

MIGHTY★PURE®

ULTRAVIOLET WATER PURIFIERS



Model MP36C
12 GPM



System Tested and Certified by
NSF International against
NSF®/ANSI Standard 55 for
Disinfection Performance, Class B

SINCE 1963
ATLANTIC U ULTRAVIOLET
CORPORATION®

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.

The UV Application Specialists at Atlantic Ultraviolet Corporation® 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 Corporation® to fulfill its commitment to provide fast deliveries and responsive customer service.



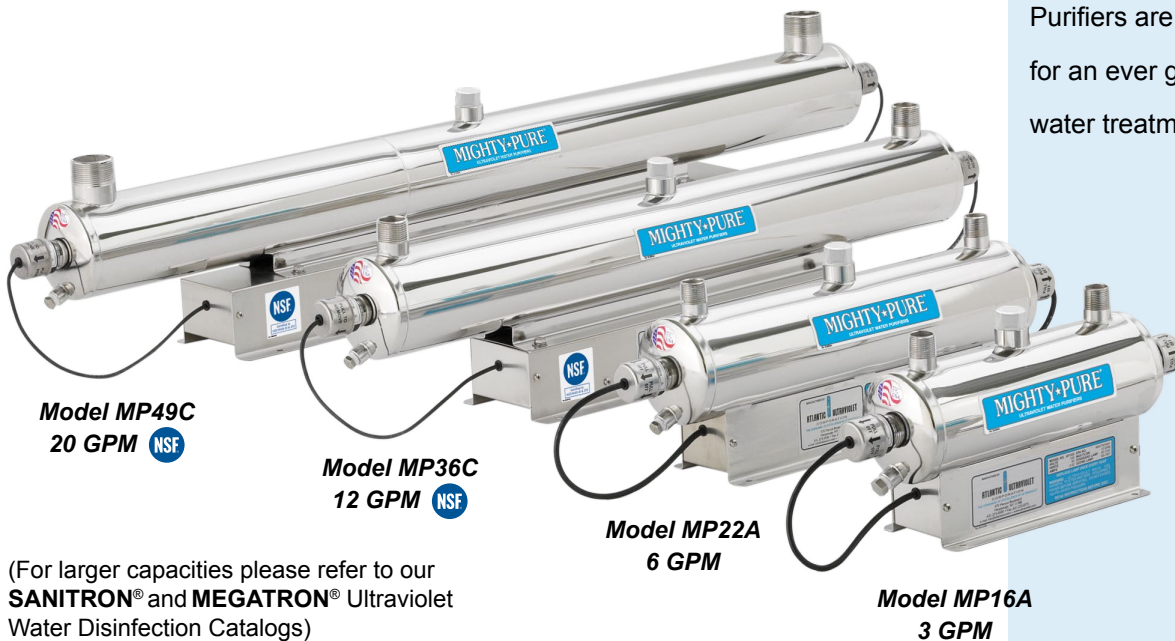
GERMICIDAL ULTRAVIOLET

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

MIGHTY★PURE® Ultraviolet Purifiers utilize germicidal ultraviolet lamps that produce short wave radiation lethal to bacteria, virus, 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.

MIGHTY★PURE® 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 **MIGHTY★PURE®** 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 purifiers require minimum space

