

# MIGHTY★PURE<sup>®</sup>

ULTRAVIOLET WATER PURIFIERS



Model MP36C  
12 GPM

ATLANTIC  ULTRAVIOLET  
CORPORATION<sup>®</sup>

## 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.

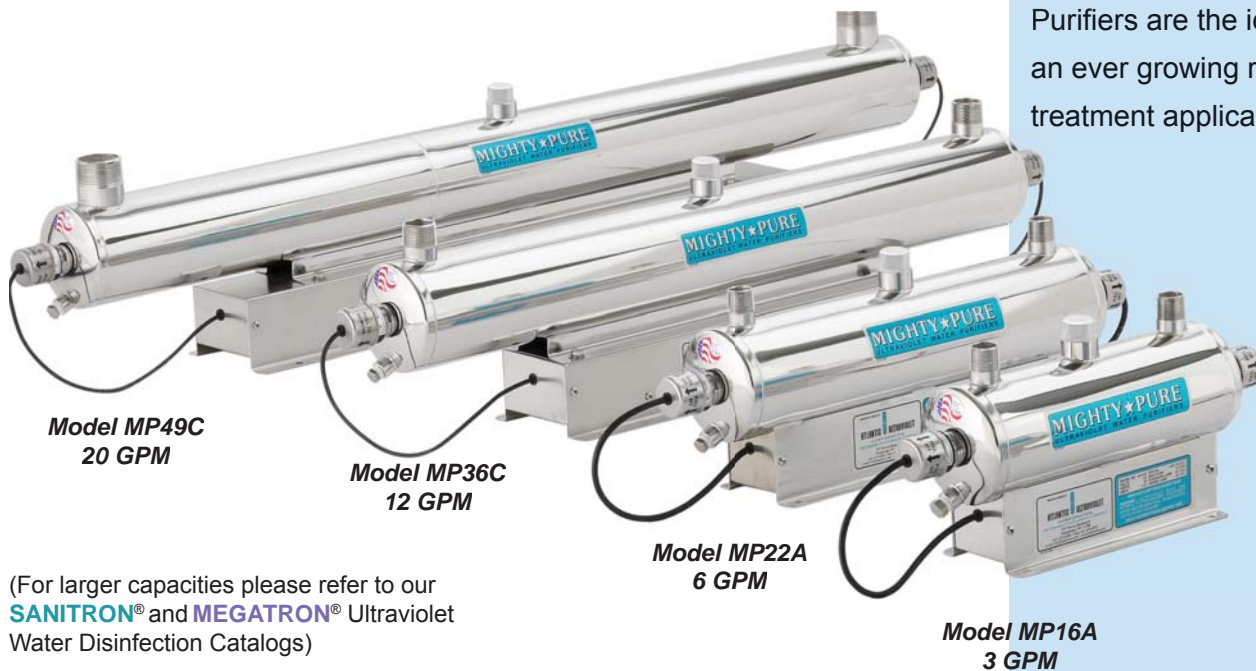
## GERMICIDAL ULTRAVIOLET

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

**MIGHTYPURE®** 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.

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



(For larger capacities please refer to our **SANITRON®** and **MEGATRON®** Ultraviolet Water Disinfection Catalogs)

## ADVANTAGES

### Effective

Virtually all microorganisms are susceptible to **MIGHTYPURE®** 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

