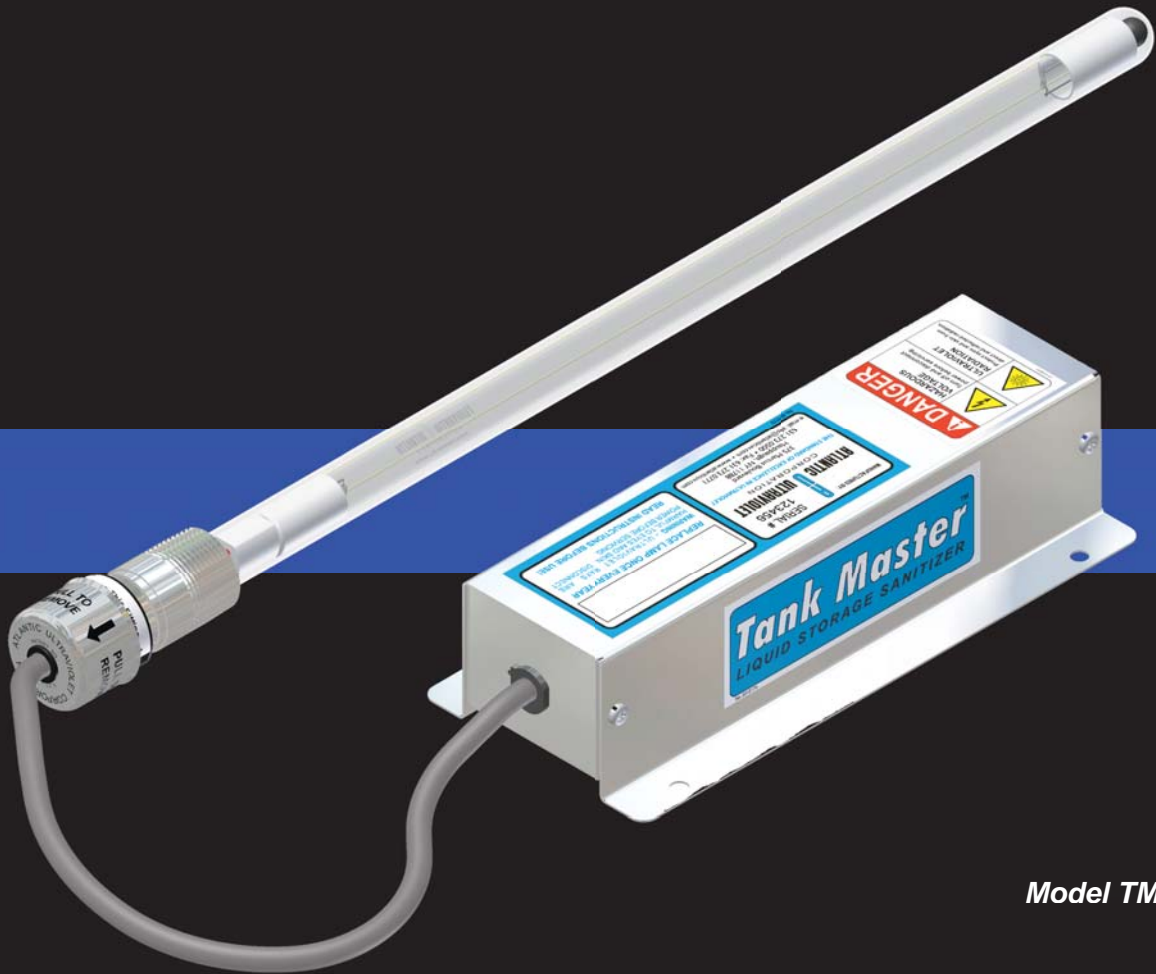


# Tank Master™

## ULTRAVIOLET LIQUID STORAGE SANITIZER



Model TM22

**ATLANTIC** **U** **ULTRAVIOLET**  
CORPORATION

SINCE 1963

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

[ultraviolet.com](http://ultraviolet.com) • [buyultraviolet.com](http://buyultraviolet.com)

