

Sani-Ray®

GERMICIDAL ULTRAVIOLET RECESSED FIXTURES

Models RRD12-1, 2 & 4

RRD18-1, 2 & 4, RRDHO18-1, 2 & 4

RRD24-1, 2 & 4, RRDHO24-1, 2 & 4

RRD30-1, 2 & 4, RRDHO30-1, 2 & 4

RRD36-1, 2 & 4, RRDHO36-1, 2 & 4

RRD48-1, 2 & 4, RRDHO48-1, 2 & 4

RRD64-1, 2 & 4, RRDHO64-1, 2 & 4



ATLANTIC ULTRAVIOLET
CORPORATION® SINCE 1963

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

375 Marcus Boulevard, Hauppauge, NY 11788
(631) 273-0500 • Fax: (631) 273-0771
Email: Sales@AtlanticUV.com

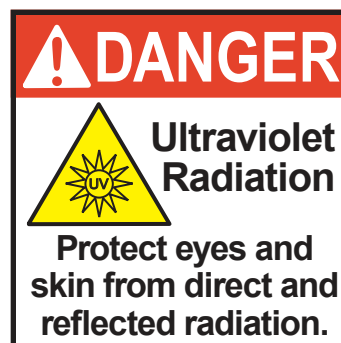
Shop Products at
AtlanticUltraviolet.com

Learn More at **Ultraviolet.com**



Installation, Operation & Maintenance

Read and Follow All
Safety Instructions.
Save These Instructions.



Owner's Manual

TABLE OF CONTENTS

SAFETY WARNINGS	3
SAFETY INSTRUCTIONS	3
CAUTION.....	3
SAFETY LABELS & SIGNS.....	4
PRODUCT APPLICATION	4-5
CONSTRUCTION	4
PRINCIPLE OF OPERATION	4
LIMITATION OF USE.....	4-5
UNPACKING	5
INSTALLATION	5-7
FIXTURE PLACEMENT	5
DIMENSIONAL DATA.....	6
INSTALLATION.....	7
PRECAUTIONS	7
MAINTENANCE.....	8
LAMP INSTALLATION, REPLACEMENT, OR CLEANING	8
BREAKAGE	8
DISPOSAL OF MERCURY ADDED LAMPS	8
TROUBLESHOOTING	9
OPTIONAL ACCESSORIES	9
TECHNICAL SPECIFICATIONS.....	10
REPLACEMENT PARTS.....	11
USER ASSISTANCE	12
PATENT NOTICE.....	12
WARRANTY & PRODUCT REGISTRATION	12


These instructions generally describe the installation, operation and maintenance of the **Sani-Ray®** Germicidal Ultraviolet Recessed Fixtures. Questions that are not specifically answerable by these instructions should be directed to the factory. Atlantic Ultraviolet Corporation® takes all possible precautions when packaging equipment to prevent damage. Carefully inspect and report all damages. Do not install damaged equipment. Follow all instructions on any labels or tags. Carefully inspect all packing materials before discarding to prevent the loss of accessories, mounting hardware, spare parts or instructions.


The information and recommendations contained in this publication are based upon data collected by the Atlantic Ultraviolet Corporation® and are believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. Specifications and information are subject to change without notice.





SAFETY WARNINGS


- All personnel should be alerted to the potential hazards indicated by the product safety labeling on this unit.
- The following conventions are used to indicate and classify precautions in this manual and on product safety labeling. Failure to observe precautions could result in injury to people or damage to property.

 This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

 **DANGER** Danger indicates an **IMMINENTLY** hazardous situation, which, if not avoided, **WILL** result in death or serious injury.

 **WARNING** Warning indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **COULD** result in death or serious injury.


 **CAUTION** Caution indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **MAY** result in minor or moderate injury.


 **CAUTION** Caution used without the safety alert symbol indicates a potentially hazardous situation, which, if not avoided, may result in property damage.


 This symbol is used to identify an **ELECTRICAL SHOCK** or **ELECTROCUTION** hazard.

 This symbol is used to identify an **ULTRAVIOLET LIGHT** hazard.


 This symbol is used to identify the need to wear approved ultraviolet blocking eyewear.

 This symbol is used to identify the need to wear approved ultraviolet blocking face shield.




