:</b>	6 $\frac{9}{16}$ "	17 "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "
<b>Height:</b>	11 $\frac{1}{8}$ "	15"	34 $\frac{3}{4}$ "	53 $\frac{1}{4}$ "	71 $\frac{3}{4}$ "	90 $\frac{1}{4}$ "
<b>Chamber Diameter:</b>	5 $\frac{1}{2}$ "					
<b>Shipping Weight (Gross):</b>	49 Lbs	116 Lbs	267 Lbs	400 Lbs	534 Lbs	670 Lbs
<b>Voltage:<sup>①</sup></b>	120V	120V	120V	120V	120V	120V
<b>Amps:</b>	1.17A	2.34A	4.68A	7.02A	9.36A	11.7A
<b>Frequency:</b>	60Hz	60Hz	60Hz	60Hz	60Hz	60Hz
<b>Power Consumption:<sup>③</sup></b>	140 Watts	280 Watts	560 Watts	840 Watts	1120 Watts	1400 Watts
<b>Lamp Watts:</b>	110 Watts	220 Watts	440 Watts	660 Watts	880 Watts	1100 Watts
<b>Max Operating Pressure:</b>	100 PSI					
<b>Ambient Temperature:</b>	33° F - 100° F					
<b>Quartz Sleeve:</b>	1	2	4	6	8	10
<b>Drain Plug:</b>	1/4" NPT					
<b>Lamp Out Indicator:</b>	Translucent Sight Port					
<b>Ultraviolet Monitor: <sup>②</sup></b>	Optional	Optional	Optional	Optional	Optional	Optional
<b>Audio Alarm: <sup>②</sup></b>	Optional	Optional	Optional	Optional	Optional	Optional
<b>Solenoid Valve: <sup>②</sup></b>	Optional	Optional	Optional	Optional	Optional	Optional
<b>Time Delay Mechanism: <sup>②</sup></b>	Optional	Optional	Optional	Optional	Optional	Optional
<b>Elapsed Time Indicator:</b>	Optional	Optional	Optional	Optional	Optional	Optional

<sup>①</sup> 220V 50Hz, 220V 60Hz, units are also available. Consult Factory for specific voltage requirements.

<sup>②</sup> Use of this option is recommended by U.S. Public Health Service "Criteria for Acceptability of an Ultraviolet Disinfection Unit." Originally issued April, 1966.

