

# Sani-Ray®

GERMICIDAL ULTRAVIOLET RECESSED FIXTURES



*Model RRD-24-1S*



*Model RRD-24-2S*



*Model RRD-24-4S*



SINCE 1963

**ATLANTIC**  
**ULTRAVIOLET**  
CORPORATION®

## ABOUT US



**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 RRD-24-1S**



**Model RRD-24-2S**



**Model RRD-24-4S**



 **MADE IN THE USA**  
FROM U.S. & IMPORTED PARTS

# PRINCIPLE OF OPERATION

## ADVANTAGES

### Effective

Virtually all microorganisms are susceptible to **Sani-Ray®** ultraviolet disinfection.

### Economical

Fixtures require very little power to operate.

### Fast

Disinfects both air and exposed surfaces in seconds.

### Easy

Simple installation and maintenance.

### Automatic

Continuous disinfection without special attention.

### Durable

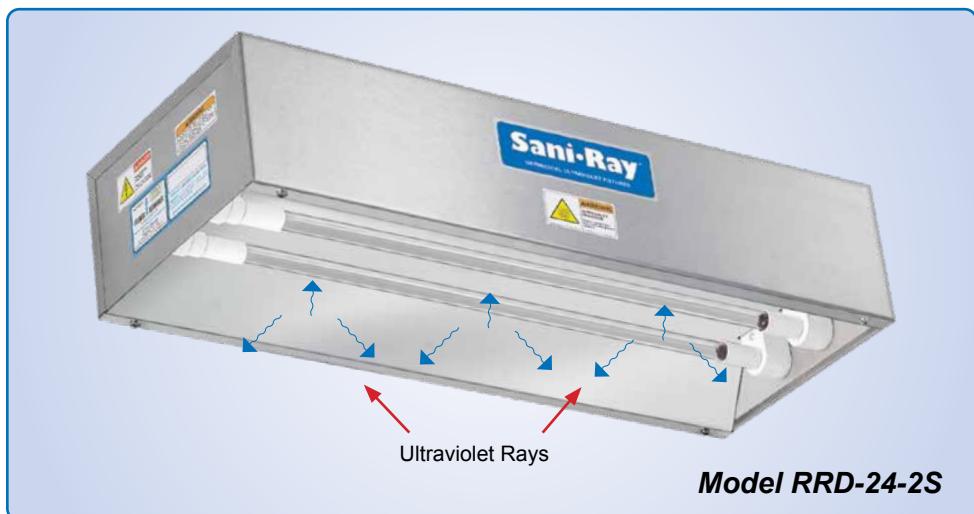
Polished stainless steel type 304.

### Versatile

Numerous models available to handle various applications.

### Low Maintenance

Only routine cleaning and annual lamp replacement are required.



**Model RRD-24-2S**

**Figure 1** – Circulated room air and any exposed surfaces are irradiated with direct germicidal ultraviolet rays. Shown with standard output instant start germicidal lamps. Also available with high output instant start germicidal ultraviolet lamps.

The **Sani-Ray®** Germicidal Ultraviolet Fixture design has been carefully conceived to provide direct germicidal ultraviolet exposure for air or surface disinfection. The stainless steel fixture should be used in open, unoccupied space to disinfect and prevent areas and surfaces from microorganisms such as bacteria, mold, and viruses. The treatment is very effective when there is a long, unobstructed path of germicidal ultraviolet (UV-C) rays. The UV-C dose provided to air and surfaces is a function of UV exposure time and the intensity of the lamps.

Our UV Application Specialists would be happy to perform the necessary calculations to ensure the fixture selected is appropriate for your particular application.

**Sani-Ray®** Germicidal Ultraviolet Fixtures should be utilized during periods when the room is unoccupied or when occupants take appropriate protective measures.



**Model RRDHO24-2S with Lamp Guard**

Shown with high output germicidal lamps.

All **SaniRay®** Models are available with optional Lamp Guard. This wire form lamp guard helps protect lamps(s) from accidental breakage. (See page 8 for Optional Accessories; page 11 for sample of applications)



### Sani-Ray® Standard Output Germicidal Ultraviolet Fixture

#### Surelite™ Electronic Ballasts

State-of-the-art electronic ballasts are specifically designed to operate ultraviolet lamps.

