

MEGATRON®

GERMICIDAL ULTRAVIOLET WATER DISINFECTION SYSTEM



**Remote
Electrical
Enclosure**



**Model MR250
WITH MANUAL
WIPER SYSTEM**



**Model MR250
WITH AUTOMATIC
WIPER SYSTEM**



SINCE 1963

**ATLANTIC
ULTRAVIOLET
CORPORATION®**



Since 1963, we've been engineering and manufacturing germicidal ultraviolet equipment to prevent disease caused by contaminants in water, in air, and on surfaces. Our engineers bring each concept to a finished model, implementing stringent quality control procedures. Each product is manufactured with stainless steel and the highest quality materials to ensure the safety of personnel and room occupants. We stock an extensive inventory in our 37,500 square foot facility and ship throughout the world. Our knowledgeable team of UV-C specialists will provide effective and cost-conscious solutions for your home, business, industry, or institution.



**Model MR250 with
Manual Wiper System**

GERMICIDAL ULTRAVIOLET

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

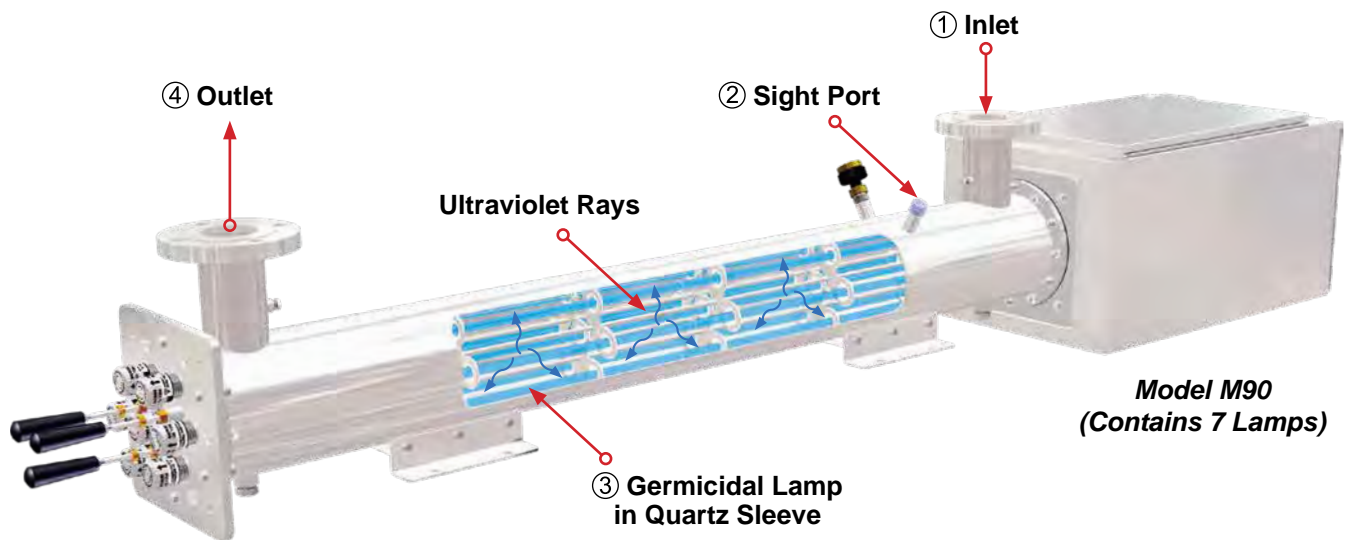
MEGATRON® Ultraviolet Water Disinfection Systems utilize germicidal ultraviolet lamps producing ultraviolet wavelengths at 254 nanometers (nm)—a level that is lethal to bacteria, viruses, and other microorganisms present in water.

Economical and safe, **MEGATRON®** Ultraviolet Water Disinfection Systems offer rapid disinfection without the use of heat or dangerous chemicals – often for the lowest cost available by any means.