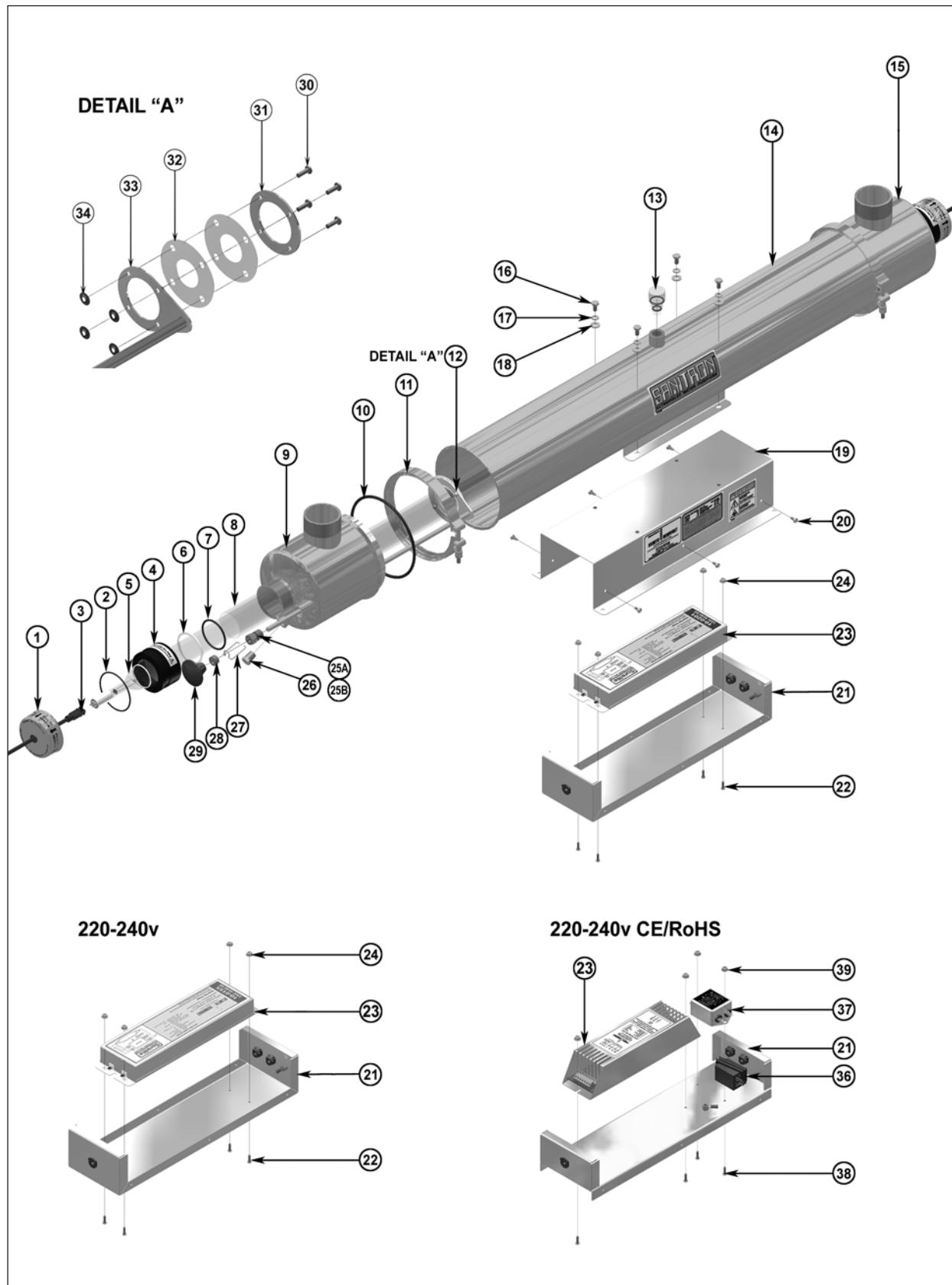
<sup>③</sup> Total power consumption, including ballast loss (based on 120V unit).

All specifications, dimensional data, etc are approximate and subject to change without notice.