Automatic

Provides continuous disinfection without special attention or measurement

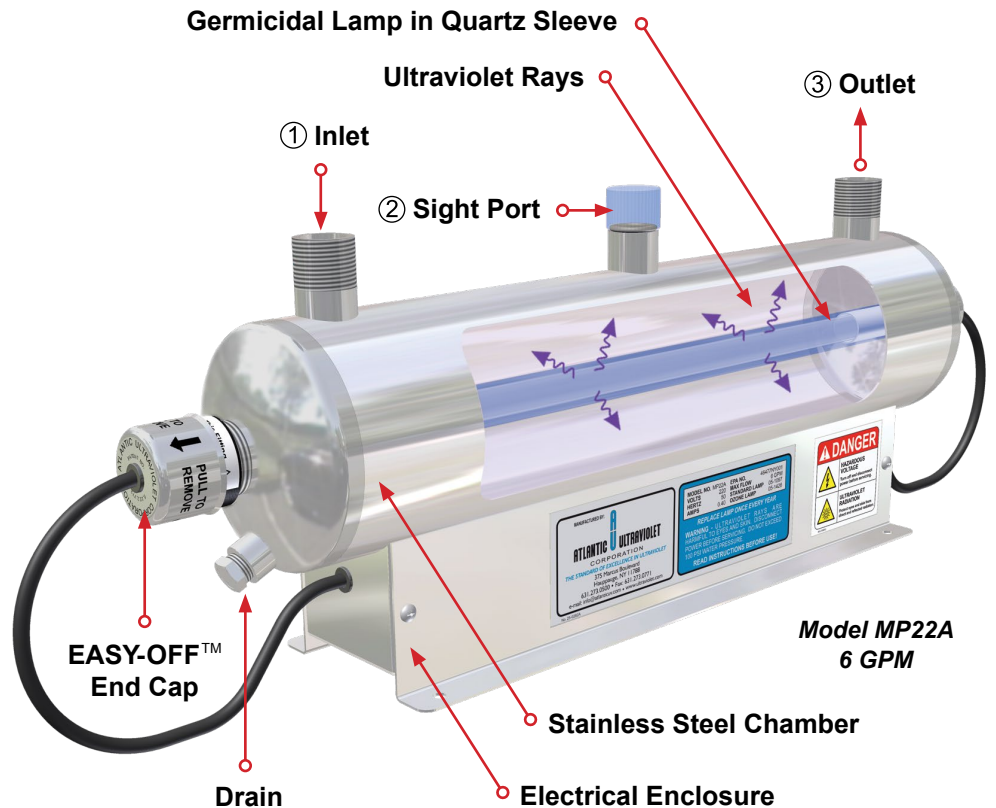
Chemical Free

No chlorine taste or corrosion problems

Versatile

Capacities available from 3 to 20 gallons per minute (GPM)

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

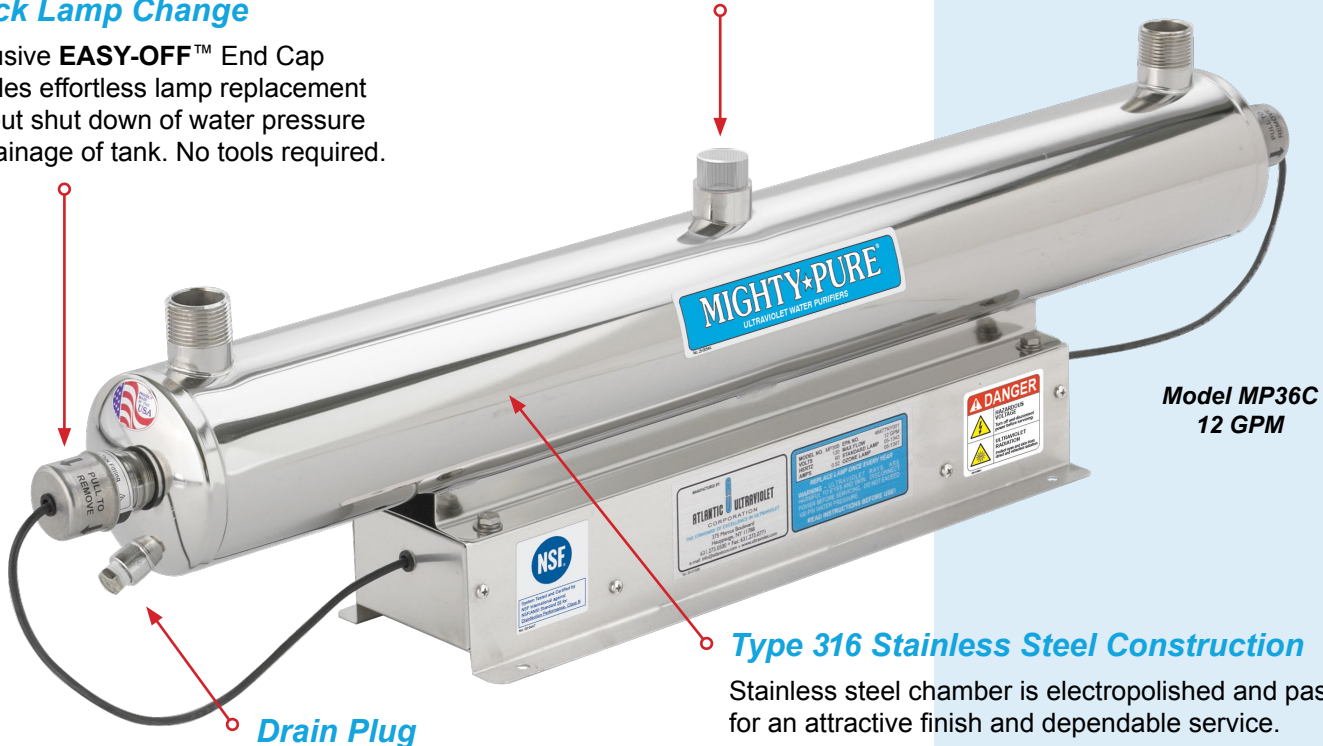
Exclusive **EASY-OFF™** End Cap enables effortless lamp replacement without shut down of water pressure or drainage of tank. No tools required.

