

# Tank Master™

GERMICIDAL ULTRAVIOLET LIQUID STORAGE SANITIZER



Model TM36-2



Model TM36



**ATLANTIC ULTRAVIOLET**  
CORPORATION® SINCE 1963

## 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 well 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

Germicidal Ultraviolet is a unique and rapid method of disinfection. It utilizes germicidal ultraviolet lamps producing ultraviolet wavelengths at 254 nanometers (nm)—a level that is lethal to bacteria, virus and other microorganisms.

An ever growing range of industries and consumer applications have found ultraviolet to be the ideal solution for their air and liquid treatment needs.

Atlantic Ultraviolet equipment and systems are manufactured in the USA.



**Model TMHO36**  
(see Page 6 for optional bulkhead fitting)

## ADVANTAGES

### **Effective**

Virtually all microorganisms are susceptible to **Tank Master™** disinfection.

### **Economical**

Inexpensive to operate.

### **Safe**

No danger of overdosing, no addition of chemicals.

### **Fast**

Disinfects air space and surfaces in seconds.

### **Automatic**

Provides continuous disinfection without special attention or measurement.

### **Versatile**

An assortment of models available to treat a variety of storage tanks.

### **Low Maintenance**

Annual lamp replacement and cleaning of the quartz sleeve(s) is required.

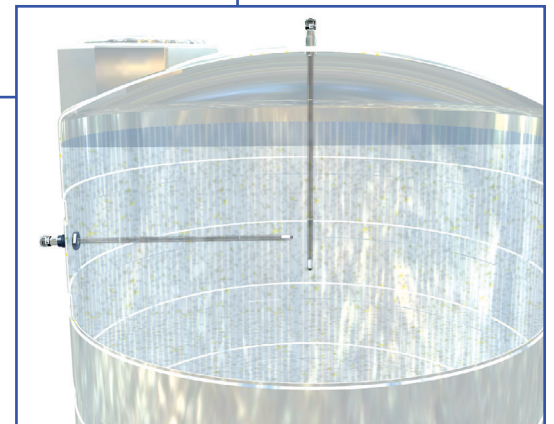
## PRINCIPLE OF OPERATION

Liquid storage tanks present unique challenges regarding disinfection and maintaining a sterile environment for their contents. The air space above the liquid is an ideal environment to promote the growth of bacteria, mold, and other microorganisms, leading to the contamination of the stored liquid. The **Tank Master™** has been carefully conceived to provide adequate germicidal ultraviolet exposure for air disinfection.

The **Tank Master™** Germicidal Ultraviolet Liquid Storage Sanitizer line of versatile, germicidal ultraviolet fixtures is specifically designed to meet these challenges. **Tank Master™** disinfects the air space and surfaces, above the liquid, and the liquid contents. Disinfection is accomplished by irradiating contents with germicidal ultraviolet rays, without the use of heat or chemicals.



**Figure 1 – Tank Master™**  
Germicidal Ultraviolet  
Liquid Storage Sanitizer  
and Bulkhead Fitting  
(optional)



**Figure 2 – Tank Master™**  
Germicidal Ultraviolet  
Liquid Storage Sanitizer  
mounting options.

Horizontal application not recommended for models larger than TM36.

The **Tank Master™** Germicidal Ultraviolet Liquid Storage Sanitizer consists of a germicidal ultraviolet lamp enclosed in a quartz sleeve, sealed to a unique static gland fitting and powered by the remote, plug-through, ballast (**Figure 1**).

The **Tank Master™** design allows lamp/quartz sleeve assembly to be mounted horizontally into the storage tank (submerged in the liquid contents) or suspended vertically from the top of the storage tank partially immersed in the liquid contents (**Figure 2**).