# REPLACEMENT PARTS

## SANITRON® Model S2400C

Figure 9 - Exploded View S2400C



**Table 5 - Replacement Parts S2400C**

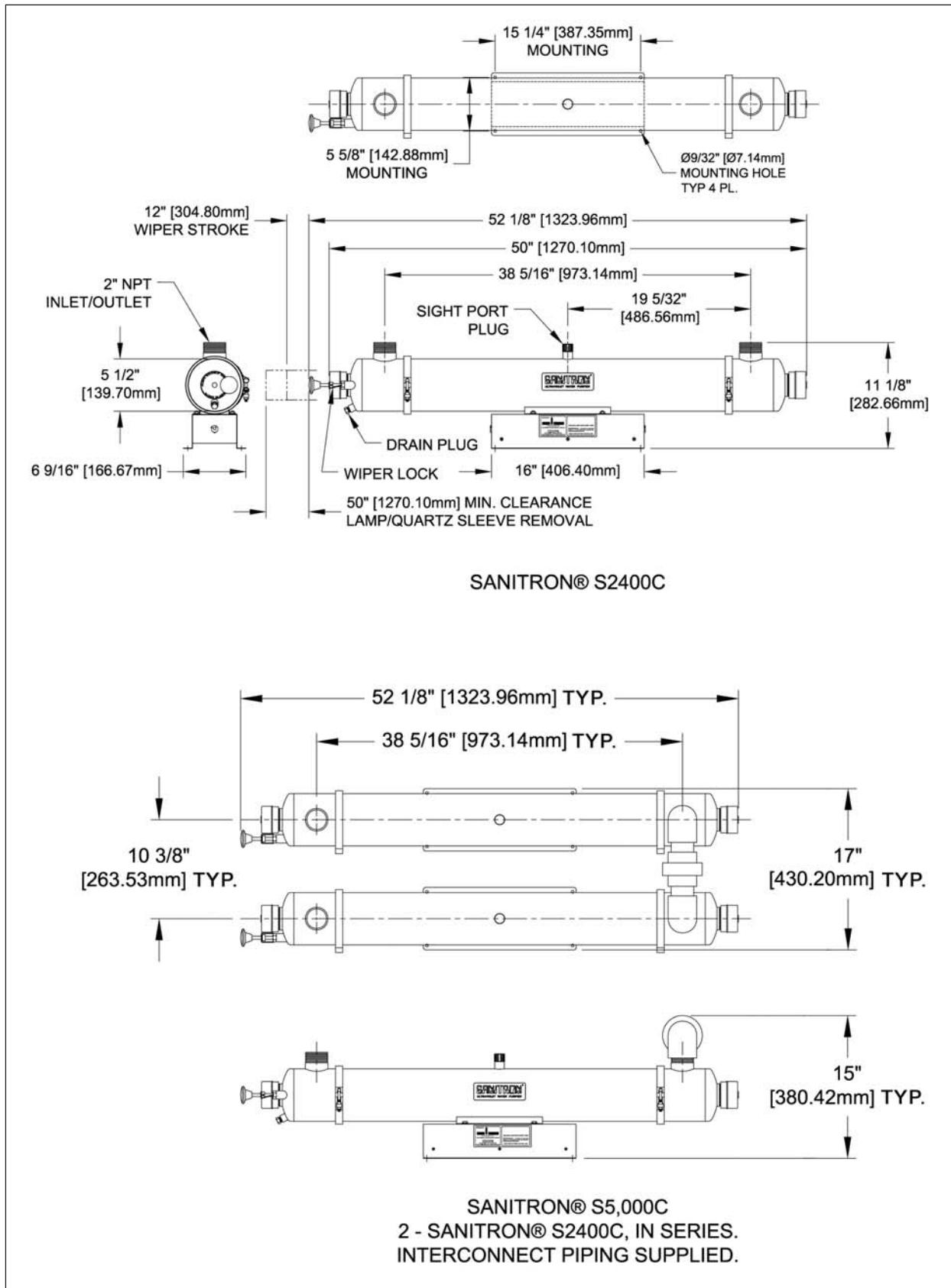
Item No.	Description	120v/60Hz		220-240v/50Hz		CE/RoHS 220-240v	
		Qty	Part No.	Qty	Part No.	Qty	Part No.
1	EASY-OFF™ End Cap	2	25-0389A	2	25-0389A	2	25-0389A
2	Rubber O-ring, Static Gland	2	00-0085A	2	00-0085A	2	00-0085A
3	Lead Wire & Socket	2	05-2400A	2	05-2400A	2	05-2400A
4	Static Gland Nut	2	25-1232C	2	25-1232C	2	25-1232C
5	Lamp	1	05-1311-R	1	05-1311-R	1	05-1311-R
6	Teflon® Washer	2	25-1236A	2	25-1236A	2	25-1236A
7	Rubber O-ring, Quartz Sleeve	2	00-1239A	2	00-1239A	2	00-1239A
8	Quartz Sleeve	1	15-1082A	1	15-1082A	1	15-1082A
9	Head, Flared	1	25-0763A1	1	25-0763A1	1	25-0763A1
10	Rubber O-ring, Flared Head	2	00-0020A	2	00-0020A	2	00-0020A
11	Chamber Head Clamp	2	25-4002A	2	25-4002A	2	25-4002A
12	Wiper Rod Assembly	1	25-0427A	1	25-0427A	1	25-0427A
13	Sight Port Plug	1	30-1075	1	30-1075	1	30-1075
14	Chamber	1	25-0979	1	25-0979	1	25-0979
15	Head, Flared	1	25-0764A1	1	25-0764A1	1	25-0764A1
16	Screw, 1/4"-20 x 3/8" long	4	50-1034	4	50-1034	4	50-1034
17	Lock Washer, 1/4"	4	50-1321	4	50-1321	4	50-1321