They offer these advantages over conventional ballasts:

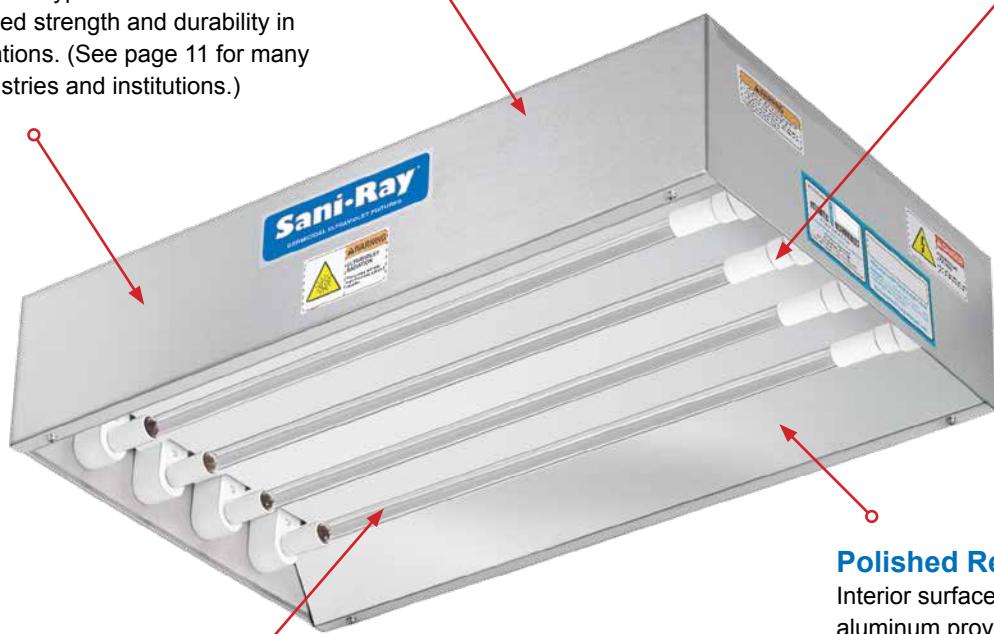
- Deliver high UV lamp output
- Lightweight
- Operate cool for longer life
- Versatile—each operates a wide range of lamps
- Save energy through high efficiency
- Provide silent operation

#### Steadfast™ Lampholder

Set includes a stationary and a spring-loaded, telescopic holder that holds a single pin lamp securely. The spring-loaded feature on one end facilitates convenient, quick and easy lamp changes.

#### Stainless Steel Construction

Manufactured in Type 304 stainless steel for unparalleled strength and durability in many applications. (See page 11 for many possible industries and institutions.)



**Model RRD24-4S**

#### Polished Reflector

Interior surface is polished specular aluminum providing a highly reflective surface to maximize ultraviolet intensity.

#### STER-L-RAY® Germicidal Lamp

Lamps are instant starting and provide the utmost in quality, sustained output, and longevity. (See page 9 for more information.)



#### Wire Form Lamp Guard (optional)

Helps protect lamp(s) from accidental breakage. (See page 8 for all optional accessories.)

Proper placement of the **Sani-Ray®** Germicidal Ultraviolet Fixture is essential to ensure safe and effective operation. The location should have an appropriate power source, not be mounted under any source of moisture or condensation, and be easily accessible—allowing enough clearance for routine cleaning or maintenance.