 This symbol is used to identify the need to wear protective gloves.




 This symbol is used to identify components which must not be disposed of in trash

SAFETY INSTRUCTIONS

 **WARNING** To guard against injury, basic safety precautions should be observed, including the following:

1. Read and follow **ALL** safety instructions.

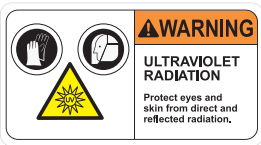
   **WARNING** Avoid exposure to direct or reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.

2. Intended for indoor use only.
3. Do not alter design or construction.
4. Do not use this fixture for other than its intended purpose, as described in this manual.
5. Do not mount under any source of moisture or condensation, such as humidifiers, cooling coils, etc.
6. Do not remove any labels or devices.
7.  **CAUTION** Germicidal ultraviolet rays may break down plastic, rubber or other non-metallic materials, with inadequate resistance to ultraviolet. Shield all plastic, rubber or other non-metallic parts such as; plastic drain pans, wire insulation, flex ducts, humidifiers, filters, etc. which may be exposed to direct or reflected germicidal ultraviolet rays.
8.  **WARNING** Do not operate without proper electrical ground.
9. Do not operate the unit if there is visible or suspected damage to the unit or, if applicable, there is damage to power cord and/or plug.
10. Utility power supplied to the fixture **MUST** match power requirements listed on the fixture label.
11.  **WARNING** **Always disconnect power to the unit before performing any service or maintenance.**
12. Read and follow all notices and warnings on the unit.
13. **SAVE THESE INSTRUCTIONS.**

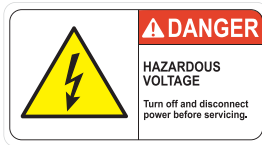
CAUTION

It is the user's responsibility to determine and validate the suitability of this equipment for use in the user's system or process. No warranty or representation is made by the manufacturer with respect to suitability or performance of this equipment or to the results that may be expected from its use. The user should periodically inspect, clean as necessary and confirm the presence and good legibility of the product safety labels. Contact the factory for replacement labels in the event that any of the labels are missing or illegible.

SAFETY LABELS & SIGNS



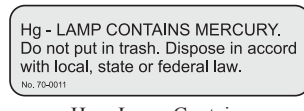
Danger Label: Ultraviolet Radiation (70-0052A)



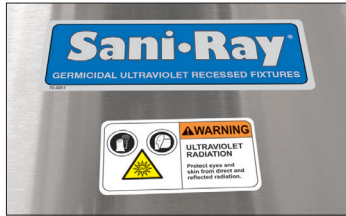
Danger Label: Hazardous Voltage (70-0053)



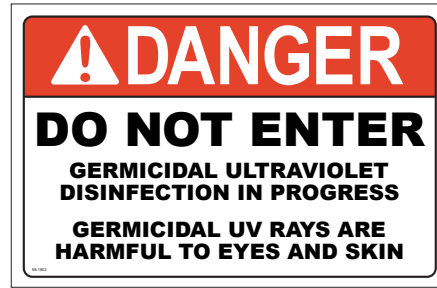
Warning Germicidal UV (70-0037)



Hg - Lamp Contains Mercury (70-0011)



Location of Danger Labels



Post supplied Danger Signs on all access doors to the area where treatment will take place.

- 8.5" x 5.5"
- 2-Sided (English / Spanish)
- 2 Supplied
- Item Number: 98-1802

PRODUCT APPLICATION

CONSTRUCTION

The **Sani-Ray**® Germicidal Ultraviolet Recessed Fixture consists of:

- **STER-L-RAY**® Germicidal Ultraviolet Lamp(s), which delivers ultraviolet energy at the specific wavelength of 254 nanometers (nm). This wavelength is highly effective against microbes, including virus, bacteria, and mold spores.
- **Surelite**™ Electronic Ballast(s) capable of operating at 120v 50/60Hz or 230v 50/60Hz. Other power supplies may be available. Contact factory for specifics.
- All electronics and wiring are housed in an enclosure constructed of stainless steel. Stainless steel construction provides strength, durability and lasting value.
- A polished reflector, whose design and specular aluminum construction maximizes ultraviolet intensity to the exposed area.