Sight Port Plug

Visible glow provides positive indication of germicidal lamp operation.

FUSED CRYSTAL CLEAR™ QUARTZ SLEEVE

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



Model MP36C
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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.

STER-L-RAY® Germicidal Ultraviolet Lamp

Utilized in each **MIGHTY-PURE®** Water Purifier, providing the utmost in quality, sustained output and longevity (See interior detail on 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 conditions dictate. Lamp replacement is recommended every 10,000 hours of operation (approximately 14 months of continuous service).

OPTIONAL ACCESSORIES

Promate™ Audio Alarm
Activated by the **SENTRY™** or **GUARDIAN™** and alerts user to any malfunction detected



Promate™ Elapsed Time Indicator
Real-time, non-resettable display of accumulated operating hours



Promate™ Solenoid Valve
Operates with the **GUARDIAN™** or **SENTRY™** and prevents flow during detected malfunctions



Promate™ Time Delay Mechanism
Operates with **GUARDIAN™** or **SENTRY™** and **Promate™** solenoid valve to provide a 2-minute warm-up period for lamp to achieve full germicidal output



SureFLO™ Flow Control Valve

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



Promate™ 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



Promate™ Safety Glasses
Safety eyewear should be used as general-purpose safety protection and for additional shielding from germicidal ultraviolet rays.



Promate™ Face Shield

Lightweight visor with adjustable headgear provides eye and face protection from germicidal ultraviolet rays.



MONITORING OPTIONS

The **GUARDIAN™** Ultraviolet Monitors are available in three models: Analog, Digital, and Digital Remote, and can either be purchased and installed with a UV water purifier, or at a later date for an existing installation.

The **GUARDIAN™** Ultraviolet Monitor visually indicates the level of germicidal ultraviolet energy that penetrates the quartz sleeve and water within the water purifier. The use of an ultraviolet monitor is recommended by the United States Public Health Service in "Criteria for the Acceptability of an Ultraviolet Disinfection Unit."

GUARDIAN™ Ultraviolet Monitors 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 or ballast failure.
- Depreciation of the lamp output due to usage or other cause. Lamp output gradually depreciates with use. Lamp replacement is recommended once a year or every 10,000 hours.

