

# ULTRAVIOLET WATER PURIFIERS



Model  
40 GPM

## 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 disinfection without special attention or measurement

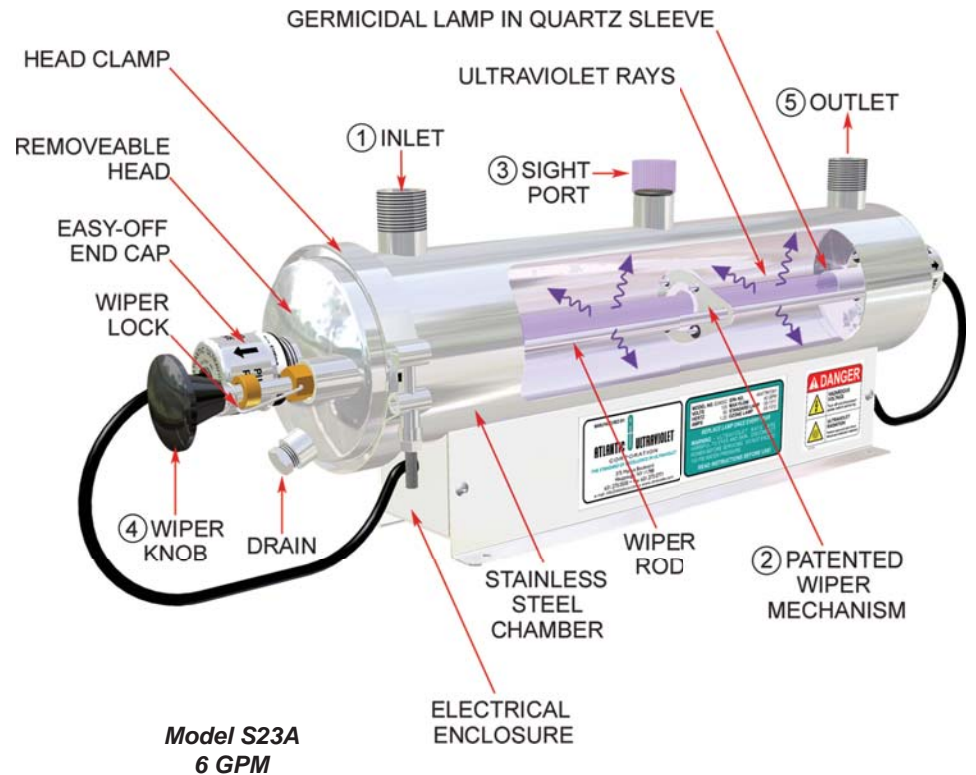
### Chemical Free

No chlorine taste or corrosion problems

### Versatile

Capacities available from 3 to 416 gallons per minute (g.p.m.)

## PRINCIPLE OF OPERATION



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1 The water enters the purifier and flows into the annular space between the quartz sleeve and the chamber wall.

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2 The wiper segments induce turbulence in the flowing liquid to assure uniform exposure of suspended microorganisms to the lethal ultraviolet rays.

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3 Translucent sight port provides positive indication of germicidal lamp operation.