PRINCIPLE OF OPERATION

The **Sani-Ray**® design has been carefully conceived to provide germicidal ultraviolet dosage for air and surface disinfection in **unoccupied** space to disinfect and prevent areas and surfaces from microorganisms. The dosage, as it applies to ultraviolet disinfection, is a function of time and the intensity of ultraviolet radiation, to which the air and surface is exposed. The exposure time, in seconds, is the total time it takes the air to move through the ultraviolet field, produced by the germicidal lamp(s). Exposure time is related to the airflow rate; the higher the airflow, the lower the exposure time or the lower the airflow, the higher the exposure time. The UV intensity is the amount of energy, emitted by the germicidal lamp(s).



LIMITATION OF USE

- The **Sani-Ray**® requires professional installation by a licensed electrician; so all wiring complies with applicable state, local, and national electrical and mechanical codes.
- **Sani-Ray**® requires knowledgeable planning for: location, installation, and supervision to prevent ultraviolet exposure of occupants to direct or reflected ultraviolet rays.

CAUTION Overexposure to germicidal ultraviolet rays will result in the irritation of the eyes and reddening of the skin. For this reason, it is of the utmost importance that your ultraviolet application be carefully planned and implemented so as to avoid exposure of occupants, to direct or reflected ultraviolet rays.

- Personal protection equipment is required when entering the irradiated space with the germicidal lamp(s) operating. Personal protection equipment includes skin and eye protection such as gloves, long sleeves with no gaps between cuff and gloves, and an ultraviolet resistant face shield.

(Continued on Page 5)

- The American Conference of Governmental Industrial Hygienists (ACGIH) has established that the ultraviolet radiant exposure incident for unprotected eyes or skin should not exceed 0.2 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$) at 254 nanometers (nm) for an eight (8) hour period. (“2004 TLVs[®] and BEIs[®]”)
- Safety and maintenance procedures **MUST** be implemented to prevent exposure of personnel and other persons who may be in and around the area. All work performed in the irradiated space must be monitored to ensure that it does not adversely impact the safety or effectiveness of the installation.
- To monitor and test ultraviolet intensity, see “**Zenith™ Germicidal Ultraviolet Detector**” in the “**Optional Accessories**” section.

* The Threshold Limit Values (TLVs[®]) and Biological Exposure Indices (BEIs[®]) are developed as guidelines to assist in the control of health hazards. These recommendations or guidelines are intended for use in the practice of industrial hygiene, to be interpreted and applied only by a person trained in this discipline. They are not developed for use as legal standards and ACGIH[®] does not advocate their use as such. However, it is recognized that in certain circumstances, individuals or organizations may wish to make use of these recommendations or guidelines as a supplement to their occupational safety and health program. ACGIH[®] will not oppose their use in this manner, if the use of TLVs[®] and BEIs[®] in these instance will contribute to the overall improvement in worker protection. However, the user must recognize the constraints and limitations subject to their prior use and bear the responsibility for such use. (from acgih.org website)

UNPACKING



IN ORDER TO PERFORM THIS TASK, BE SURE TO WEAR THE FOLLOWING SAFETY EQUIPMENT: SAFETY GLASSES OR A FACE SHIELD, AS WELL AS GLOVES.

- Remove the **Sani-Ray[®]** Germicidal Ultraviolet Recessed Fixture from its shipping carton.
- Atlantic Ultraviolet Corporation[®] takes all possible precautions when packaging this fixture to prevent damage. Carefully inspect the fixture, power cord and plug if applicable, for damage, report all damage immediately. Do not assemble or operate if there is any damage, visible or suspected.
- Germicidal lamp(s) are packed separately, to ensure maximum protection for the lamps. Keep the lamp(s) aside until ready for installation.
- Carefully inspect all packing materials to prevent the loss of accessories, mounting hardware, spare parts or instructions.
- Do not discard packing materials until fixture is assembled and check out is complete.