# SPECIAL FEATURES

## Tank Master™ Germicidal Ultraviolet Liquid Storage Sanitizer

**Tank Master™** Germicidal Ultraviolet Liquid Storage Sanitizer provides in-place ultraviolet disinfection. The **Tank Master™** Germicidal Ultraviolet Liquid Storage Sanitizer will help maintain the quality of the air space and liquid contents of the storage tank. Complete disinfection of the liquid contents cannot be assured. Many factors will affect the efficiency of the **Tank Master™** including: proper sizing (lamp size/quantity vs. tank size/capacity), ultraviolet transmission/absorbance of the liquid, proximity to the ultraviolet lamp, etc.

For complete disinfection of the liquid, Atlantic Ultraviolet Corporation® can offer a comprehensive range of in-line disinfection equipment suitable for your application (For example, **MIGHTY PURE®/SANITRON®** for water applications or **INFINITY™** for liquid sugar/syrup applications). Please contact us regarding your application.

### STER-L-RAY® Germicidal Ultraviolet Lamps

**STER-L-RAY®** Germicidal Ultraviolet Lamps are high quality ultraviolet lamps rated for 10,000 hours of continuous use. The **Tank Master™** also has models available with high output germicidal lamps, which are similar in size and shape to standard germicidal UV lamps but capable of operating at higher UV output. These lamps have a rated effective life of 13,000 hours. Lamp life is governed by the life of the filaments and is affected by the frequency of starting.

**STER-L-RAY®** lamps are well suited for a variety of air and water purification applications which, require high ultraviolet intensity.

### Static Gland

Allows threading directly into a 1" female NPT on tank.

### EASY-OFF™ End Cap

**EASY-OFF™ End Cap** is a patented feature that enables effortless lamp replacement. No tools are required.

### Surelite™ Electronic Ballast

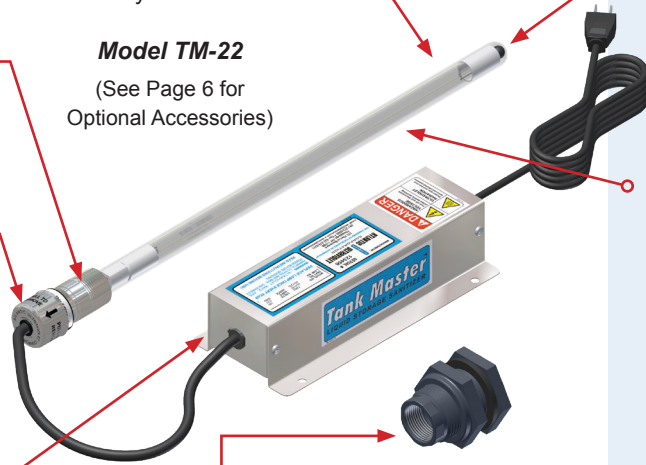
State-of-the-art electronic ballast is specifically designed to operate germicidal ultraviolet lamps.

#### The **Surelite™ Electronic Ballast**

offers these advantages over conventional ballasts:

- delivers high UV lamp output
- lightweight
- operates cool for longer life
- versatile—each operates a wide range of lamps
- saves energy through high efficiency
- provides silent operation

**Model TM-22**  
(See Page 6 for  
Optional Accessories)



### Steadfast™ Lampholders

Includes a socket that holds a four pin lamp securely, and facilitates convenient, quick and easy lamp changes.

### Rubber Ball

Ensures spacing between lamp and quartz sleeve.

### CRYSTAL CLEAR™ Quartz Sleeve

Ensures optimum lamp output at normal temperatures. Tolerant of humid environments.

### 1" NPT Bulkhead Fitting (optional)

The **Tank Master™** static gland fitting requires an available 1" female NPT fitting to mount to the storage tank. If an appropriate fitting is not available, this optional 1" NPT bulkhead fitting can be utilized. The optional bulkhead fitting has certain minimum dimensional requirements and may require modifications to the tank. Please contact us regarding your application.