An ever-growing range of industries and consumer applications have found ultraviolet to be the ideal solution for their water treatment requirements.

Awareness of the environmental impact of chemical disinfectants and evolving discharge regulations have made ultraviolet purification a technology of choice in water recycling and disinfection of processed wastewater discharges.

PRINCIPLE OF OPERATION



ADVANTAGES

Effective

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

Installation and maintenance are less complicated than other methods.

Automatic

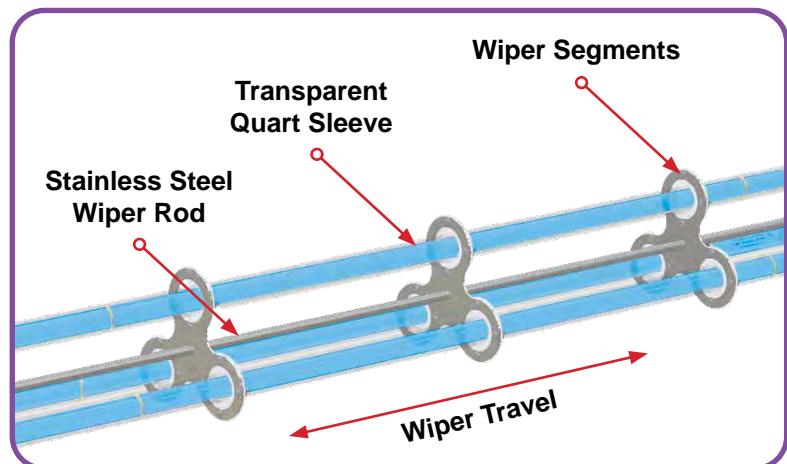
Provides continuous disinfection without special attention or measurement.

Chemical Free

No chlorine taste or corrosion problems.

Versatile

Capacities available from seventy to thousands of gallons per minute (GPM).



- ① The water enters the stainless steel disinfection chamber and flows into the space between the quartz sleeves and chamber wall where suspended microscopic organisms are exposed to intense shortwave germicidal ultraviolet rays.
- ② Translucent sight port and front panel indicator lights (not shown) provide positive indication of germicidal lamp operation.
- ③ Manual or automatic wiper system facilitates routine cleaning of quartz sleeves without disassembly or shutdown of disinfection systems.
- ④ Water leaving the purifier is instantly ready for use.

SPECIAL FEATURES

Remote Electrical Enclosure

A NEMA style enclosure, fabricated from stainless steel type 304, featuring:

- Easy-to-use HMI touchscreen display
- Remote monitoring of UV-C intensity within the chamber, provided by the ultraviolet sensor probe
- Lamp operation indicators to provide positive indication of each germicidal lamp's operation
- Elapsed time indicator (non-resettable display of accumulated operating hours)
- Water temperature monitoring
- Control for manual or automatic wiper system, which cleans the quartz sleeves without service interruption or disassembly of the system
- Alarms for all monitoring systems (UV intensity, water temperature, and lamps)

Modular Design

Each **MEGATRON**® is a completely self-contained disinfection system. The electrical enclosure and disinfection chamber form an independent model simplifying installation; simply secure, plumb and supply suitable single-phase power. Multiple models can be interconnected to comply with nearly any flow requirement.

All internal electronic modules can be removed and replaced, simplifying troubleshooting, and reducing any possible downtime.

Surelite™ Electronic Ballasts

State-of-the-art electronic ballast specifically developed for the operation of ultraviolet lamps. Versatile ballast provides high lamp output; is lightweight, efficient, and operates cool for longer life.

Sight Port

Translucent plug mounts to the disinfection chamber and provides positive indication of germicidal lamp operation.

CRYSTAL CLEAR™ Quartz Sleeve

Fused, high quality quartz, protects and insulates the ultraviolet lamps to ensure high output over a range of operating temperatures.

Remote Outputs

12v DC: Provides an output corresponding to the **MEGATRON**® **STATUS** and power for a low-voltage audio alarm, 50mA max.