18	Flat Washer 1/4"	4	50-1317	4	50-1317	4	50-1317
19	Ballast Housing Cover	1	25-0417A	1	25-0417A	1	25-0417A
20	Screw, No. 8 x 3/8" long	6	50-0082	6	50-0082	6	50-0082
21	Ballast Housing	1	25-0418D	1	25-0125A	1	25-0125B
22	Screw, 6-32 x 1/2" long	4	50-0155	2	50-0155	2	50-0155
23	Ballast	1	10-0201	1	10-0155	1	10-0116
24	Speed Nut, 6-32	4	50-1314	2	50-1314	2	50-1314
25A	Dynamic Gland, Wiper Lock	1	25-1510C1	1	25-1510C1	1	25-1510C1
25B	Dynamic Gland, Wiper Lock	1	25-4041A	1	25-4041A	1	25-4041A
26	Drain Plug	1	27-1216	1	27-1216	1	27-1216
27	Wiper Clip	1	25-1507C1	1	25-1507C1	1	25-1507C1
28	Wiper Lock Spacer	1	25-1512A1	1	25-1512A1	1	25-1512A1
29	Wiper Knob	1	25-1222	1	25-1222	1	25-1222
30	Rivet	16	50-1300A	16	50-1300A	16	50-1300A
31	Wiper Backup Ring	4	25-1379A1	4	25-1379A1	4	25-1379A1
32	Teflon® Wiper Segment	8	25-1242A	8	25-1242A	8	25-1242A
33	Welded Wiper Rod	1	25-0425A	1	25-0425A	1	25-0425A
34	Push Nut	16	50-1223A	16	50-1223A	16	50-1223A
35	Lead Cord	1	35-1100	1	35-1452	1	35-1452
36	Ferrite: Broadband Clamp-on	-	-	-	-	1	35-1766
37	Filter: Power Multi-Stage	-	-	-	-	1	35-1765
38	Screw, 6-32 x 5/16" long	-	-	-	-	2	50-0087
39	Nut, 6-32 Tinnerman	-	-	-	-	2	50-0163