All **GUARDIAN™** Ultraviolet Monitors provide outputs to control the operation of an optional **Promate™** Solenoid Valve and/or optional **Promate™** Remote Audio Alarm.



Analog - Direct Mount **GUARDIAN™** Ultraviolet Monitor is available in two voltage configurations: 120v 50/60Hz and 220–240v 50/60Hz, and can be mounted directly to the water purifier using a standard quartz probe.



Digital - Direct Mount **GUARDIAN™** Ultraviolet Monitor is available in two Low Voltage Models: a 12v Model, and a 110/220v Model which uses a multi-plug configuration 12v adapter to operate. This model also provides several outputs for remote monitoring of the water purifier operation:

- 4–20mA Output: Provides current for remote display of ultraviolet intensity.
- Dry Contacts: Provide contacts for remote indication of ultraviolet trip levels.
- 12v DC Output: Provides power for a low-voltage external audio alarm.
- RJ45 Modular Jack Adapter and RJ45 Modular Cable



Digital Remote - Remote Mount **GUARDIAN™** Ultraviolet Monitor is intended for use in locations away from the water purifier it is monitoring. In all other respects, the remote monitor operates in the same manner as the standard Digital **GUARDIAN™** Ultraviolet Monitor.



GUARDIAN™ ASSIST Ultraviolet Monitor Extension - Designed to remotely indicate the intensity level displayed on the **GUARDIAN™** Ultraviolet Monitor.



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 fails.

- 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 Dry Contact for connection to PLC
- Optional Remote Sounder available
- Optional 120v 60Hz Power Adapter available



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 **Promate™** Audio Alarm and/or **Promate™** Solenoid Valve.



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

Options may either be obtained when purchase of **MIGHTY★PURE®** model is made, or added at a later date. For further details, visit Ultraviolet.com or BuyUltraviolet.com.

ULTRAVIOLET DOSAGE

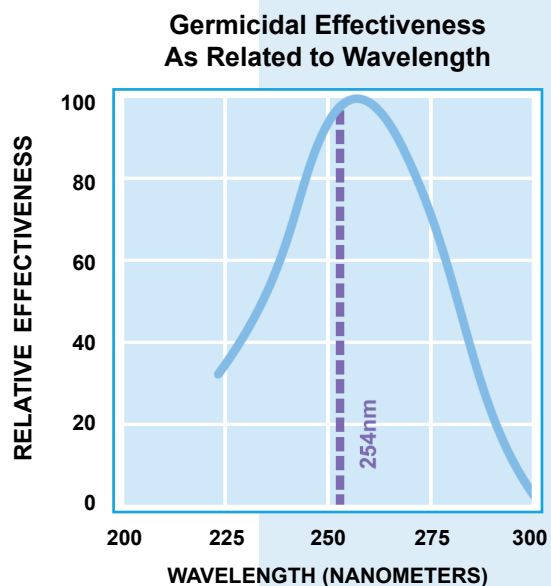
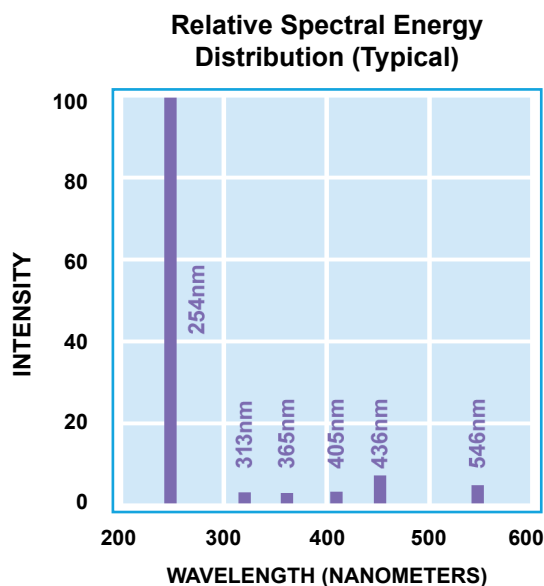
Germicidal lamps provide effective protection against microorganisms. A small cross-section is shown below.