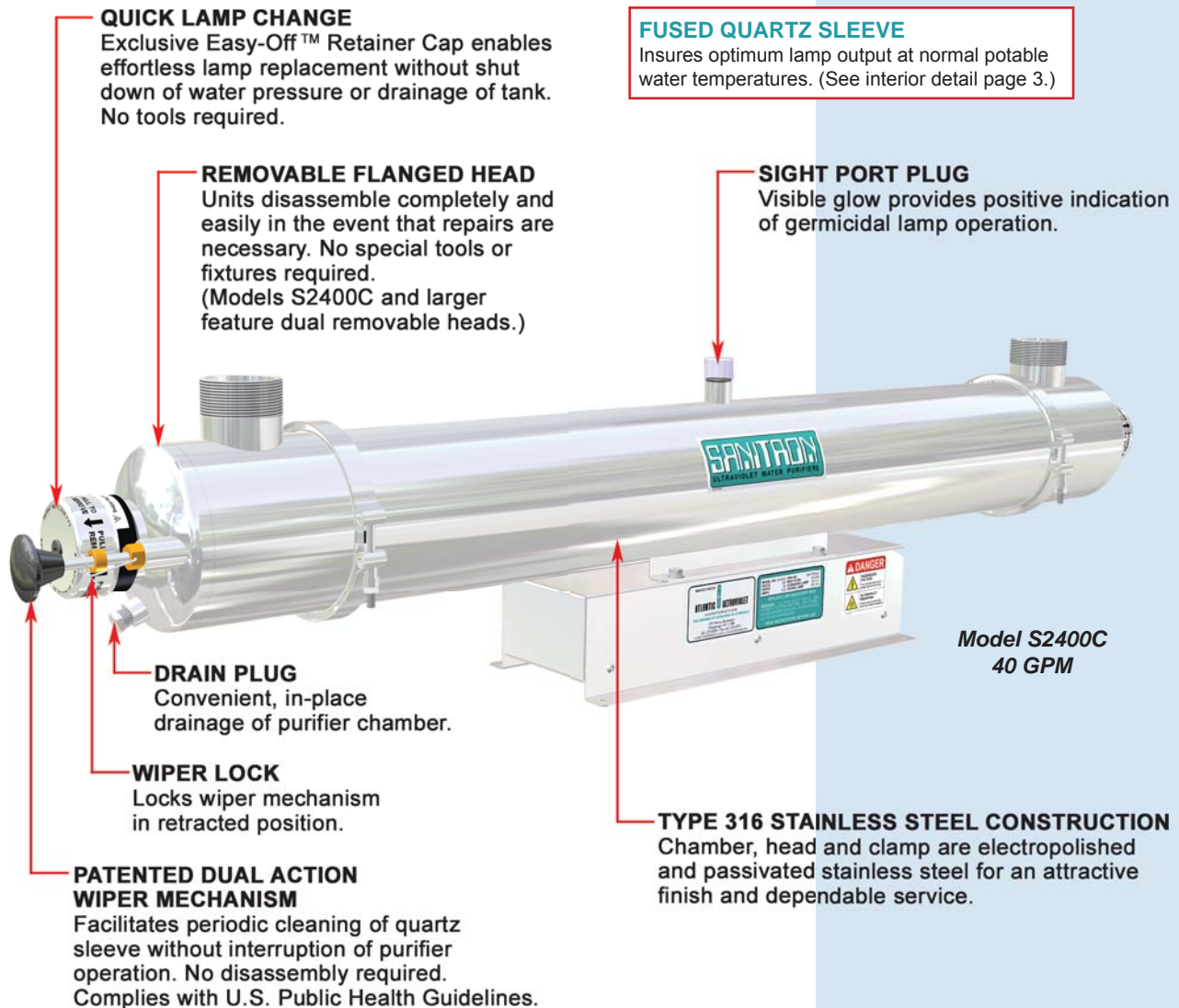
○

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.

## SPECIAL FEATURES



## INSTALLATION & MAINTENANCE

The purifier is installed horizontally as close as possible to the point of use. Connection of the inlet and outlet to water supply and insertion of power plug into 3-wire GFCI 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).

## 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

## MONITORING OPTIONS

### Good



The 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 required
- Mounts on the sight port plug
- Operates on a 9v battery
- Monitors the visible light emitted by the ultraviolet lamp (does not monitor the ultraviolet intensity)
- Warns of lamp or power failure
- Produces a high frequency tone, pulsed at two to three cycles per second
- Available with Remote Sounder
- Available with Dry Contact for Connection to PLC
- Optional 120v 60Hz Power Adapter available
- Available for use with all models

### Better



The Safety Sensor provides constant monitoring of the water purifier's ballast and germicidal lamp operation to give an indication of ballast and germicidal lamp status. The Safety Sensor is capable of operating an optional audio alarm and/or solenoid valve.

- Easy installation
- Plug into an electrical outlet, then plug water purifier into it
- Operates optional Solenoid Valve and/or Audio Alarm
- Easily adaptable for use with other water purifier brands
- Warns of lamp failure
- Available for 120v 50/60Hz or 220v 50/60Hz water purifiers operating with electronic ballasts
- Available for use with most models

### Best



The Ultraviolet Monitor visually indicates the level of germicidal ultraviolet energy that penetrates the quartz sleeve and the water within the disinfection chamber. The Ultraviolet Monitor is capable of operating an optional Audio Alarm and Solenoid Valve. In addition, the 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 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 Ultraviolet Monitor has three models; Analog, Digital and Digital Remote. Voltage Configurations include 120V 50/60Hz, 220-240V 50/60 Hz, or 12VDC. Contact factory for special requirements.