### Surface Mount Bracket Kit (optional)

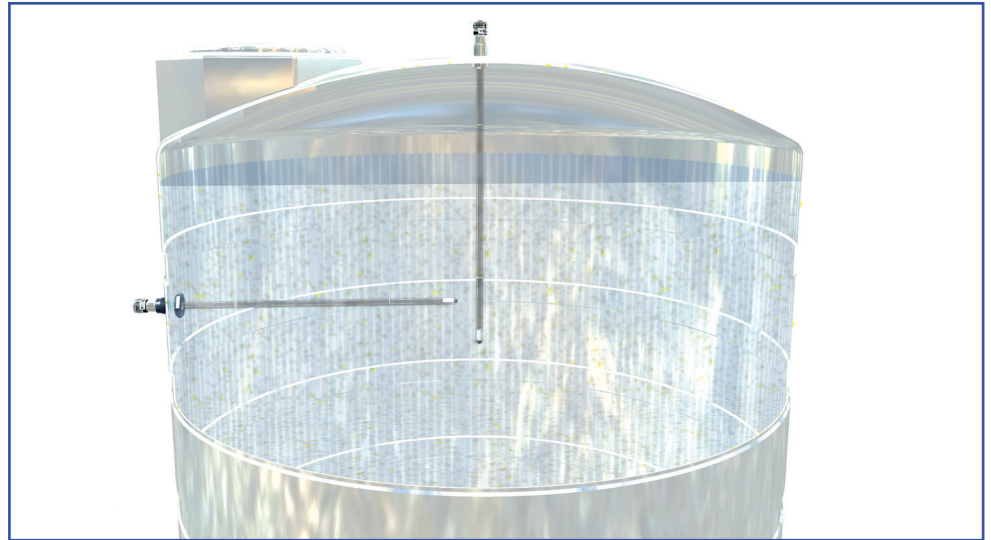
Unique bracket designed specifically for **Tank Master™** line enables installation in both air and tank applications. Contact us and discuss with our UV Application Specialists.



# INSTALLATION

**Figure 3 – Tank Master™**  
Germicidal Ultraviolet Liquid  
Storage Sanitizers mounted in tank.

Horizontal application not  
recommended for models  
larger than TM36.



## SPECIFICATIONS—Tank Master™ GERMICIDAL ULTRAVIOLET LIQUID STORAGE SANITIZER

| Model  | Lamp No.   | No. of Lamps | Insertion Depth | Ultraviolet Output ① | Power Consumption ② | Rated Lamp Life (Hours) |
|--------|------------|--------------|-----------------|----------------------|---------------------|-------------------------|
| TM13   | 05-1119-R  | 1            | 9-7/8"          | 2.7 Watts            | 12.0 Watts          | 10,000                  |
| TM16   | 05-1366-R  | 1            | 12-7/8"         | 4.0 Watts            | 16.0 Watts          | 10,000                  |
| TM22   | 05-1370-R  | 1            | 18-3/4"         | 7.3 Watts            | 25.2 Watts          | 10,000                  |
| TM24   | 05-0117-R  | 1            | 22-3/4"         | 8.5 Watts            | 30.7 Watts          | 10,000                  |
| TM36   | 05-1382-R  | 1            | 34-3/4"         | 15.0 Watts           | 49.2 Watts          | 10,000                  |
| TM48   | 05-0197-R  | 1            | 46-11/16"       | 21.0 Watts           | 66.0 Watts          | 10,000                  |
| TM64   | 05-1017A-R | 1            | 62-11/16"       | 33.0 Watts           | 94.0 Watts          | 10,000                  |
| TM13-2 | 05-1119-R  | 2            | 9-7/8"          | 5.4 Watts            | 24.0 Watts          | 10,000                  |
| TM16-2 | 05-1366-R  | 2            | 12-7/8"         | 8.0 Watts            | 32.0 Watts          | 10,000                  |
| TM36-2 | 05-1382-R  | 2            | 34-3/4"         | 30.0 Watts           | 98.4 Watts          | 10,000                  |
| TM48-2 | 05-0197-R  | 2            | 46-11/16"       | 42.0 Watts           | 132.0 Watts         | 10,000                  |
| TM64-2 | 05-1017A-R | 2            | 62-11/16"       | 66.0 Watts           | 188.0 Watts         | 10,000                  |
| TMHO22 | 05-0331-R  | 1            | 18-3/4"         | 13 Watts             | 48 Watts            | 13,000                  |
| TMHO24 | 05-1157    | 1            | 22-3/4"         | 18 Watts             | 51 Watts            | 13,000                  |
| TMHO36 | 05-0264-R  | 1            | 34-3/4"         | 28 Watts             | 87 Watts            | 13,000                  |
| TMHO48 | 05-0977    | 1            | 46-11/16"       | 39.0 Watts           | 119.0 Watts         | 13,000                  |
| TMHO64 | 05-0337-R  | 1            | 62-11/16"       | 54 Watts             | 155 Watts           | 13,000                  |