4-20mA

Provides an output corresponding to the **ULTRAVIOLET INTENSITY**. Output must be displayed by a PLC, computer, or 4-20mA meter, which can interpret the signal.

Dry Contacts

Provides SPDT output corresponding to **UV NORMAL** or **FAULT** status of the monitor. Contacts are rated at 50v 100mA max.

Ultraviolet Sensor Probe

Mounts to the disinfection chamber, senses the intensity of germicidal ultraviolet energy that penetrates the quartz sleeve and water within the disinfection chamber.

Sampling Ports

Located on the inlet/outlet and allow inline sample gathering, monitoring or other user specific requirement.

Chamber Head Plates

Made from stainless steel type 316, passivated and electropolished, and are removable allowing access into the chamber.

Model MR250 with Manual Wiper System

Disinfection Chamber

Made from stainless steel type 316, all internal and external surfaces are passivated, exterior is also electropolished. Integral drain fittings allow for in-place drainage.

STER-L-RAY® Instant Start Germicidal Ultraviolet Lamps

Specially designed lamps are instant starting and provide the utmost in quality, sustained output and longevity (not shown – inside chamber).

OPTIONAL ACCESSORIES

GUARDIAN™ ASSIST Germicidal Ultraviolet Monitor Extension

Designed to remotely indicate the intensity level displayed on the **GUARDIAN™** Germicidal Ultraviolet Monitor.

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.

GERMICIDAL ULTRAVIOLET DOSAGE

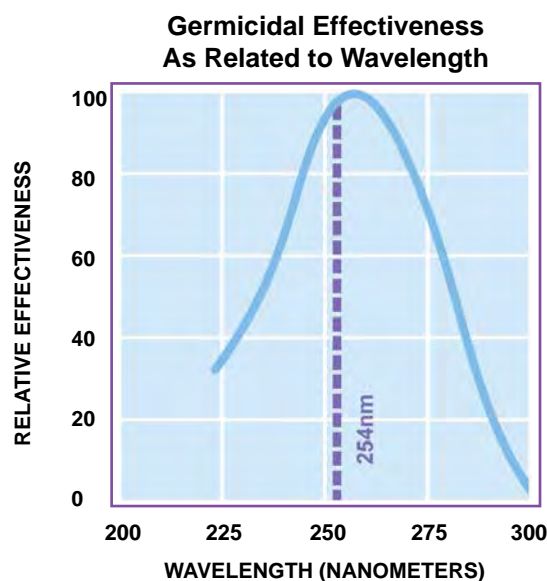
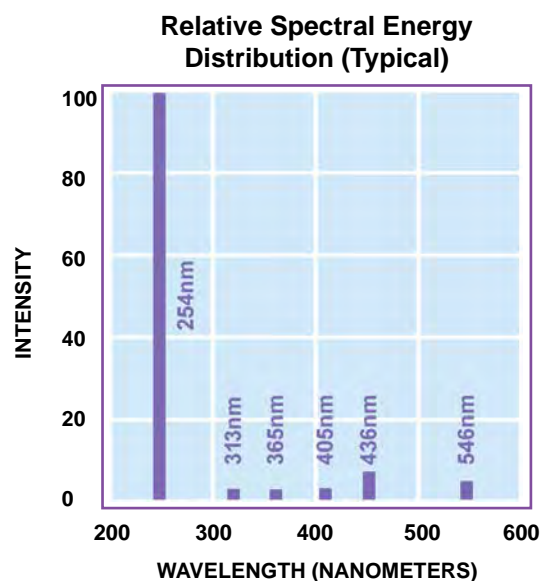
Germicidal lamps provide effective protection against microorganisms. A small cross-section is shown below.