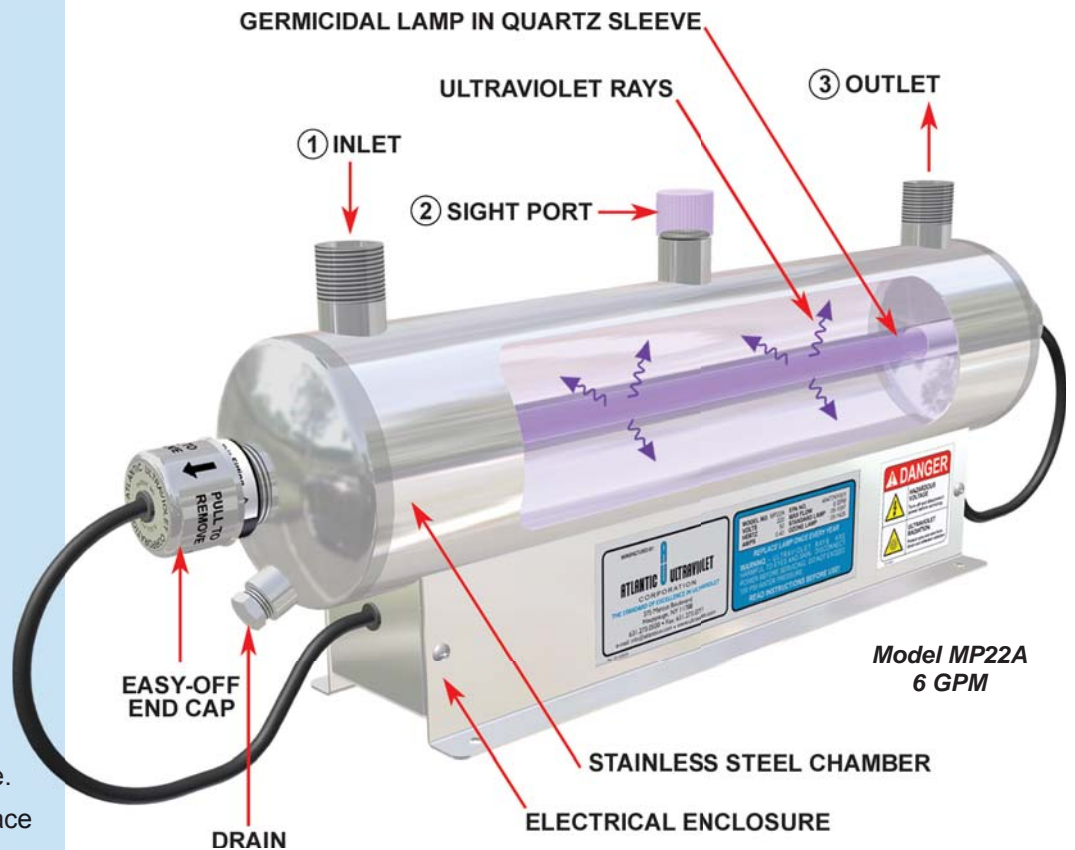
### Chemical Free

No chlorine taste or corrosion problems

### Versatile

Capacities available from 3 to 20 gallons per minute (g.p.m.)

## PRINCIPLE OF OPERATION



- ① The water enters the purifier and flows into the annular space between the quartz sleeve and the chamber wall.
- ② Translucent sight port provides positive indication of germicidal lamp operation.
- ③ Water leaving the purifier is instantly ready for use.