① Ultraviolet Output at 254 nanometers at 100 hours and 80 °F (approximate).

② Total power consumption including ballast loss.

- Intended for indoor use. As with any electrical assembly, protect from moisture.
- Not recommended for applications over 5 PSI.

- Horizontal mount not recommended for models larger than TM36.
- 120v 50/60Hz, 220v 50/60Hz, 12v DC, or 24v DC models are available – specify when ordering.
- Additional models available. Contact factory.



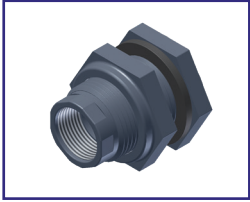
## OPTIONAL ACCESSORIES



### SENTINEL® Germicidal UV Lamp Operation Indicator

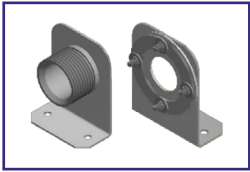
The **SENTINEL®** Remote Lamp Indicator monitors lamp operation of 1-Lamp or 2-Lamp ultraviolet fixtures and is available with a 25, 50 or 100 foot cable.

(Available for ALL **Tank Master™** models at the time of purchase, **SENTINEL®** output connector needs to be installed for easy plug-in and operation.)



### 1" NPT Bulkhead Fitting

The **Tank Master™** static gland fitting requires an available 1" female NPT fitting to mount to the storage tank. If an appropriate fitting is not available, an optional 1" NPT bulkhead fitting is offered. The optional bulkhead fitting has certain minimum dimensional requirements and may require modifications to the tank. Please contact us regarding your application.



### Surface Mount Bracket Kit

Unique bracket designed specifically for **Tank Master™** line enables installation in both air and tank applications. Contact us and discuss with our UV Application Specialists.



### Promate™ Danger Signs

To indicate the storage tank **MUST NOT** be opened while unit is in operation. One sign is included with each model, but additional signs may be purchased. **NOTE:** Danger Signs have English on one side and Spanish on the other.



### 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 UV rays.

## APPLICATIONS

**Tank Master™** was designed and built to assist a customer with a problem they had in their spring water holding tank on a small farm in Vermont. The holding tank continuously grew slime on its walls in the head space above the water which became heavy in the summer months. Although the customer had a full treatment system to clean the water before it was used, a solution to end the slime problem in the holding tank was required for pure peace of mind. Atlantic Ultraviolet's Engineers looked at the options available and decided the best method would be to develop a special sanitizer for this application, and the **Tank Master™** was conceived.

**Tank Master™** is now used for a wide range of water, process water and liquid holding tank applications, as well as applications with moist air growth problems, where circulation through an Ultraviolet Water Purifier was just not possible.

## GENUINE STER-L-RAY® GERMICIDAL 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 ultraviolet lamps is at 254 nanometers, the region of germicidal effectiveness most destructive to bacteria, mold and virus. The **STER-L-RAY®** Germicidal Lamps used in the **Tank Master™** Ultraviolet Liquid Sanitizer are available in two types: standard and high output.

