

MEGATRON[®]

WATER DISINFECTION SYSTEM

ATLANTIC  ULTRAVIOLET
CORPORATION[®]



Model M250
(450 GPM Clear Fresh Water)



ultraviolet.com

Information on the performance characteristics of the Megatron[®] Model M250 can be found at www.epa.gov/etv, or call Atlantic Ultraviolet Corp. at 631-273-0500 for a copy of the verification report. Use of the ETV Name or Logo does not imply approval or certification of this product nor does it make any explicit or implied warranties or guarantees as to product performance.

ADVANTAGES

Effective

Virtually all micro-organisms 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 dangerous chemicals.

Fast

Water is ready for use as soon as it leaves the Disinfection System – no further contact time required.

Easy

Simple installation and maintenance.

Automatic

Provides continuous or intermittent 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 (g.p.m.).

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 that produce short-wave radiation 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.

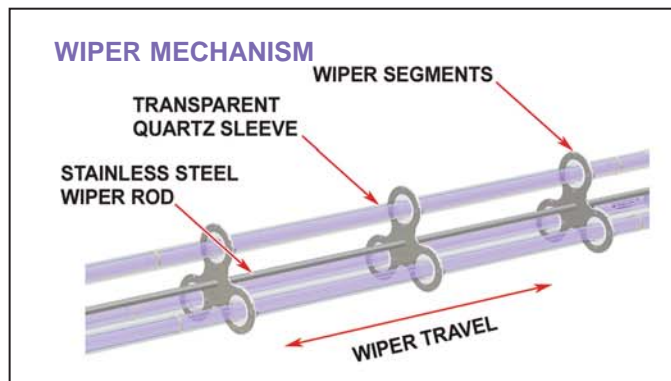
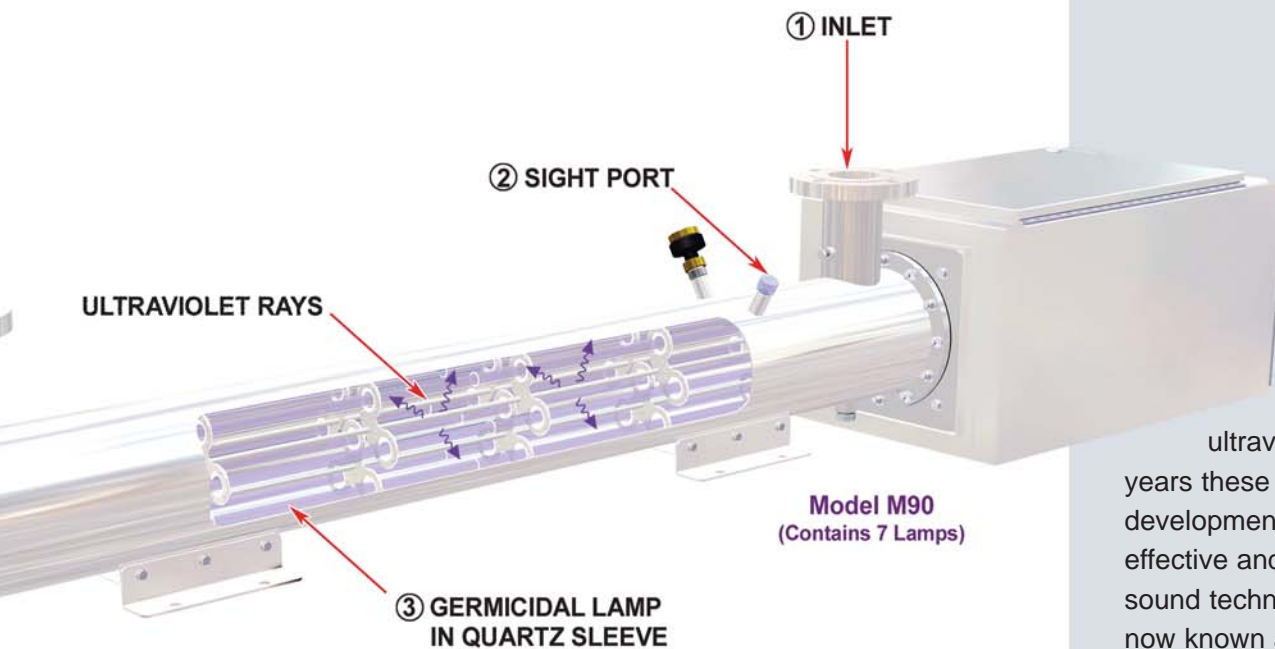
Awareness of the environmental impact of chemical disinfectants and evolving discharge regulations have made ultraviolet purification a technology of choice in water recycling and disinfection of processed wastewater discharges.



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PRINCIPLE OF OPERATION

ABOUT US



- 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 radiation.
- ② Translucent sight port and front panel indicator lights 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 disinfection systems is immediately ready for use.