**Figure 2 – Sani-Ray® Germicidal Ultraviolet Fixture RRD24-1S is shown above**

## SPECIFICATIONS—Sani-Ray® Standard Output Germicidal Ultraviolet Fixtures

Model	Lamp (Quantity)	Power ① Consumption	Total Ultraviolet Output ②	Dimensions			Rated Lamp Life (Hours)
				Length	Width	Height	
RRD12-1S	05-1500-R (1)	12.0 Watts	3.1 Watts	12"	9"	5"	10,000
RRD18-1S	05-1340-R (1)	22.0 Watts	5.8 Watts	18"	9"	5"	10,000
RRD24-1S	05-1348-R (1)	30.7 Watts	8.5 Watts	24"	9"	5"	10,000
RRD30-1S	05-1352-R (1)	38.4 Watts	11.0 Watts	30"	9"	5"	10,000
RRD36-1S	05-1343-R (1)	42.9 Watts	15.0 Watts	36"	9"	5"	10,000
RRD48-1S	05-1334-R (1)	66.0 Watts	21.0 Watts	48"	9"	5"	10,000
RRD64-1S	05-1338A-R (1)	94.0 Watts	33.0 Watts	64"	9"	5"	10,000
RRD12-2S	05-1500-R (2)	24.0 Watts	6.2 Watts	12"	9"	5"	10,000
RRD18-2S	05-1340-R (2)	44.0 Watts	11.6 Watts	18"	9"	5"	10,000
RRD24-2S	05-1348-R (2)	61.4 Watts	17.0 Watts	24"	9"	5"	10,000
RRD30-2S	05-1352-R (2)	76.8 Watts	22.0 Watts	30"	9"	5"	10,000
RRD36-2S	05-1343-R (2)	85.8 Watts	30.0 Watts	36"	9"	5"	10,000
RRD48-2S	05-1334-R (2)	132.0 Watts	42.0 Watts	48"	9"	5"	10,000
RRD64-2S	05-1338A-R (2)	188.0 Watts	66.0 Watts	64"	9"	5"	10,000
RRD12-4S	05-1500-R (4)	48.0 Watts	12.4 Watts	12"	14"	5"	10,000
RRD18-4S	05-1340-R (4)	88.0 Watts	23.2 Watts	18"	14"	5"	10,000
RRD24-4S	05-1348-R (4)	122.8 Watts	34.0 Watts	24"	14"	5"	10,000
RRD30-4S	05-1352-R (4)	153.6 Watts	44.0 Watts	30"	14"	5"	10,000
RRD36-4S	05-1343-R (4)	171.6 Watts	60.0 Watts	36"	14"	5"	10,000
RRD48-4S	05-1334-R (4)	264.0 Watts	84.0 Watts	48"	14"	5"	10,000
RRD64-4S	05-1338A-R (4)	376.0 Watts	132 Watts	64"	14"	5"	10,000

① Total power consumption including ballast loss.

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

• 120 Volts 50/60 Hz and 230 Volts 50/60 Hz models are standard - specify when ordering.

• Fixtures are available in various voltages - Consult factory with specific power requirements.

• Models with other lamp quantities and configurations available - Consult factory with specific requirements.

### Sani-Ray® High Output Germicidal Ultraviolet Fixture

#### Surelite™ Electronic Ballasts

State-of-the-art electronic ballasts are specifically designed to operate ultraviolet lamps.

They offer these advantages over conventional ballasts:

- Deliver high UV lamp output
- Lightweight
- Operate cool for longer life
- Versatile—each operates a wide range of lamps
- Save energy through high efficiency
- Provide silent operation

#### Steadfast™ Lampholder

Set includes a stationary and a spring-loaded, telescopic holder that holds a single pin lamp securely. The spring-loaded feature on one end facilitates convenient, quick and easy lamp changes.

#### Stainless Steel Construction

Manufactured in Type 304 stainless steel for unparalleled strength and durability in many applications. (See page 11 for many possible industries and institutions.)



*Model RRDHO24-4S*

#### Polished Reflector

Interior surface is polished specular aluminum providing a highly reflective surface to maximize ultraviolet intensity.

#### STER-L-RAY® High Output Germicidal Lamp

Lamp provides the utmost in quality, sustained output and longevity. Yields more UV watts than standard UV-C lamps of the same length. (See page 9 for more information.)



#### Wire Form Lamp Guard (optional)

Helps protect lamp(s) from accidental breakage. (See page 8 for all optional accessories.)

# INSTALLATION

1-2 & 4 LAMP  
High Output Germicidal UV

Proper placement of the **Sani-Ray®** High Output Germicidal Ultraviolet Fixture is essential to ensure safe and effective operation. The location should have an appropriate power source, not be mounted under any source of moisture or condensation, and be easily accessible—allowing enough clearance for routine cleaning or maintenance.