## 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.



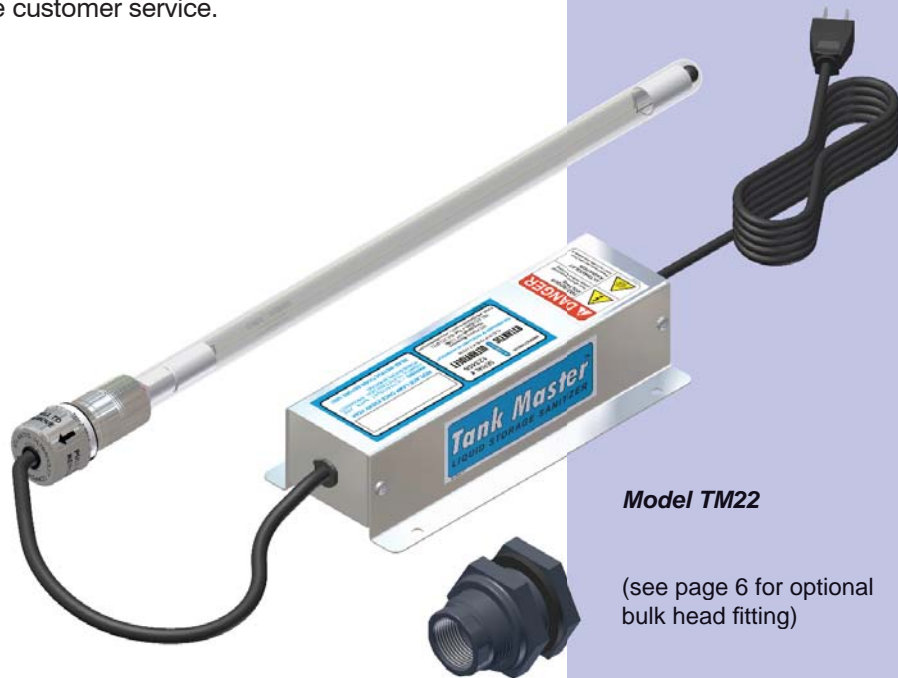
Atlantic Ultraviolet's application specialists assist customers in the selection of germicidal lamps and equipment. Their specialized knowledge is a valuable resource in formulating effective and cost-conscious ultraviolet solutions. Extensive inventories and a dedicated staff enable Atlantic Ultraviolet to fulfill its commitment to provide fast deliveries and responsive customer service.

## GERMICIDAL ULTRAVIOLET

Ultraviolet is a unique and rapid method of disinfection utilizing germicidal ultraviolet lamps that produce short-wave radiation at 254 nanometers (nm) 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 TM22**

(see page 6 for optional bulk head 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 & surfaces in seconds

### **Easy**

Operation is simple and straightforward

### **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™** 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™** Ultraviolet Liquid Storage Sanitizer and Bulkhead Fitting (optional)



**Figure 2 - Tank Master™** Ultraviolet Liquid Storage Sanitizers mounted in liquid sugar tank with two sanitizers

The **Tank Master™** 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 (**Figure 2**) 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).

## SPECIAL FEATURES

### Tank Master™ Ultraviolet Liquid Storage Sanitizer

**Tank Master™** Ultraviolet Liquid Storage Sanitizer provides in-place ultraviolet disinfection. The **Tank Master™** 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® Instant Start Germicidal Ultraviolet Lamps**

**STER-L-RAY® Instant Start Germicidal Ultraviolet** lamps are high quality ultraviolet lamps rated for 10,000 hours of continuous use. 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.

#### **Easy-Off™ Retainer Cap**

**Easy-Off™ Retainer Cap** is a patented feature that enables effortless lamp replacement. No tools are required.

#### **1" MNPT**

Allows threading directly into a female NPT on tank.

#### **Steadfast™ Lampholders**

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

#### **Rubber Ball**

Insures spacing between lamp and fused quartz sleeve.

#### **Fused Quartz Sleeve**

Insures optimum lamp output at normal temperatures.

#### **Surelite™ Electronic Ballast**

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

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

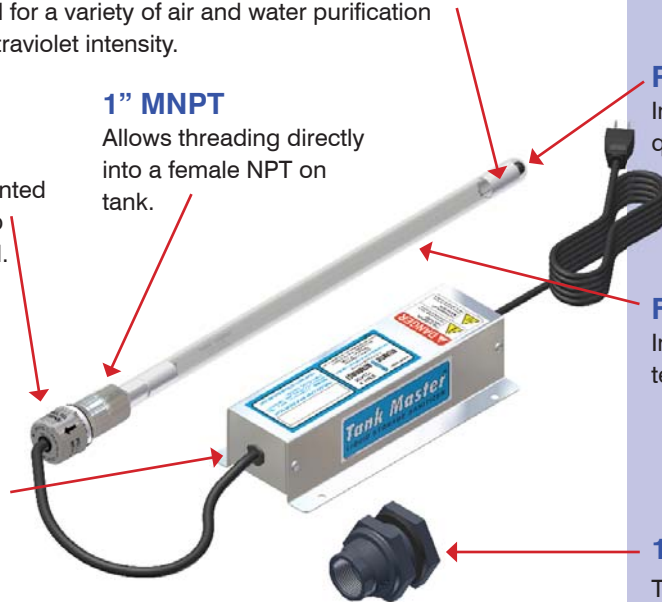
- offers these advantages over conventional ballasts:
- delivers higher uv lamp output
  - instant starting
  - eliminates "stroboscopic effect"
  - small and lightweight
  - operates cooler for longer life
  - versatile... each operates a wide range of lamps
  - saves energy through higher efficiency
  - provides silent operation