ORGANISM	ALTERNATE NAME	TYPE	DISEASE	DOSE*
<i>Bacillus subtilis</i> spores	<i>B. subtilis</i>	Bacterium		22.0
<i>Bacteriophage</i>	Phage	Virus		6.60
<i>Coxsackie A2</i>		Virus	Intestinal Infection	6.30
<i>Shigella dysenteriae</i>		Bacterium	Bacterial Dysentery	4.20
<i>Escherichia coli</i>	<i>E. coli</i>	Bacterium	Food Poisoning	6.60
<i>Fecal coliform</i>		Bacterium	Intestinal Infection	6.60
<i>Hepatitis A</i>	Infectious Hepatitis virus	Virus	Hepatitis of the Liver	8.0
<i>Influenza</i>	Flu virus	Virus	Influenza	3.40
<i>Legionella pneumophila</i>		Bacterium	Legionnaires' Disease	12.30
<i>Salmonella typhi</i>		Bacterium	Typhoid Fever	7.0
<i>Staphylococcus aureus</i>	Staph	Bacterium	Food Poisoning, Toxic Shock Syndrome, etc.	6.60
<i>Streptococcus pyogenes</i>	Strep	Bacterium	Strep Throat	.80

When used as directed to disinfect clear water, **MEGATRON®** Water Purifiers provide an ultraviolet dosage in excess of 30.0 milijoules per square centimeter (mJ/cm²).

*Nominal Ultraviolet dosage (mJ/cm²) necessary to inactivate better than 99% of specific microorganism.
Visit Ultraviolet.com/microorganisms-inactivated for complete listing.

OPERATING CHARACTERISTICS



GENUINE **STER-L-RAY**® GERMICIDAL ULTRAVIOLET LAMPS

STER-L-RAY® Germicidal Ultraviolet Lamps are shortwave, low pressure tubes that produce ultraviolet wavelengths lethal to microorganisms.

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 viruses.

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 face shield, gloves, and protective clothing.

Hg – LAMP CONTAINS MERCURY, manage in accord with disposal laws, see: LampRecycle.org.



STER-L-RAY®
Germicidal UV Lamp
Part Number 05-1313A-R

GERMICIDAL LAMP DATA

Lamp Number	Purifier Model No.	Nominal Lamp Length	Power Consumption ①	Ultraviolet Output ②	Rated Effective Life
05-1313A-R	M50, M90, M150, M250 MR50, MR90, MR150, MR250	1554mm	75 Watts	33 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 lamp listed above has been specially developed and is the only lamp recommended for use with **MEGATRON**® Disinfection Systems. All **STER-L-RAY**® lamps used in **MEGATRON**® Disinfection Systems are the low pressure type, which afford the maximum efficiency in producing the required germicidal rays. In addition, they have advantage of high efficiency and low power requirements.

WATER QUALITY RECOMMENDATIONS

FOR CLEAR, FRESH WATER APPLICATIONS

Turbidity:

5 Nephelometric turbidity units (NTU)

Total Suspended Solids:

10 milligrams per liter (mg/L) - maximum

pH: 6.5–9.5

Color: None

Hardness:

6 grains per gallon (gpg) or 102 parts per million (ppm)

Iron:

0.3 milligrams per liter (mg/L) - maximum

Manganese:

0.05 milligrams per liter (mg/L) - maximum

Ultraviolet Transmission:

80% through one centimeter - minimum

FOR WASTEWATER APPLICATIONS

Biological Oxygen Demand:

30 milligrams per liter (mg/L) - maximum

Total Suspended Solids:

30 milligrams per liter (mg/L) - maximum

Ultraviolet Transmission at 254 nanometers:

65% through one centimeter - minimum

* Other water quality applications may be treated by ultraviolet.
Contact one of our ultraviolet specialists with your requirements.