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, **MIGHTY★PURE®** 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 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 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 purification.

STER-L-RAY® Instant Start Germicidal Lamps 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 an 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: LampRecycle.org.

Instant Start Germicidal Lamps



Preheat Germicidal Lamps



GERMICIDAL LAMP DATA

Lamp Number	Purifier Model No.	Nominal Lamp Length	Power Consumption ①	Ultraviolet Output ②	Rated Effective Life
05-1098-R	MP16A	11-7/8" (302mm)	14 Watts	4.0 Watts	10,000 Hrs.
05-1097-R	MP22A	17-3/4" (451mm)	21 Watts	7.3 Watts	10,000 Hrs.
05-1343-R	MP36C	33-7/8" (860mm)	41 Watts	15.0 Watts	10,000 Hrs.
05-1334-R	MP49C	45-7/8" (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 **MIGHTY★PURE**® Water Purifiers.

All **STER-L-RAY**® lamps used in **MIGHTY★PURE**® purifiers 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.



**Model MP36C
12 GPM**

Model	Gallons Per Minute	Gallons Per Hour	Inlet and Outlet ①	Replacement Lamps	Power Consumption ②	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
NSF MP36C	12	720	1"NPT	05-1343-R	48 Watts	36-1/2	5-11/16	9-1/2	30	25
NSF MP49C	20	1,200	1-1/2" NPT	05-1334-R	65 Watts	49-1/2	5-11/16	9-1/2	34	29

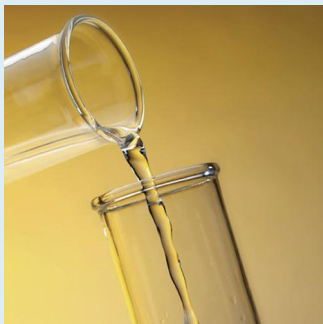
① All inlets and outlets are male pipe threads.

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
- **MIGHTY★PURE**® purifiers are also available in 220 Volt 50/60 Hz and 12 and 24 Volt DC
- **MIGHTY★PURE**® is available for operation on public power supplied throughout the world
- Consult factory with specific power requirements

NSF NSF® Certified Models

APPLICATIONS FOR ULTRAVIOLET WATER PURIFICATION



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
- 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

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

Institution Systems

- Laboratories
- Hospital
- Clinics
- Maternity Areas
- Labor & Delivery Areas
- Pathology Labs
- Kidney Dialysis Labs
- Nursing Homes
- Universities
- Schools
- Veterinary Clinics

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 PURIFICATION

The unique advantage of UV purification 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
- Hospitals and research institutions
- Tertiary treatment of municipal or industrial wastewater

The Versatility of UV Purification

UV purification provides germ-free potable water for home, institutional and municipal use, as in the following applications.

- Water wells: bacterial contamination of wells is unpredictable and may occur from seepage of surface water or sewage.
- The outlet side of water cisterns: most cisterns foster the proliferation of bacteria in untreated water.
- 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.

UV purification provides bacteria-free food process water without the use of germicides, oxidants, algacides or chemical precipitants; particularly useful in the following applications where chlorine adversely affects flavor.

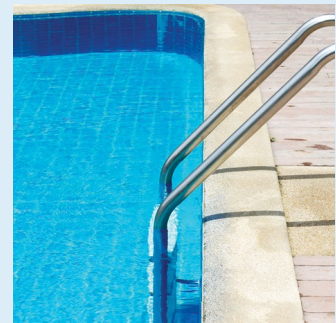
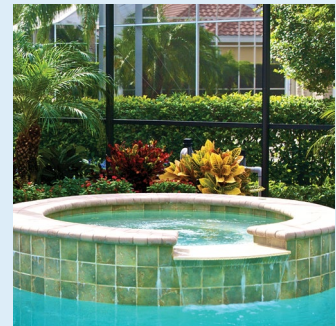
- Brewery, winery, soft drink, and water bottling industries: where biological purity of the water must be absolutely maintained in order to ensure product quality.
- Dairy products: for safeguarding against spoilage of cottage cheese and butter; certain psychrophilic bacteria are resistant to chlorine treatment.
- 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 the following 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.