All specifications, dimensional data, etc are approximate and subject to change without notice.

# SANITRON® HIGH CAPACITY SYSTEMS

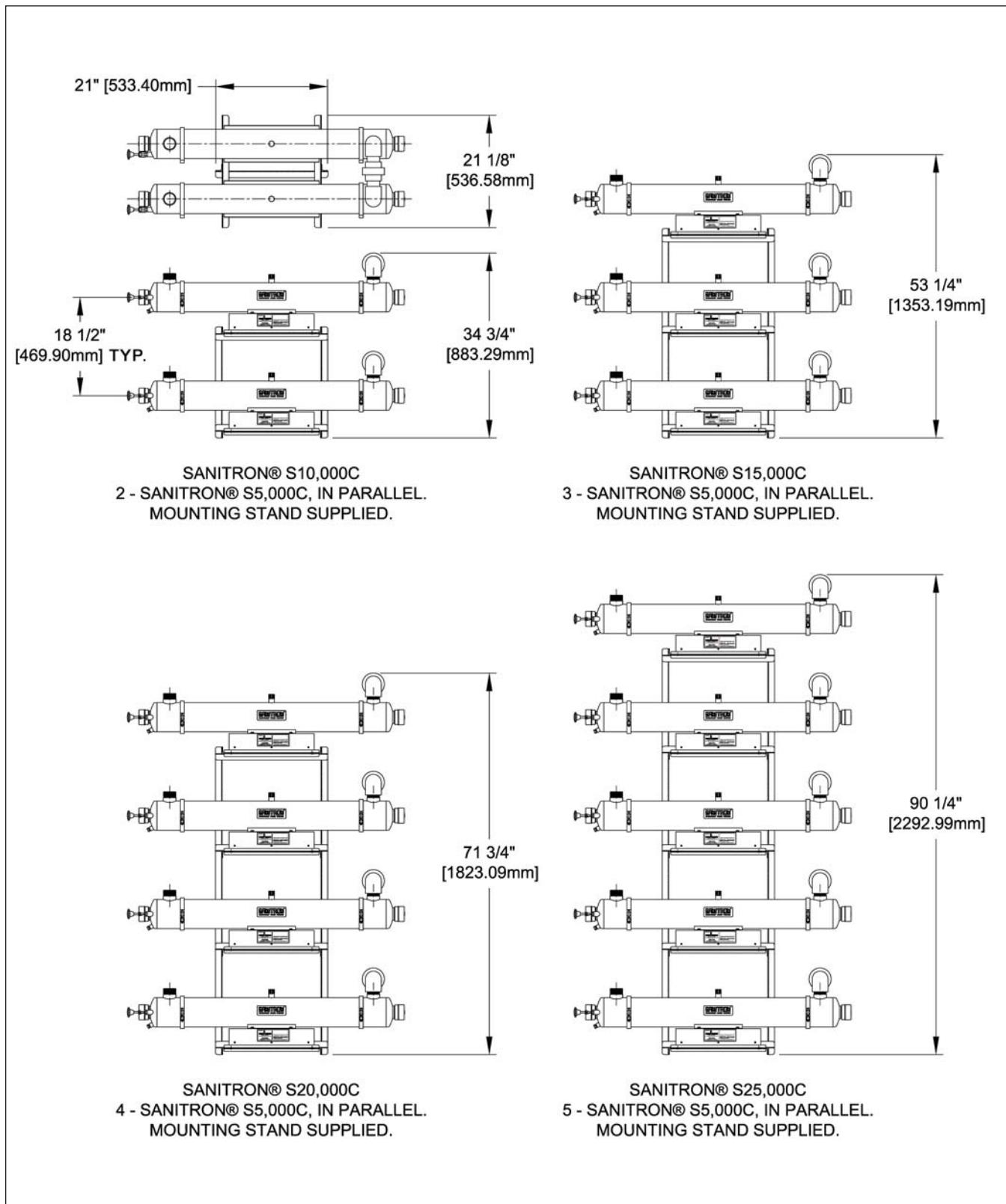
## DIMENSIONAL DATA

Figure 10 - S2400C & S5,000C Dimensional Data



## DIMENSIONAL DATA

Figure 11 - S10,000C, S15,000C, S20,000C, S25,000C Dimensional Data





THE STANDARD OF EXCELLENCE IN ULTRAVIOLET  
Manufacturers / Engineers / Sales / Services

375 Marcus Boulevard  
Hauppauge, New York 11788  
Tel: 631.273.0500  
Fax: 631.273.0771  
631.273.0780  
[www.ultraviolet.com](http://www.ultraviolet.com)  
e-mail: [info@ultraviolet.com](mailto:info@ultraviolet.com)

### Declaration of Conformity

We  
of  
Atlantic Ultraviolet Corporation  
375 Marcus Boulevard, Hauppauge, New York, 11788  
United States of America

Declare that:

Equipment: Water purifier using a germicidal ultraviolet lamp to produce short wave radiation lethal to bacteria, viruses and other microorganisms.  
Model Name / Number: **Sanitron® Ultraviolet Water Purifier, Model S2400C**  
Serial Number: As specified on the equipment.

In accordance with the following Directives:

**89/336/EEC** Electromagnetic Compatibility Directive  
**98/37/EC** Machinery Directive

Has been designed and manufactured to the following specifications:

**EN 60335-1:2002** Specification for safety of household and similar electrical appliances. General requirements  
**EN 55011:1998** Limits and methods of measurement of radio disturbance characteristics of Industrial, Scientific, and Medical (ISM) equipment  
**EN 61000-3-2:2000** Electromagnetic Compatibility-Part 3: Testing and measurement techniques - Section 2: Harmonic current emissions test  
**EN 61000-3-3:1995** Electromagnetic Compatibility-Part 3: Testing and measurement techniques – Section 3: Voltage fluctuation and flicker test  
**EN 61547:1995 & A1:2000** Equipment for general lighting purposes – EMC immunity requirements  
**EN 61000-4-2:1995** Electromagnetic Compatibility-Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test  
**EN 61000-4-3:2002** Electromagnetic Compatibility-Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test  
**EN 61000-4-4:1995** Electromagnetic Compatibility-Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test  
**EN 61000-4-5:1995** Electromagnetic Compatibility-Part 4: Testing and measurement techniques – Section 5: Surge immunity test  
**EN 61000-4-6:1996** Electromagnetic Compatibility-Part 4: Testing and measurement techniques – Section 6: Conducted immunity test  
**EN 61000-4-11:1994** Electromagnetic Compatibility-Part 4: Testing and measurement techniques – Section 11: Voltage dips and interruptions immunity test

I hereby declare that the equipment named above has been tested and found to comply with the relevant sections of the above referenced specifications. The unit complies with all essential requirements of the Directives.