**Figure 3 – Sani-Ray® High Output Germicidal Ultraviolet Fixture RRDHO24-1S is shown above**

## SPECIFICATIONS—Sani-Ray® High Output Germicidal Ultraviolet Fixtures

Model	Lamp (Quantity)	Power ① Consumption	Total Ultraviolet Output ②	Dimensions			Rated Lamp Life (Hours)
				Length	Width	Height	
RRDHO18-1S	05-0687 (1)	58.0 Watts	11.5 Watts	18"	9"	5"	13,000
RRDHO24-1S	05-0686 (1)	73.7 Watts	17.0 Watts	24"	9"	5"	13,000
RRDHO30-1S	05-0685 (1)	92.2 Watts	23.0 Watts	30"	9"	5"	13,000
RRDHO36-1S	05-1060-R (1)	108.0 Watts	28.0 Watts	36"	9"	5"	13,000
RRDHO48-1S	05-0576 (1)	158.4 Watts	40.0 Watts	48"	9"	5"	13,000
RRDHO64-1S	05-0690 (1)	193.0 Watts	54.0 Watts	64"	9"	5"	13,000
RRDHO18-2S	05-0687 (2)	116.0 Watts	23.0 Watts	18"	9"	5"	13,000
RRDHO24-2S	05-0686 (2)	147.4 Watts	34.0 Watts	24"	9"	5"	13,000
RRDHO30-2S	05-0685 (2)	184.3 Watts	46.0 Watts	30"	9"	5"	13,000
RRDHO36-2S	05-1060-R (2)	216.0 Watts	56.0 Watts	36"	9"	5"	13,000
RRDHO48-2S	05-0576 (2)	316.8 Watts	80.0 Watts	48"	9"	5"	13,000
RRDHO64-2S	05-0690 (2)	386.0 Watts	108.0 Watts	64"	9"	5"	13,000
RRDHO18-4S	05-0687 (4)	232.0 Watts	46.0 Watts	18"	14"	5"	13,000
RRDHO24-4S	05-0686 (4)	294.8 Watts	68.0 Watts	24"	14"	5"	13,000
RRDHO30-4S	05-0685 (4)	366.6 Watts	92.0 Watts	30"	14"	5"	13,000
RRDHO36-4S	05-1060-R (4)	432.0 Watts	112.0 Watts	36"	14"	5"	13,000
RRDHO48-4S	05-0576 (4)	633.6 Watts	160.0 Watts	48"	14"	5"	13,000
RRDHO64-4S	05-0690 (4)	772.0 Watts	216.0 Watts	64"	14"	5"	13,000

① Total power consumption including ballast loss.

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

• 120 Volts 50/60 Hz and 230 Volts 50/60 Hz models are standard - specify when ordering.

• Fixtures are available in various voltages - Consult factory with specific power requirements.

• Models with other lamp quantities and configurations available - Consult factory with specific requirements.

## OPTIONAL ACCESSORIES



### **SENTINEL® Germicidal UV Lamp Indicator \***

The **SENTINEL®** Remote Lamp Indicator monitors lamp operation of one, two, or four lamp ultraviolet fixtures and is available with a 25, 50, or 100 foot cable. (\*Available for All **Sani-Ray®** fixtures, but must be ordered at same time as fixture. Installed in factory.)



### **ArmorLite™ Germicidal UV Lamp Safety Shield**

Protective coating applied to **STER-L-RAY®** Germicidal Lamps ensures protection for employees, products, and work environments by eliminating dangers associated with broken lamp fragments. (Lamp on right has **ArmorLite™** coating. Available for **STER-L-RAY®** lamps used in ALL **Sani-Ray®** fixtures at time of purchase. Coating installed at the factory.)



### **Zenith™ Germicidal Ultraviolet Detector**

The **Zenith™** UV-C Detector is a sensitive hand-held, self-contained, battery operated meter that can be used for:

- Monitoring UV-C Germicidal Lamp Intensity & Aging
- Measuring UV-C Germicidal Fixture Leakage



### **Promate™ Integral Elapsed Time Indicator\***

The Integral Elapsed Time Indicator is a real-time, non-resettable display of accumulated operating time. Useful for scheduling and recording maintenance and lamp replacement.



### **Promate™ Danger Signs**

To be affixed to entry door(s) to warn that an ultraviolet sanitizer is in use and that the treatment area **MUST** not be entered. **Sani-Ray®** is for use only in **unoccupied** areas. 2 signs are supplied with each fixture.

**NOTE:** Danger Signs have English on one side and Spanish on the other.



### **More Optional Accessories**

Power Line Cord, Handles, On/Off Switch, Mounting Legs, and Mounting Brackets for Ceiling Mounting. Our UV Application Specialists would be happy to ensure the optional accessories purchased are appropriate for your particular application.



### **Wire Form Lamp Guard\***

Wire form lamp guard helps protect lamp(s) from accidental breakage.