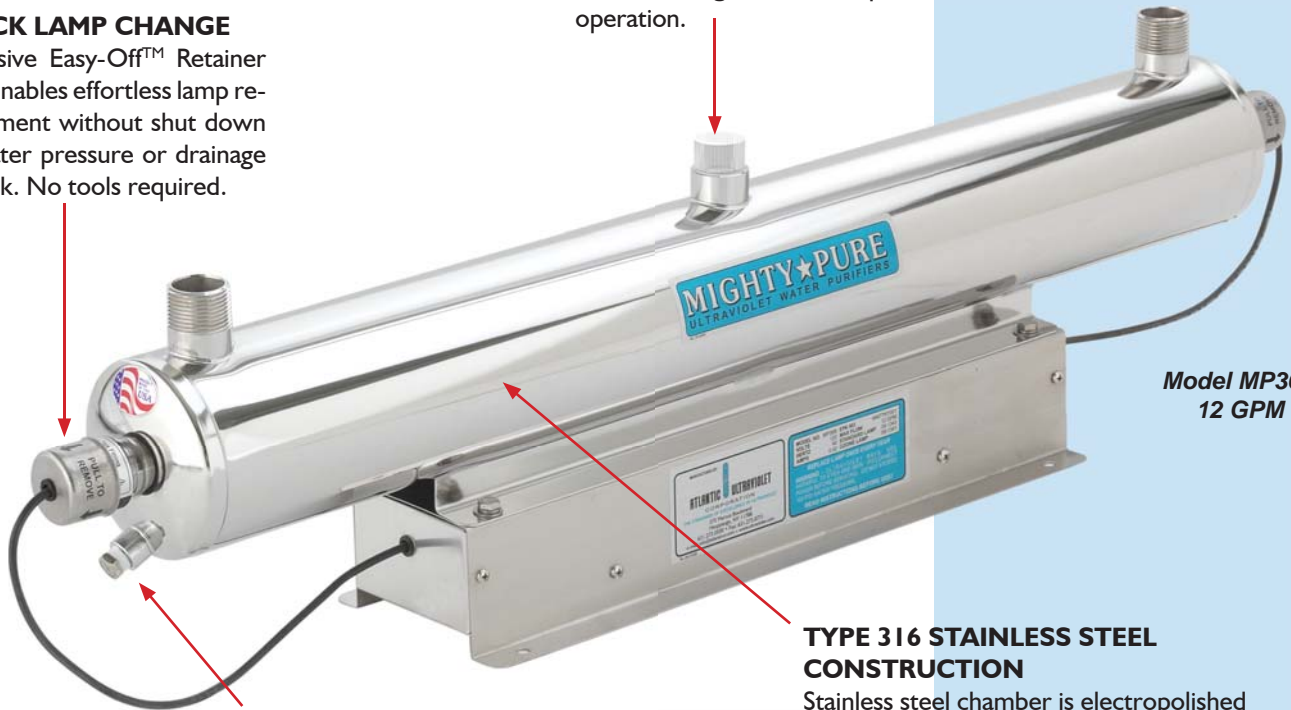
## SPECIAL FEATURES

### 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.

### SIGHT PORT PLUG

Visible glow provides positive indication of germicidal lamp operation.



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### DRAIN PLUG

Convenient, in-place drainage of purifier chamber.

### TYPE 316 STAINLESS STEEL CONSTRUCTION

Stainless steel chamber is electropolished and passivated for an attractive finish and dependable service.

### FUSED QUARTZ SLEEVE

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

## 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 grounded GFCI outlet is all that is required.

Ordinary maintenance consists of routine cleaning of the quartz sleeve once monthly or more frequently where conditons 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 malfunction- 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 **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 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 **MIGHTYPURE®** and **SANITRON®** models

### Better



The **SENTRY™** 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 **SENTRY™** Safety Sensor is capable of operating an optional audio alarm and/or solenoid valve.

- Easy installation
- Plug **SENTRY™** into an electrical outlet, then plug water purifier into **SENTRY™**
- 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 **Bio-Logic®**, **MINIPURE®**, **MIGHTYPURE®** and **SANITRON®** models

### 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 50/60Hz, 220-240V 50/60 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 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 **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.

- Available for use with all **MIGHTYPURE®** and **SANITRON®** models

Options may be obtained when purchase of **MIGHTYPURE®** 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

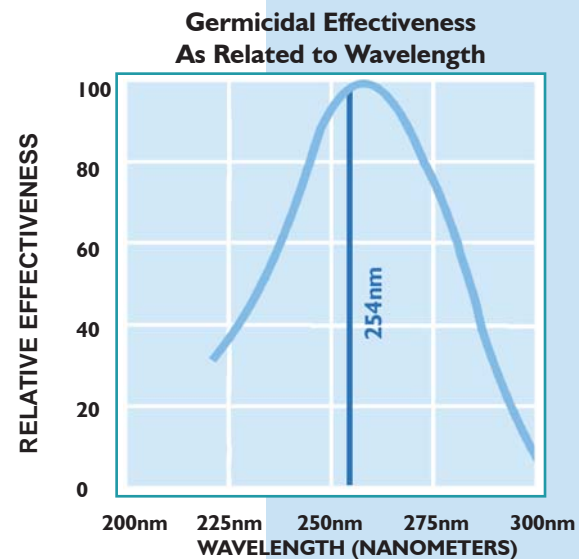
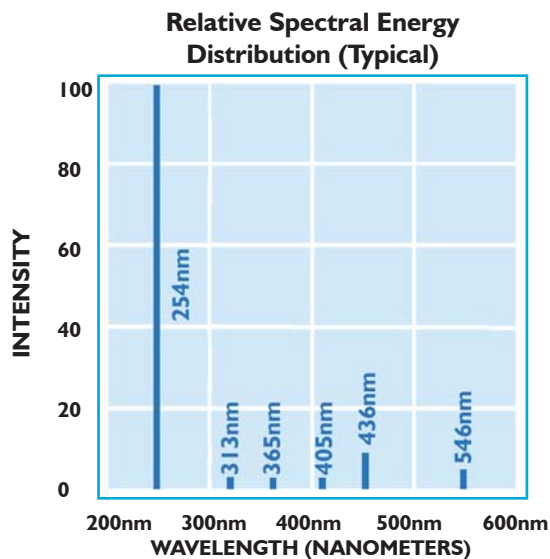
Germicidal lamps provide effective protection against microorganisms. A small cross-section is shown below.