**Model M250
(Classic)**



R SERIES

**MR50 MR150
MR90 MR250**

SPECIFICATIONS FOR STANDARD MODELS

Classic Series

Model	Standard Inlet/Outlet	Nominal Capacities (Gallons Per Minute)			Number of Lamps	Power Requirements ^① (Volts AC and Amps)		Dimensions (Inches) ^②		
		Clear Wastewater	Clear Fresh Water	High Purity Water		120v	230v	Length	Width	Height
M50	2" NPT	70	90	100	4	4	2.5	99-3/4"	16-1/8"	15-5/16"
M90	3" Flange	115	150	190	7	5.5	3	99-3/4"	16-1/8"	15-5/16"
M150	4" Flange	200	270	325	12	8.5	4.5	99-3/4"	20"	17-7/8"
M250	6" Flange	335	450	560	19	12	6.5	101-5/8"	20-7/8"	23-1/8"



Chamber

Model	Standard Inlet/Outlet	Nominal Capacities (Gallons Per Minute)			Number of Lamps	Power Requirements ^① (Volts AC and Amps)		Dimensions (Inches) ^②		
		Clear Wastewater	Clear Fresh Water	High Purity Water		120v	230v	Length	Width	Height
MR50	2" NPT	70	90	100	4	6	—	89-1/2"	11"	14-1/8"
MR90	3" Flange	115	150	190	7	8	—	89-5/8"	11"	15-1/4"
MR150	4" Flange	200	270	325	12	12	—	89-5/8"	14"	19-7/8"
MR250	6" Flange	335	450	560	19	17	—	89-5/8"	16"	24"

Remote Electrical Enclosure

Model	Available Power		Dimensions (Inches)		
	120v	230v	Length	Width	Height
MR50 / MR90	✓	—	25-1/8"	12-3/4"	23-5/8"
MR150 / MR250	✓	—	33"	12-3/4"	31-1/2"

① MEGATRON® is available for operation on public power supplied throughout the world.

② Dimensions listed above are for Automatic Wiper models with standard inlet and outlet sizes. For reference only; do not use for installation requirements. Consult factory for more detailed information.

Larger size inlets and outlets are available for all models. Consult factory with specific power requirements.



Model MR250
Parallel Arrangement

1005 GPM Clear Wastewater,
1350 GPM Clear Fresh Water,
1680 GPM High Purity Water

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 & Ponds
- Fountain Water Features
- Ornamental Ponds
- Fish Ponds
- Swimming Pools

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

Specialized

- TOC Reduction
- Ozone Reduction

COMPARISON OF ATLANTIC ULTRAVIOLET UV-C WATER PURIFIERS

FEATURES [S] - Standard [O] - Optional [✓] - 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	S	S	S	S	S	S
EASY-OFF™ End Cap	S	S	–	S	S	S
CRYSTAL CLEAR™ Quartz Sleeve	S	S	S	S	S	S
Lamp Indicator Light(s)	S	S	–	–	–	S
Sight Port to View Lamp Operation	–	S	S	S	S	S
HMI Touchscreen	–	–	–	–	–	R Series Models
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™ Germicidal UV Monitor	–	–	–	O	O	S
GUARDIAN™ ASSIST UV Monitor Extension	–	–	–	O	O	–
SENTRY™ Safety Sensor	O	O	–	O	O	–
Promate™ Audio Alarm	S	S	S	O	O	–
Promate™ Solenoid Valve	–	O ②	–	O	O	–
SureFLO™ Flow Control Valve	O	O	S	O	O	–
Promate™ Elapsed Time Indicator	O	O	–	O	O	S
Promate™ Time Delay Mechanism	–	O	–	–	–	–
Residential Use	✓	✓	✓	✓	✓	–
Commercial Use	–	–	–	✓	✓	✓
Industrial Use	–	–	–	–	✓	✓
 Certified Models	–	–	–	–	✓ ③	–

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

② Available for **MINIPURE®** Models MIN-3, MIN-6, and MIN-9 only.

③ **SANITRON®** Models S37C, S50C, and S2400C are certified to NSF®/ANSI/CAN 61 & NSF®/ANSI 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 30.0 millijoules per square centimeter (mJ/cm²).

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



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