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 Ultraviolet Analog and Digital Monitors are mounted directly onto 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 Ultraviolet Analog or Digital Monitor is secured over the sensor probe.

The 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 monitor behaves the same as the standard monitor. 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.

- Available for use with all models.

Options may be obtained when purchase of SANITRON® unit is made or added at a later date. For further details visit our website at [www.ultraviolet.com](http://www.ultraviolet.com).

# ULTRAVIOLET DOSAGE

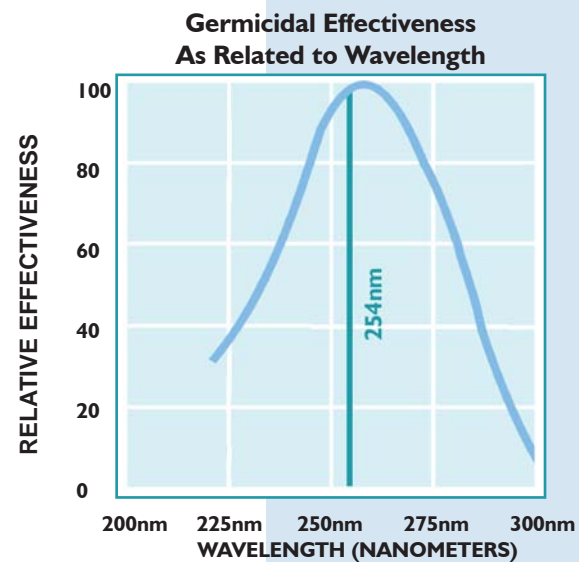
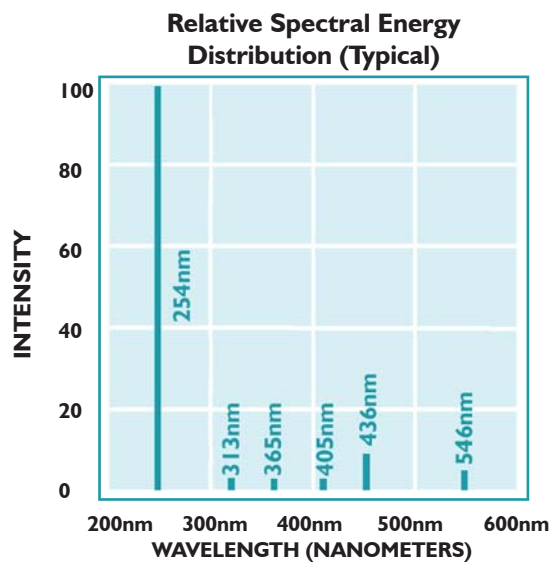
Germicidal lamps provide effective protection against microorganisms. A small cross-section is shown below.

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**<sup>®</sup> GERMICIDAL LAMPS

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

**STER-L-RAY**<sup>®</sup> Germicidal Lamps are well suited to applications requiring high ultraviolet intensity such as water sterilization.

**STER-L-RAY**<sup>®</sup> 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**<sup>®</sup> 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**<sup>®</sup> GX Germicidal Lamps yield 1/3 to 2/3 more ultraviolet output than standard lamps of the same length.

**STER-L-RAY**<sup>®</sup> and the **STER-L-RAY**<sup>®</sup> 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.



## GERMICIDAL LAMP DATA

Lamp Number	Purifier Model No.	Nominal Lamp Length	Power Consumption <sup>①</sup>	Ultraviolet Output <sup>②</sup>	Rated Effective Life
05-1098-R	S17A	11 <sup>1</sup> / <sub>8</sub> " (302mm)	14 Watts	4.0 Watts	10,000 Hrs.
05-1097-R	S23A	17 <sup>3</sup> / <sub>4</sub> " (451mm)	21 Watts	7.3 Watts	10,000 Hrs.
05-1343-R	S37C	33 <sup>3</sup> / <sub>8</sub> " (860mm)	41 Watts	15.0 Watts	10,000 Hrs.
05-1334-R	S50C	45 <sup>5</sup> / <sub>8</sub> " (1165mm)	55 Watts	21.0 Watts	10,000 Hrs.
05-1311-R <sup>③</sup>	S2400C & Larger	46 <sup>1</sup> / <sub>4</sub> " (1175mm)	110 Watts	48.0 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<sup>®</sup>.