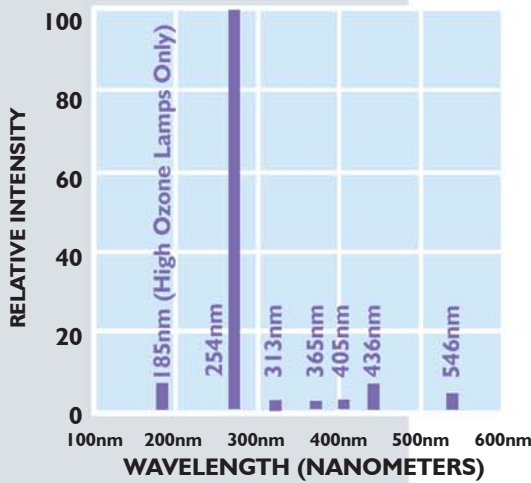
Since 1963, Atlantic Ultraviolet Corporation has pioneered the discovery and development of beneficial uses of ultraviolet energy. Over the years these efforts have led to the development of valuable, cost effective and environmentally sound techniques and products now known and respected throughout the world.

Our 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.

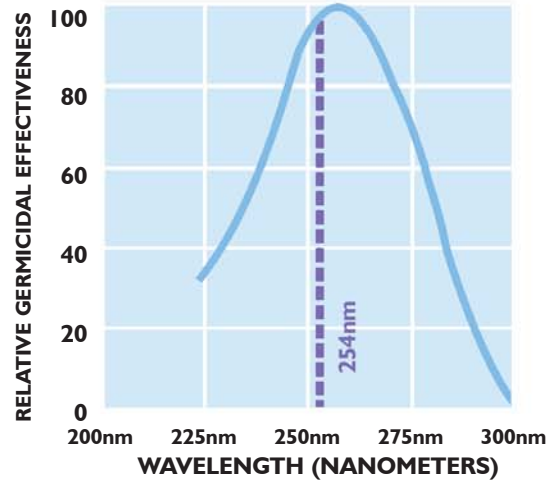


GENUINE **STER-L-RAY**™ GERMICIDAL LAMPS

Relative Spectral Energy Distribution (Typical)



Germicidal Effectiveness As Related to Wavelength



Lamp Number
05-1313A-R

STER-L-RAY™ germicidal lamps are shortwave, low pressure mercury vapor discharge tubes that produce ultraviolet wavelengths lethal to microorganisms. 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.

STER-L-RAY™ germicidal lamps are manufactured by the Atlantic Ultraviolet Corporation.

STER-L-RAY™ and the **STER-L-RAY**™ logo are trademarks of the 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.

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, MEGATRON® Ultraviolet Water Disinfection Systems 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.

SPECIFICATIONS FOR STANDARD MODELS



• Environmental Technology Verification Program[®] Verified.

MODEL	STANDARD INLET / OUTLET *	NOMINAL CAPACITIES/Gallons Per Minute			NUMBER OF LAMPS	POWER REQUIREMENTS**		TOTAL WATTS	UNIT DIMENSIONS/Inches		
		CLEAR WASTEWATER	CLEAR FRESH WATER	HIGH PURITY WATER		VOLTS AC AND AMPS 120V	230V		LENGTH	WIDTH	HEIGHT
M50	2" NPT	70	90	100	4	4	2.1	480	100	16	14
M90	3" 150# Socket Weld Flange	115	150	190	7	6.5	3.4	780	100	16	16
M150	4" 150# Socket Weld Flange	200	270	325	12	9	4.7	1080	100	18	18
M250	6" 150# Socket Weld Flange	335	450	560	19	14	7.3	1680	102	21	26

*Larger size inlets and outlets are available for these units. Consult our factory for further information.

**MEGATRON[®] is available for operation on public power supplied throughout the world. Contact our factory with specific power requirements.

FEATURES

MODULAR DESIGN

Each MEGATRON® is a completely self-contained disinfection system. The electrical enclosure and disinfection chamber form an independent unit simplifying installation; simply secure, plumb and supply suitable single-phase power. Multiple units 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 down time.

ELECTRONIC BALLASTS

State-of-the-art electronic ballasts developed specifically for the operation of ultraviolet lamps. These ballasts are smaller, lighter, and more efficient; operate cooler, provide higher ultraviolet lamp output with a reliable, long life.

MANUAL WIPER SYSTEM

Permits mechanical cleaning of the quartz sleeves without service interruption, or disassembly of the system.

AUTOMATIC WIPER SYSTEM (OPTIONAL)

Once programmed, permits unattended mechanical cleaning of the quartz sleeves.

SIGHT PORT

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

QUARTZ SLEEVES

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

REMOTE OUTPUTS

12v DC: Provides 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 UV LOW status of the monitor. Contacts are rated at 50v 100mA max.