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

In industrial pollution control, UV purification affords an excellent end-treatment.

- 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

FEATURES [S] - Standard [O] - Optional [X] - Yes	Bio-Logic® Pure Water Pack™ 1.5 GPM	MINIPURE® 1 to 9 GPM	Ultimate® 4 to 9 GPM	MIGHTY★PURE® 3 to 20 GPM	SANITRON® 3 to 416 GPM	MEGATRON® 90 to 450 GPM
Chamber Material (Stainless Steel Type)	316	304	304	316	316	316
STER-L-RAY® Germicidal Ultraviolet Lamp with 10,000 Hours Rated Effective Life	S	S	S	S	S	S
Quick Lamp Change with the EASY-OFF™ End Cap	S	S	–	S	S	S
CRYSTAL CLEAR™ Quartz Sleeve	S	S	S	S	S	S
Lamp Out Indicator Light(s)	S	S	–	–	–	S
Sight Port to View Lamp Operation	–	–	S	S	S	S
Drain Fitting	–	–	–	S	S	S
Dual Action Wiper Mechanism	–	–	–	–	Manual	Manual or Automatic
Suggested Mount Installation	Horizontal	Horizontal	Vertical	Horizontal	Horizontal	Horizontal
Removable or Rotatable Heads	S	–	–	–	S	S
Alternate Inlet/Outlet Fittings	–	–	–	–	O	O
Sediment and Carbon Filter	S	–	–	–	–	–
Promate™ Mounting Kit / Bracket	S	S	S	O	O ①	–
GUARDIAN™ Ultraviolet Monitor	–	–	–	O	O	S
GUARDIAN™ ASSIST Monitor Ext.	–	–	–	O	O	O
SENTRY™ Safety Sensor	O	O	–	O	O	–
Promate™ Audio Alarm	S	S	S	O	O	–
Promate™ Solenoid Valve	–	O	–	O	O	–
SureFLO™ Flow Control Valve	–	O	S	O	O	–
Promate™ Elapsed Time Indicator	O	O	–	O	O	S
Promate™ Time Delay Mechanism	–	O	–	O	O	–
Residential Use	X	X	X	X	X	–
Commercial Use	–	–	–	X	X	X
Industrial Use	–	–	–	–	X	X
NSF Certified Models	–	–	–	X ②	X ③	–

① **SANITRON®** Model S10,000C through S25,000C come equipped with mounting rack.

② **MIGHTY★PURE®** MP36C and MP49C are available with NSF®/ANSI 55 for Disinfection Performance, Class B.

③ **SANITRON®** Models S37C, S50C, and S2400C are certified to NSF®/ANSI 61 & 372. Model S2400C is used in modular form to build larger models.

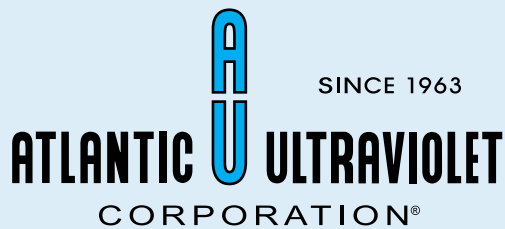
• When used as directed to disinfect clear water, Atlantic Ultraviolet Corporation® water purifiers provide an ultraviolet dosage in excess of 30,000 micro-watt seconds per square centimeter ($\mu\text{WSec}/\text{cm}^2$).

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

The Standard of Excellence In Ultraviolet



Manufacturers / Engineers / Sales / Service – Germicidal Ultraviolet - Equipment & Lamps



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