The lamps listed above have been especially developed and are recommended for use with **SANITRON**<sup>®</sup> Water Purifiers.

All **STER-L-RAY**<sup>®</sup> lamps used in **SANITRON**<sup>®</sup> units are low pressure type which afford the maximum efficiency in producing the required germicidal rays. In addition, has advantage of high efficiency and low power requirements.

## STANDARD MODELS

## WATER QUALITY RECOMMENDATIONS



**Model S37C**  
**12 GPM**

### 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	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.
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	25 Watts	25 3/8"	4 5/16"	8 3/16"	14	12
*S37C	12	720	1" NPT	05-1343-R	48 Watts	39 3/8"	5 11/16"	9 1/2"	30	25
S50C	20	1,200	1-1/2" NPT	05-1334-R	65 Watts	52 3/8"	5 11/16"	9 1/2"	36	29
*S2400C	40	2,400	2" NPT	05-1311-R	140 Watts	52 3/8"	6 3/8"	11 1/2"	49	36

① All inlets and outlets are male pipe threads.

② Total power consumption including ballast loss.

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

\* **CE Compliant version available.**

# 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 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

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



**Model S5,000C**  
**83 GPM**

Shown with supplied Interconnect piping, optional Guardian™ Digital Ultraviolet Monitors, Solenoid Valve, Flow Control Valve and customer supplied piping, union and shut-off valve.

Model	Gallons per Minute	Gallons per Hour	Inlet and Outlet <sup>⑥</sup>	Replacement Lamps	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-R (2)	280 Watts	52½"	17"	15"	116	85
*S10,000C <sup>②</sup>	166	10,000	2" NPT	05-1311-R (4)	560 Watts	52½"	21½"	34¾"	267	188
*S15,000C <sup>③</sup>	250	15,000	2" NPT	05-1311-R (6)	840 Watts	52½"	21½"	53¾"	400	263
*S20,000C <sup>④</sup>	333	20,000	2" NPT	05-1311-R (8)	1120 Watts	52½"	21½"	71¾"	534	396
*S25,000C <sup>⑤</sup>	416	25,000	2" NPT	05-1311-R (10)	1400 Watts	52½"	21½"	90¾"	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 8.
- 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.

\* **CE Compliant version available.**



## COMMERCIAL & INDUSTRIAL



### **Model S10,000C 166 GPM**

*Shown with supplied Interconnect Piping, optional Guardian™ Digital Ultraviolet Monitors, Solenoid Valves, Flow Control Valves and customer supplied manifolds, piping, unions and shut-off valves.*

## APPLICATIONS FOR ULTRAVIOLET WATER PURIFIERS

### **Institution systems...**

- laboratories
- hospital
- clinics
- maternity areas
- labor & delivery areas
- pathology labs
- kidney dialysis labs
- nursing homes
- universities
- schools
- veterinary clinics

### **Transient systems...**

- resorts, hotels, & motels
- ships, yachts, boats
- campgrounds

- restaurants
- water parks
- amusement parks
- golf course water holes
- lakes and ponds
- fountain water features
- ornamental ponds
- fish ponds
- swimming pool

### **Community systems...**

- apartment complexes
- condominium complexes
- trailer parks
- rural water
- villages, towns, cities
- farms & ranches

- animal husbandry
- aquariums
- fish farms
- mollusk hatcheries
- water preserves
- well water

### **Industry systems...**

- pharmaceutical mfg.
- electronic production
- cosmetic production
- cooling tower
- power generation
- food industry
- ice makers
- pulp & paper production
- water vending machines

- laundry water
- pure wash water
- bottled water
- beer, wine
- soft drinks
- fruit juices
- bottling facilities
- edible oils
- liquid sugar
- sweeteners
- water based lubricants
- dairy processing
- cistern applications
- 
- TOC Reduction
- Ozone Reduction