

ULTRAVIOLET WATER PURIFIERS



Model MIN 6
6 GPM

ADVANTAGES

Effective

Virtually all microorganisms are susceptible to MINIPURE® 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

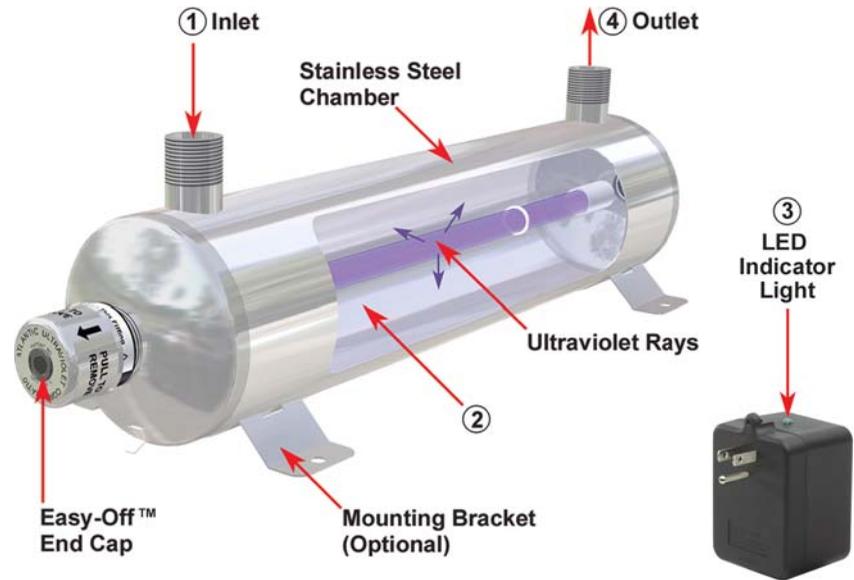
Chemical Free

No chlorine taste or corrosion problems

Versatile

Capacities available from 1 to 9 gallons per minute (g.p.m.)

PRINCIPLE OF OPERATION



**Model MIN-6
6 GPM**

(Line cord omitted for clarity; transformer appearance may vary depending on model.)

- 1 The water enters the purifier and flows into the annular space between the quartz sleeve and the chamber wall.
- 2 Within the chamber, water is exposed to intense germicidal ultraviolet radiation.
- 3 Transformer with LED indicator light provides visual indication of germicidal lamp operation.
- 4 Water leaving the purifier is instantly ready for use.

SPECIAL FEATURES



**Model MIN 9
9 GPM**

Stainless Steel Construction

Chamber and hardware are Type 304 stainless steel for dependable long life. Chamber is electropolished and passivated for an attractive finish and dependable service.

Quick Lamp Change

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

Fused Quartz Sleeve

Insures optimum lamp output at normal potable water temperatures.

Indicator Light

LED on transformer provides visual indication of germicidal lamp operation.



OPTIONAL ACCESSORIES and MONITORING OPTION



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 **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



Audio Alarm

Activated by the SENTRY™ alerts user to any malfunction detected



Elapsed Time Indicator

Real-time, non-resettable display of accumulated operating hours.



Solenoid Valve

prevents flow during detected malfunctions. Available in nylon or brass.



Time Delay Mechanism

Operates with **SENTRY™** and solenoid valve to provide a 2-minute warm-up period for lamp to achieve full germicidal output.



Flow Control Valve

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



Stainless Steel Wall Mounting Kit

Provides professional finish. Pre-drilled and ready for quick and easy mounting of water purifier. Suitable for Wall or Surface Mounting.

Options may be obtained along with unit or added at a later date. For further details visit our website at www.msecompany.net

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 grounded outlet is all that is required.

Ordinary maintenance consists of routine cleaning 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).

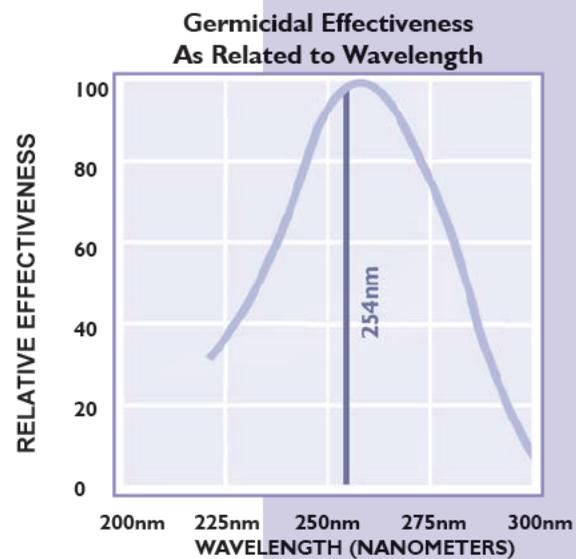
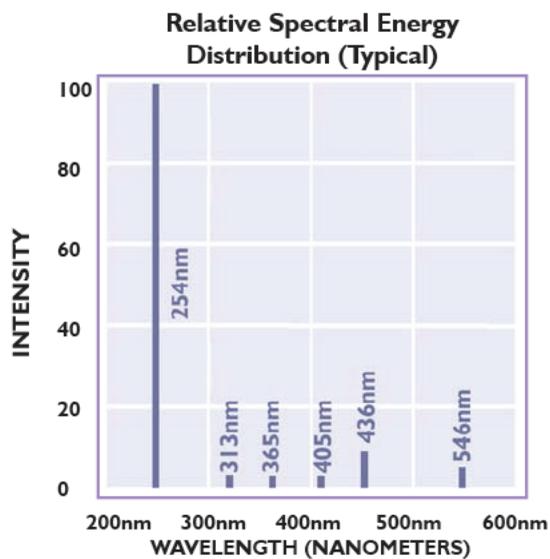
ULTRAVIOLET DOSAGE

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, **MINIPURE®** 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.

STANDARD MODELS

WATER QUALITY RECOMMENDATIONS



**Model MIN 6
6 GPM**

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	Gallons per Minute	Gallons per Hour	Inlet and Outlet ^①	Replacement Lamps	Power Consumption ^②	Unit Dimensions (Inches)			Shipping Data (lbs.)	
						Length	Width	Height	Gross Wt.	Net Wt.
MIN-1	1	60	1/4" NPT	05-1119-R	14 Watts	12 7/8	2 1/2	3	6	5
MIN-1.5	1.5	90	1/4" NPT	05-1366-R	16 Watts	15 7/8	2 1/2	3	7	6
MIN-3	3	180	3/4" NPT	05-1366-R	16 Watts	16 1/4	4 1/4	5 9/16	10	9
MIN-6*	6	360	3/4" NPT	05-1370-R	24 Watts	22 1/4	4 1/4	5 9/16	11	10
MIN-9*	9	540	3/4" NPT	05-0097A-R	34 Watts	29 7/8	4 1/4	5 9/16	14	12

- 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.
- Consult factory with specific power requirements.
- All data shown above reflects 120 volt 50/60 Hz operation. **MINIPURE®** units are available with various power options, consult factory.

① MIN-1 & MIN-1.5 have female pipe threads.

MIN-3, MIN-6 & MIN-9 have male pipe threads.

② Total power consumption including ballast loss (approximate).

*some models include built-in audio alarm

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
- 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 PURIFICATION

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, algaecides 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