\* Item must be ordered at same time as **Sani-Ray®** fixture (installed at factory).

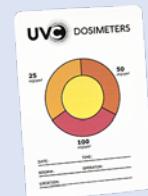
### **Assure™ UV-C Dosimeter**

A portable, full-featured instrument that provides highly-accurate UV-C measurements in  $\text{mJ/cm}^2$ . Sits upright, on back or side, and can be placed in supplied wall holder. Uses 1 AAA battery.



### **UV-C Dosimeter Card**

Contains a patented colorimetric indicator that changes color at 25, 50, and 100  $\text{mJ/cm}^2$  to visibly confirm that your **Sani-Ray®** is achieving the desired UV-C exposure. Each card is designed for 1 treatment cycle and **CANNOT** be reused.



### **Personal UV-C Exposure Indicators**

These indicators change color to reveal the word "STOP" if personnel are exposed to an accumulated dose of 6  $\text{mJ/cm}^2$  of UV-C irradiation. Adhesive backing sticks to clothing. Available in packs of 10. Designed for single, daily use and **CANNOT** be reused.



### **Promate™ Safety Glasses**

Safety eyewear should be used as general-purpose safety protection and for additional shielding from germicidal UV rays.



### **Promate™ Face Shield**

Lightweight visor with adjustable headgear provides eye and face protection from germicidal ultraviolet rays.



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ULTRAVIOLET  
CORPORATION®

# GENUINE STER-L-RAY® GERMICIDAL LAMPS

**STER-L-RAY® Germicidal UV 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® Instant Start Germicidal UV Lamps** utilize tungsten filaments. 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 surface applications which require ultraviolet intensity.

**STER-L-RAY® High Output (HO) Germicidal UV Lamps** are similar in size and shape to conventional germicidal UV lamps but are capable of operating at higher UV output. The HO lamps yield more UV watts than standard UV-C lamps of the same length. Lamp life is governed by the life of the filaments and is affected by the frequency of starting. **STER-L-RAY®** High Output Lamps are well suited for a variety of air and surface applications which require high output ultraviolet intensity.

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

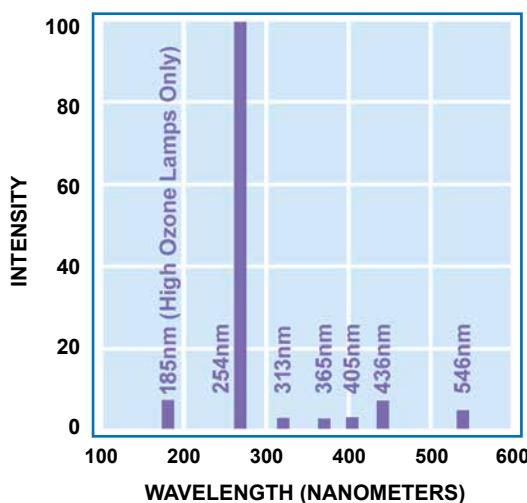
**CAUTION:** Exposure to direct or reflected germicidal ultraviolet rays will cause painful eye irritation and reddening of the skin. Personnel subject to such exposure must wear suitable face shield, gloves, and protective clothing.

Hg – LAMP CONTAINS MERCURY, manage in accord with disposal laws, see: [LampRecycle.org](http://LampRecycle.org).

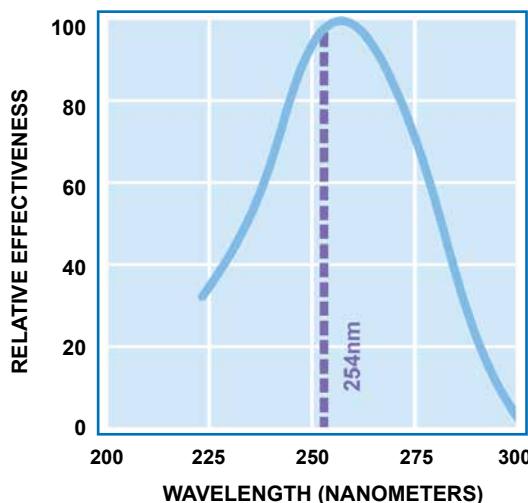


## OPERATING CHARACTERISTICS

Relative Spectral Energy Distribution (Typical)