LAMP OPERATION INDICATORS

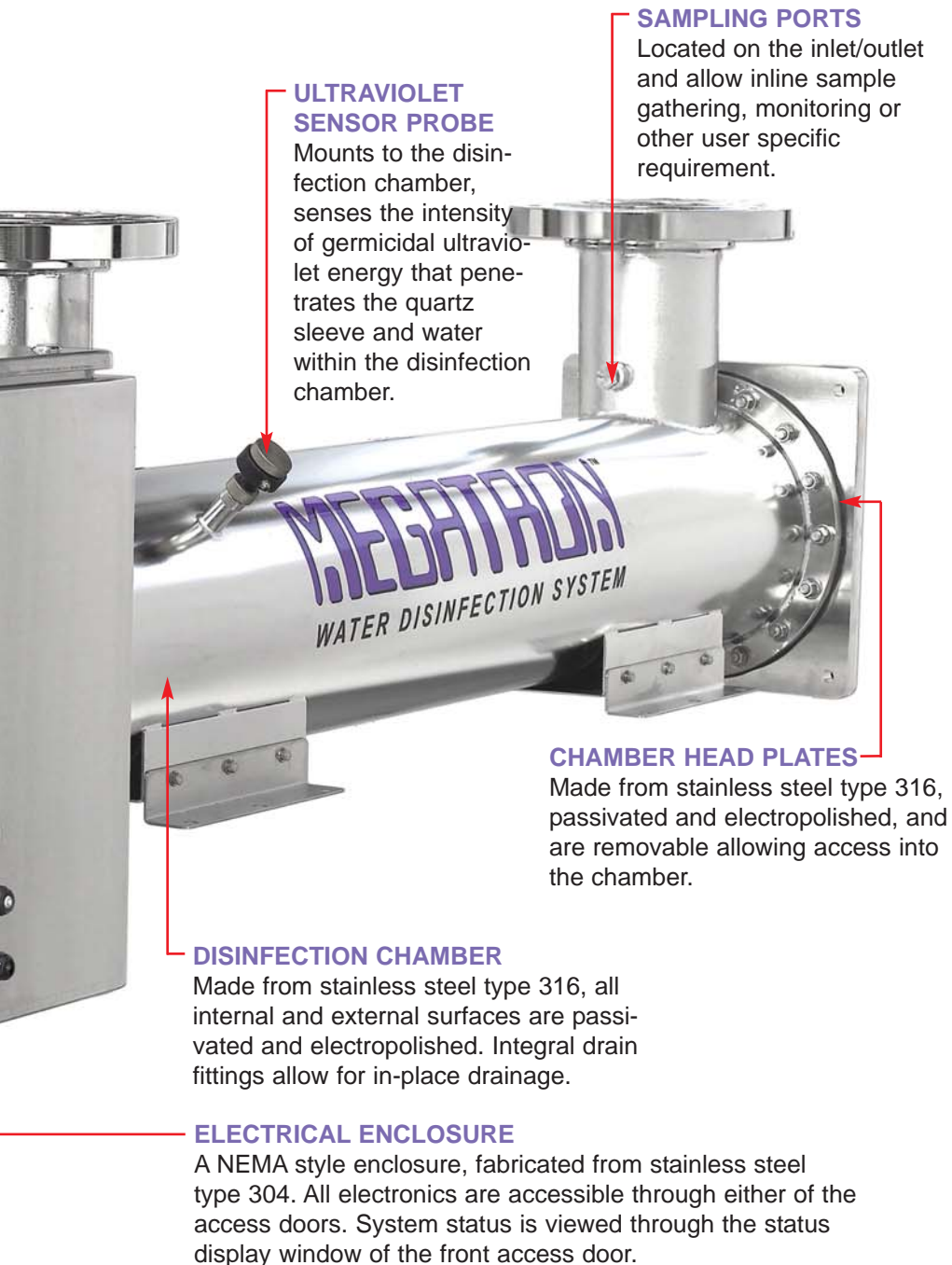
Provides positive indication of each germicidal lamp's operation.

DIGITAL ULTRAVIOLET MONITOR

Displays the intensity of germicidal ultraviolet energy within the disinfection chamber. Signals are provided by the Ultraviolet Sensor Probe.

ELAPSED TIME INDICATOR

Non-resettable display of accumulated operating hours.



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.

DISINFECTION CHAMBER

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

ELECTRICAL ENCLOSURE

A NEMA style enclosure, fabricated from stainless steel type 304. All electronics are accessible through either of the access doors. System status is viewed through the status display window of the front access door.

FOR CLEAR, FRESH WATER APPLICATIONS

Turbidity:

5 Nephelometric turbidity units (N.T.U.)

Total Suspended Solids:

10 milligrams per liter (mg/L) - maximum

pH:

6.5 - 9.5

Color:

None

Hardness:

6 grains per gallon (g.p.g.) or

102 parts per million (p.p.m.)

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.



The MEGATRON® Model M250 has been verified by The Environmental Technology Verification Program®. To learn more about the Environmental Technology Verification Program® visit: www.epa.gov/etv



**Model M250 Parallel Arrangement
(1350 GPM Clear Fresh Water)**

ATLANTIC  ULTRAVIOLET
CORPORATION®

375 Marcus Boulevard • Hauppauge, NY 11788
631.273.0500 • Fax: 631.273.0771
e-mail: info@ultraviolet.com

ultraviolet.com

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