**Model TM-22**

(see page 6 for Optional Accessories)

#### **1" NPT bulkhead fitting (optional)**

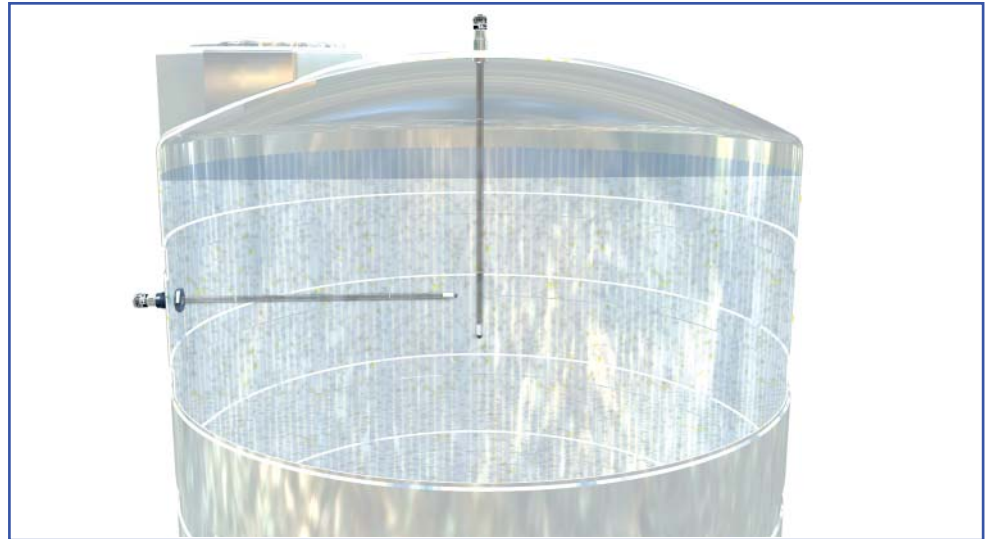
The **Tank Master™** static gland fitting requires an available 1" female NPT fitting to mount to the storage tank. If an appropriate fitting is not available, this optional 1" NPT bulkhead fitting can be utilized. The optional bulkhead fitting has certain minimum dimensional requirements and may require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



# INSTALLATION

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

Horizontal application not recommended for units larger than TM36.



## SPECIFICATIONS - Tank Master™ Ultraviolet Liquid Storage Sanitizer

Model	Lamp No.	No. of Lamps	Insertion Depth	Ultraviolet Output ①	Power Consumption ②
TM13	05-1119-R	1	9-7/8"	2.7 Watts	12.0 Watts
TM16	05-1366-R	1	12-7/8"	4.0 Watts	16.0 Watts
TM22	05-1370-R	1	18-3/4"	7.3 Watts	25.2 Watts
TM24	05-0117-R	1	22-3/4"	8.5 Watts	30.7 Watts
TM36	05-1382-R	1	34-3/4"	15.0 Watts	49.2 Watts
TM36-2	05-1382-R	2	34-3/4"	30.0 Watts	98.4 Watts
TM48	05-0197-R	1	46-11/16"	21.0 Watts	66.0 Watts
TM48-2	05-0197-R	2	46-11/16"	42.0 Watts	132.0 Watts
TM64	05-1017A-R	1	62-11/16"	33.0 Watts	94.0 Watts
TM64-2	05-1017A-R	2	62-11/16"	66.0 Watts	188.0 Watts

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

②Total 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, 12Volt DC or 24Volt DC units are available - specify when ordering.

## OPTIONAL ACCESSORIES



### Sentinel™ Remote Lamp Indicator

The **Sentinel™** Remote Lamp Indicator monitors lamp operation of one or two lamp ultraviolet fixtures and is available with a 25, 50 or 100 foot cable. (Available for ALL **Tank Master™** units 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.