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, **MIGHTYPURE**® 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®** 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**



## 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	MP16A	11 $\frac{1}{8}$ " (302mm)	14 Watts	4.0 Watts	10,000 Hrs.
05-1097-R	MP22A	17 $\frac{3}{4}$ " (451mm)	21 Watts	7.3 Watts	10,000 Hrs.
05-1343-R	MP36C	33 $\frac{3}{8}$ " (860mm)	41 Watts	15.0 Watts	10,000 Hrs.
05-1334-R	MP49C	45 $\frac{5}{8}$ " (1165mm)	55 Watts	21.0 Watts	10,000 Hrs.

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

② Maximum rated output at 254 nanometers.

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

All **STER-L-RAY®** lamps used in **MIGHTYPURE®** 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

### Maximum Concentration Levels Before Ultraviolet

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



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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.
MP16A	3	180	3/4" NPT	05-1098-R	18 Watts	16 1/2	4 5/16	8 3/8	10	9
MP22A	6	360	3/4" NPT	05-1097-R	25 Watts	22 1/2	4 5/16	8 3/8	13	11
* MP36C	12	720	1" NPT	05-1343-R	48 Watts	36 1/2	5 11/16	9 1/2	30	25
MP49C	20	1,200	1-1/2" NPT	05-1334-R	65 Watts	49 1/2	5 11/16	9 1/2	34	29

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 5 PSI or less
- Flow rates are based on Maximum Concentration Levels
- All data shown reflects 120 Volt 50/60 Hz operation
- **MIGHTYPURE**® units are also available in 220 Volt 50/60 Hz and 12 and 24 Volt DC
- **MIGHTYPURE**® is available for operation on public power supplied throughout the world
- Consult factory with specific power requirements

\* **CE Compliant version available.**



# APPLICATIONS FOR ULTRAVIOLET WATER PURIFICATIONS



## **Residential & Recreational...**

- point of use installation
- under the sink
- water vending machines
- whole house purification
- well water disinfection
- water cistern sterilizers
- rural water systems
- recreational vehicles
- motor homes & trailers
- airplanes
- boats
- hot tubs & spas
- swimming pools
- fish ponds
- koi ponds
- water gardens
- lakes
- ornamental ponds
- fountain water features
- aquariums
- hatcheries
- rainwater collection
- water dispensing appliances

## **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

## **Community systems...**

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

## **Industry systems...**

- pharmaceutical mfg.
- electronic production
- cosmetic production
- cooling tower
- power generation
- nurseries
- 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
- mollusk hatcheries
- water preserves
- 
- TOC Reduction
- Ozone Reduction

# APPLICATIONS FOR ULTRAVIOLET WATER PURIFICATIONS

The unique advantage of the UV method of sterilization of water is that nothing is added to the water. When chemical methods of treatment are used there may be handling problems, taste and odor problems, and undesirable chemical reactions with substances present in the water.

This difference is most significant when producing water for drinking or swimming, processing foods and bottled beverages, manufacturing cosmetics or pharmaceuticals, use in hospitals and research institutions, and tertiary treatment of municipal or industrial wastewater.

**The versatility of UV purification includes:**

**UV purification produces germ-free potable water for home, institutional and municipal use.**

- for application to water wells; bacterial contamination of wells is unpredictable and may occur from seepage of surface water or sewage.
- for installation on outlet side of water cisterns, most cisterns foster the proliferation of bacteria in untreated water.
- for swimming pools; to control bacteria, algae and slime formation. It avoids the undesirable effects of heavily chlorinated swimming pool water by allowing substantial reduction of the use of chlorine.