Signed By: Hilary Boehme, President Date: JAN 30, 2007  
Full Name: HILARY BOEHME  
Position: PRESIDENT

GERMICIDAL LAMPS & FIXTURES / AIR PURIFICATION EQUIPMENT / WATER PURIFICATION EQUIPMENT / LIQUID DISINFECTION EQUIPMENT  
OZONE GENERATORS / WASTE WATER DISINFECTION SYSTEMS / PHOTOTHERAPY EQUIPMENT / BLACK LIGHT LAMPS & EQUIPMENT

## USER ASSISTANCE

---

Atlantic Ultraviolet Corporation makes every effort to ensure that the **SANITRON®** line of water purifiers, are products of superior quality and workmanship. This manual describes the assembly, operation and maintenance of the **SANITRON®** Model S2400C family of water purifiers. Models S5,000C and S10,000C through S25,000C High-

Capacity Systems utilize the Model S2400C single lamp water purifier in various configurations. Please read and become familiar with the contents of this manual before assembling or using this unit. If after reading the manual you still have questions, or concerns, regarding the assembly or use of this unit, contact our offices, weekdays

between 8:30 am and 5:00 pm Eastern time, at:

Atlantic Ultraviolet Corporation  
375 Marcus Boulevard  
Hauppauge, New York, 11788  
  
Tel: 631.273.0500  
Fax: 631.273.0771  
E-mail: info@ultraviolet.com  
Website: www.ultraviolet.com

Please REGISTER your product immediately - you can do this in a number of ways. Go online to Ultraviolet.com and on the bottom left of each page either click on "Fill out Warranty Reg. Form on-line!" complete and hit submit or click on "Download a PDF of the Warranty Reg. card" which you can print, fill out and mail in. If you prefer to register over the telephone please call 631-273-0500.

Atlantic Ultraviolet Corporation takes all possible precautions when packaging equipment to prevent damage. Carefully inspect and report all damage. **Do not** install damaged equipment. Follow all instructions on any labels or tags. Carefully inspect all packing materials before discarding to prevent the loss of accessories, mounting hardware, spare parts or instructions.

For your convenience, record the following information below. The model and serial number can be found on a label located on the **SANITRON®** Ultraviolet Water Purifiers. Keep this manual, along with proof of purchase, handy when contacting our offices.

Purchased From:	Date:
Model:	Serial No.:

## WARRANTY

---

We warrant that this product will be free from defects in material and workmanship for a period of one year from the date of shipment thereof or the product's total rated life, whichever first occurs. Within the warranty period we shall repair or replace such products, which are returned to us with shipping charges prepaid, and which are determined by us to be defective. This warranty will not apply to any product, which has been subjected to misuse, negligence, or accident; or misapplied; or modified; or repaired by unauthorized persons; or improperly installed.

The Buyer shall inspect the product promptly after receipt and shall notify us at our main office in writing of claims, including claims of breach of warranty, within thirty (30) days after the Buyer discovers or should have discovered the facts upon which the claim is based. Failure of the Buyer to give written notice of a claim within the time period shall be deemed to be a waiver of such claim.

The provisions of the above warranty are our sole obligation and exclude all other remedies or warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose, whether or not purposes or specifications are described herein. We further disclaim any responsibility whatsoever to the customer, or to any person, for injury to person, damage to, or loss of property or value caused by any product which has been subjected to misuse, negligence, accident; or modified or repaired by unauthorized persons; or improperly installed.

Under no circumstances shall the Company be liable for any incidental, consequential or special damages, losses or expenses arising from the contract for this product, or in connection with the use of, or inability to use, our product for any purpose whatsoever.

### **PATENT NOTICE**

---

No attempt has been made to determine the patent status of applications illustrated or described in this publication. Inclusion in this publication of any design or method of use, which may be patented, is not to be construed as promoting or sanctioning unauthorized use.