Germicidal Effectiveness As Related to Wavelength



## GERMICIDAL ULTRAVIOLET DOSAGE

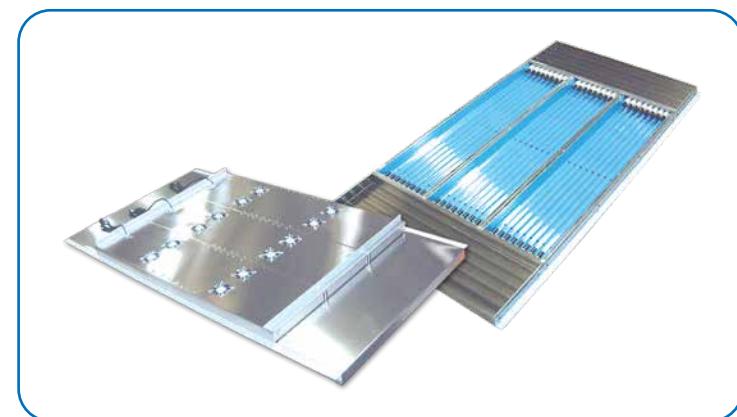
Germicidal ultraviolet lamps provide effective protection against microorganisms. A small cross-section is shown below.

ORGANISM	ALTERNATE NAME	TYPE	DISEASE	DOSE*
<i>Corynebacterium diphtheriae</i>	<i>C. diphtheriae</i>	Bacterium	Diphtheria	6.50
<i>Legionella pneumophila</i>	<i>L. pneumophila</i>	Bacterium	Legionnaire's Disease	12.30
<i>Mycobacterium tuberculosis</i>	<i>M. tuberculosis</i>	Bacterium	Tuberculosis (TB)	10.0
<i>Pseudomonas aeruginosa</i>	<i>P. aeruginosa</i>	Bacterium		3.90
<i>Serratia marcescens</i>	<i>S. marcescens</i>	Bacterium		6.160
<i>Staphylococcus aureus</i>	<i>S. aureus</i>	Bacterium	Pneumonia, Endocarditis, Sepsis	6.60
<i>Methicillin-resistant Staphylococcus aureus</i>	<i>MRSA</i>	Bacterium	Pneumonia, Endocarditis, Sepsis	6.50
<i>Staphylococcus epidermidis</i>	<i>S. epidermidis</i>	Bacterium	Endocarditis, Sepsis	5.80
<i>Streptococcus pyogenes</i>	Strep	Bacterium	Strep Throat	.80
<i>Clostridium difficile</i>	<i>C. diff</i>	Spore	Colitis	16.0
<i>Adenovirus</i>		Virus	Common Cold	4.50
<i>Coxsackie A2</i>		Virus	Hand, Foot, and Mouth Disease, Conjunctivitis, Meningitis	6.30
<i>Influenza</i>		Virus	Flu	1.20
<i>SARS-CoV-2</i>		Virus	COVID-19	5.0
<i>Morbillivirus hominis</i>	Measles virus, MeV	Virus	Measles, rubeola	4.40

\*Nominal Ultraviolet dosage (mJ/cm<sup>2</sup>) necessary to inactivate better than 99% of specific microorganism. Visit [Ultraviolet.com/microorganisms-inactivated](http://Ultraviolet.com/microorganisms-inactivated) for complete listing.

## CUSTOM Sani-Ray® GERMICIDAL ULTRAVIOLET FIXTURES

Our UV Application Specialists would be happy to perform the necessary calculations to ensure the fixture selected is appropriate for your particular application. If a special fixture is recommended, the factory will manufacture and deliver exactly what is needed. For example, the photo (right) is a customized system for conveyor belt disinfection with built-in cooling fans.



## APPLICATIONS\*

- Laboratories
- Hospitals
- Clinics
- Maternity Areas
- Labor & Delivery Areas
- Pathology Labs
- Kidney Dialysis Labs
- Operating Rooms
- Universities
- Veterinary Clinics
- Animal Husbandry
- Food Industry
- Food Processing
- Dairy Processing
- Bakeries
- Clean Rooms
- Pharmaceutical Mfg.
- Electronic Production
- Cosmetic Production
- Conveyor Belt Systems



**Model RRD-24-1S**



**Model RRD-24-2S**



**Model RRD-24-4S**

\* Other Applications Possible.  
Contact our UV Application Specialists



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