**STER-L-RAY®** and the **STER-L-RAY®** logo are trademarks of Atlantic Ultraviolet Corporation.

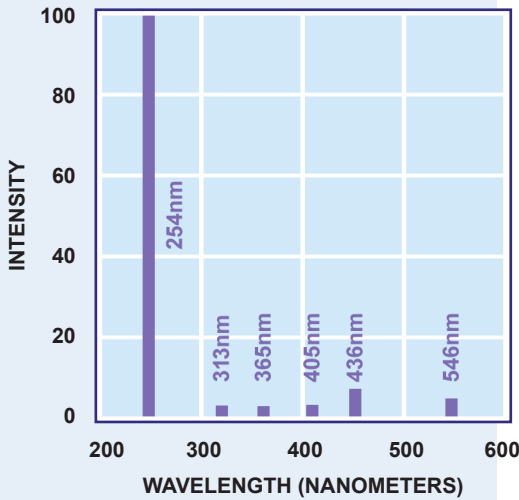
**CAUTION:** Exposure to direct or reflected germicidal ultraviolet rays will cause painful eye irritation and reddening of the skin. Personnel subject to such exposure must wear suitable face shield, gloves and protective clothing.

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

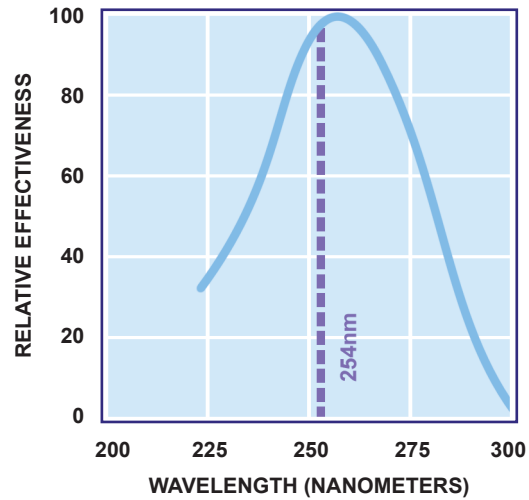


# OPERATING CHARACTERISTICS

Relative Spectral Energy Distribution (Typical)



Germicidal Effectiveness As Related to Wavelength



## GERMICIDAL ULTRAVIOLET DOSAGE

Germicidal ultraviolet 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 |   | 22.00 |
| <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>Salmonella typhi</i>            |                        | Bacterium | Typhoid Fever   | 7.00  |
| <i>Staphylococcus aureus</i>       | Staph                  | Bacterium | Food poisoning, Toxic Shock Syndrome, etc.                | 6.60  |
| <i>Streptococcus</i> spores        | Strep                  | Bacterium | Strep throat  | 3.80  |
| <i>Corynebacterium diphtheriae</i> | <i>C. diphtheriae</i>  | Bacterium | Diphtheria  | 6.50  |
| <i>Legionella pneumophila</i>      | <i>L. pneumophila</i>  | Bacterium | Legionnaires' Disease                                     | 12.30 |
| <i>Mycobacterium tuberculosis</i>  | <i>M. tuberculosis</i> | Bacterium | Tuberculosis (TB)   | 10.00 |
| <i>Pseudomonas aeruginosa</i>      | <i>P. aeruginosa</i>   | Bacterium |   | 3.90  |
| <i>Serratia marcescens</i>         | <i>S. marcescens</i>   | Bacterium |   | 6.160 |
| <i>Staphylococcus epidermidis</i>  | <i>S. epidermidis</i>  | Bacterium |   | 5.80  |
| Adenovirus Type 3                  |                        | Virus     |   | 4.50  |
| Hepatitis A                        | Infectious Hepatitis   | Virus     | Hepatitis of the liver                                    | 8.00  |
| Influenza                          | Flu virus              | Virus     | Influenza   | 6.60  |
| Bacteriophage                      | Phage                  | Virus     |   | 6.60  |
| Coxsackie A2                       |                        | Virus     | Hand, Foot, and Mouth Disease, Conjunctivitis, Meningitis | 6.30  |

\* Nominal Ultraviolet dosage (mJ/cm<sup>2</sup>) necessary to inactivate better than 99% of specific microorganism. Consult factory for more complete listing.

*The Standard of Excellence In Ultraviolet*



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



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