**It provides bacteria-free food process water without the use of germicides, oxidants, algacides or chemical precipitants; particularly applicable where chlorine adversely affects flavor.**

- for the brewery, winery, soft drink, and water bottling industries, where biological purity of the water must be absolutely maintained in order to insure product quality.
- for safeguarding against spoilage of dairy products, e.g., cottage cheese and butter; certain psychrophilic bacteria are resistant to chlorine treatment.
- for sterile washwater; to guard against waterborne bacteria spoilage where vegetable, fruits, meats, fish and other products must be washed in water before packaging.

**UV purification is particularly useful in applications where chlorine-free, de-ionized and/or carbon filtered water are extensively employed. Unattended carbon filters and ion-exchange tanks act as incubators for bacteria accumulation.**

- for electronics; in conjunction with de-ionized and high purity water systems.
- for pharmaceuticals and cosmetics; strict water treatment standards are necessary for strict maintenance of product's quality control.
- for biological laboratories; sterile water is required for testing and research work.
- for hospitals; provides ultra-pure water on demand for maternity labor and delivery areas, pathology labs, etc.

**In industrial pollution control, it affords an excellent end-treatment for positive protection in wastewater control systems.**

- for selective use as a tertiary treatment for bacteria destruction after removal of chemicals and other objectionable ingredients



# COMPARISON OF ATLANTIC ULTRAVIOLET WATER PURIFIERS

<b>FEATURES</b> [S] - Standard [O] - Optional [X] - Yes	<b>Bio-Logic®</b> Pure Water Pack™ 1.5 GPM	<b>MINIPURE®</b> 1 to 9 GPM	<b>MightyPure®</b> 3 to 20 GPM	<b>SANITRON®</b> 3 to 20 GPM	<b>SANITRON®</b> 40 to 416 GPM	<b>MEGATRON®</b> 90 to 450 GPM
Stainless Steel Construction	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Germicidal Ultraviolet Lamp with 10,000 Hours Rated Effective Life	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Quick Lamp Change with the Easy Off™ Retainer Cap	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Fused Quartz Sleeve	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Lamp Out Indicator Light(s)	<b>S</b>	<b>S</b>	-	-	-	<b>S</b>
Sight Port to View Lamp Operation	-	-	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Drain Fitting	-	-	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Patented Dual Action Wiper Mechanism - Manual	-	-	-	<b>S</b>	<b>S</b>	<b>S</b>
Patented Dual Action Wiper Mechanism - Automatic	-	-	-	-	-	<b>O</b>
Head(s) that can be removed or rotated	<b>S</b>	-	-	<b>S</b>	<b>S</b>	<b>S</b>
Sediment and Carbon Filter	<b>S</b>	-	-	-	-	-
Mounting Kit / Bracket	<b>S</b>	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b> <sup>①</sup>	-
Guardian™ Ultraviolet Monitor	-	-	<b>O</b>	<b>O</b>	<b>O</b>	<b>S</b>
Sentry™ Safety Sensor	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	-
Audio Alarm	<b>O</b>	<b>O/S</b> <sup>③</sup>	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>
Solenoid Valves	-	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	-
Flow Control Valves	-	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	-
Elapsed Time Indicator	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	<b>S</b>
Time Delay Mechanism	-	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	-
Residential use	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	-
Commercial Use	-	-	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
CE Certified <sup>②</sup>	-	-	<b>X</b>	<b>X</b>	<b>X</b>	-

**NOTE:** This list depicts options for 120v 50/60Hz operation. Consult factory for options with other power requirements.

<sup>①</sup> Model S10,000C & larger come equipped with mounting rack.

<sup>②</sup> MightyPure® MP36C and SANITRON® S37C, S2400C, S5000C, S10,000C, S15,000C and S20,000C are available as CE Certified.

<sup>③</sup> Standard feature in some MINIPURE® units.

THE STANDARD OF EXCELLENCE IN ULTRAVIOLET



Manufacturers / Engineers / Sales / Service



375 Marcus Boulevard • Hauppauge, NY 11788 • 631.273.0500 • Fax: 631.273.0771 • E-mail: [info@ultraviolet.com](mailto:info@ultraviolet.com) • [ultraviolet.com](http://ultraviolet.com)

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