## 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 in his home before it was used, he wanted to end the slime problem in his holding tank 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 unit 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 LAMP DATA

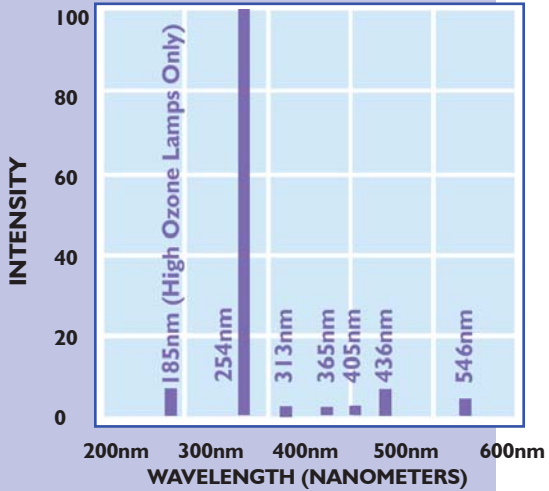
Model	Lamp No.	Lamp Length	Insertion Depth (lampholder, lamp & quartz)	Power Consumption <sup>①</sup>	Ultraviolet Output <sup>②</sup>	Rated Lamp Life
TM13	05-1119-R	8.35" (212 mm)	9-7/8"	12.0 Watts	2.7 Watts	10,000
TM16	05-1366-R	11.3" (287 mm)	12-7/8"	16.0 Watts	4.0 Watts	10,000
TM22	05-1370-R	17.2" (436 mm)	18-3/4"	25.2 Watts	7.3 Watts	10,000
TM24	05-0117-R	21.2" (538 mm)	22-3/4"	30.7 Watts	8.5 Watts	10,000
TM36/TM36-2	05-1382-R	33.1" (842 mm)	34-3/4"	49.2 / 98.4 Watts	15.0 / 30.0 Watts	10,000
TM48/TM48-2	05-0197-R	45.2" (1148 mm)	46-11/16"	66.0 / 132.0 Watts	21.0 / 42.0 Watts	10,000
TM64/TM64-2	05-1017-R	61.2" (1554 mm)	62-11/16"	94.0 / 188.0 Watts	33.0 / 66.0 Watts	10,000

① Total Power Consumption including ballast loss.

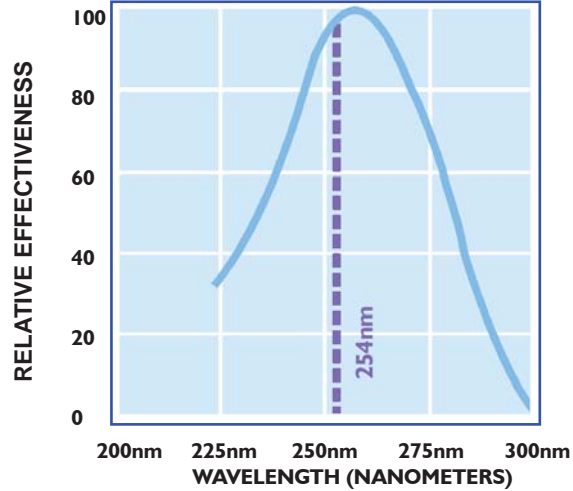
② Ultraviolet Output at 254 nanometers at 100 hours and 80 degrees F (approximate).

# GENUINE **STER-L-RAY**<sup>®</sup> GERMICIDAL LAMPS

Relative Spectral Energy Distribution (Typical)



Germicidal Effectiveness As Related to Wavelength



**STER-L-RAY**<sup>®</sup> 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**<sup>®</sup> 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**<sup>®</sup> and the **STER-L-RAY**<sup>®</sup> 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: [www.lamprecycle.org](http://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>Corynebacterium diphtheriae</i>	<i>C. diphtheriae</i>	Bacteria	Diphtheria	6,500
<i>Legionella pneumophila</i>	<i>L. pneumophila</i>	Bacteria	Legionnaire's Disease	2,700
<i>Mycobacterium tuberculosis</i>	<i>M. tuberculosis</i>	Bacteria	Tuberculosis (TB)	10,000
<i>Pseudomonas aeruginosa</i>	<i>P. aeruginosa</i>	Bacteria		3,900
<i>Serratia Marcescens</i>	<i>S. marcescens</i>	Bacteria		6,160
<i>Staphylococcus aureus</i>	<i>S. aureus</i>	Bacteria		6,600
<i>Staphylococcus epidermidis</i>	<i>S. epidermidis</i>	Bacteria		5,800
Adeno Virus Type III		Virus		4,500
Coxsackie A2		Virus		6,300
Influenza		Virus	Flu	3,400

\* Nominal Ultraviolet dosage ( $\mu\text{WSec}/\text{cm}^2$ ) necessary to inactivate better than 99% of specific microorganism. Consult factory for more complete listing.

THE STANDARD OF EXCELLENCE IN ULTRAVIOLET



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