Sani-Ray[®] Model RRDxx-1S, RRDHOxx-1S fixtures include:

- 1 - **Sani-Ray[®]** Germicidal Ultraviolet Recessed Fixture
- 1 - **STER-L-RAY[®]** Germicidal Ultraviolet Lamp
- 1 - Operation Manual
- 2 - **Promate™** Danger Signs (98-1802)

Sani-Ray[®] Model RRDxx-4S, RRDHOxx-4S fixtures include:

- 1 - **Sani-Ray[®]** Germicidal Ultraviolet Recessed Fixture
- 4 - **STER-L-RAY[®]** Germicidal Ultraviolet Lamps
- 1 - Operation Manual
- 2 - **Promate™** Danger Signs (98-1802)

Sani-Ray[®] Model RRDxx-2S, RRDHOxx-2S fixtures include:

- 1 - **Sani-Ray[®]** Germicidal Ultraviolet Recessed Fixture
- 2 - **STER-L-RAY[®]** Germicidal Ultraviolet Lamps
- 1 - Operation Manual
- 2 - **Promate™** Danger Signs (98-1802)

INSTALLATION

⚠ CAUTION Access to area **MUST** be avoided when **Sani-Ray[®]** fixture is operating.

FIXTURE PLACEMENT

Proper fixture placement is essential. To ensure safe and effective operation, the location should:

- Have an appropriate power source matching power requirements listed on the fixture label.
- Not be mounted under any source of moisture or condensation.
- Prevent exposure of any plastic, rubber or other non-metallic materials, with inadequate resistance to ultraviolet. If necessary, shield all plastic, rubber or other non-metallic parts using aluminum tape, or equivalent ultraviolet resistant material.
- Be free of any components that would be damaged by or interfere with the installation.
- Be easily accessible and allow enough clearance for routine cleaning and maintenance.

DIMENSIONAL DATA

Figure 1 – Sani-Ray® RRD_{XX}-1S / RRD_{XX}-2S, RRDHO_{XX}-1S / RRDHO_{XX}-2S

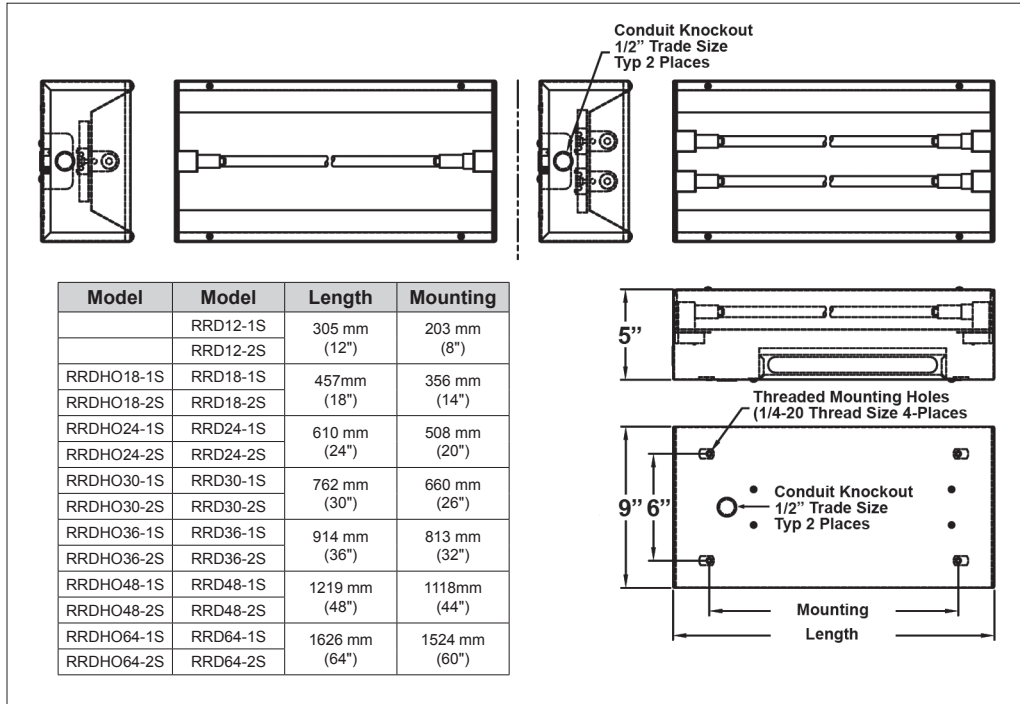
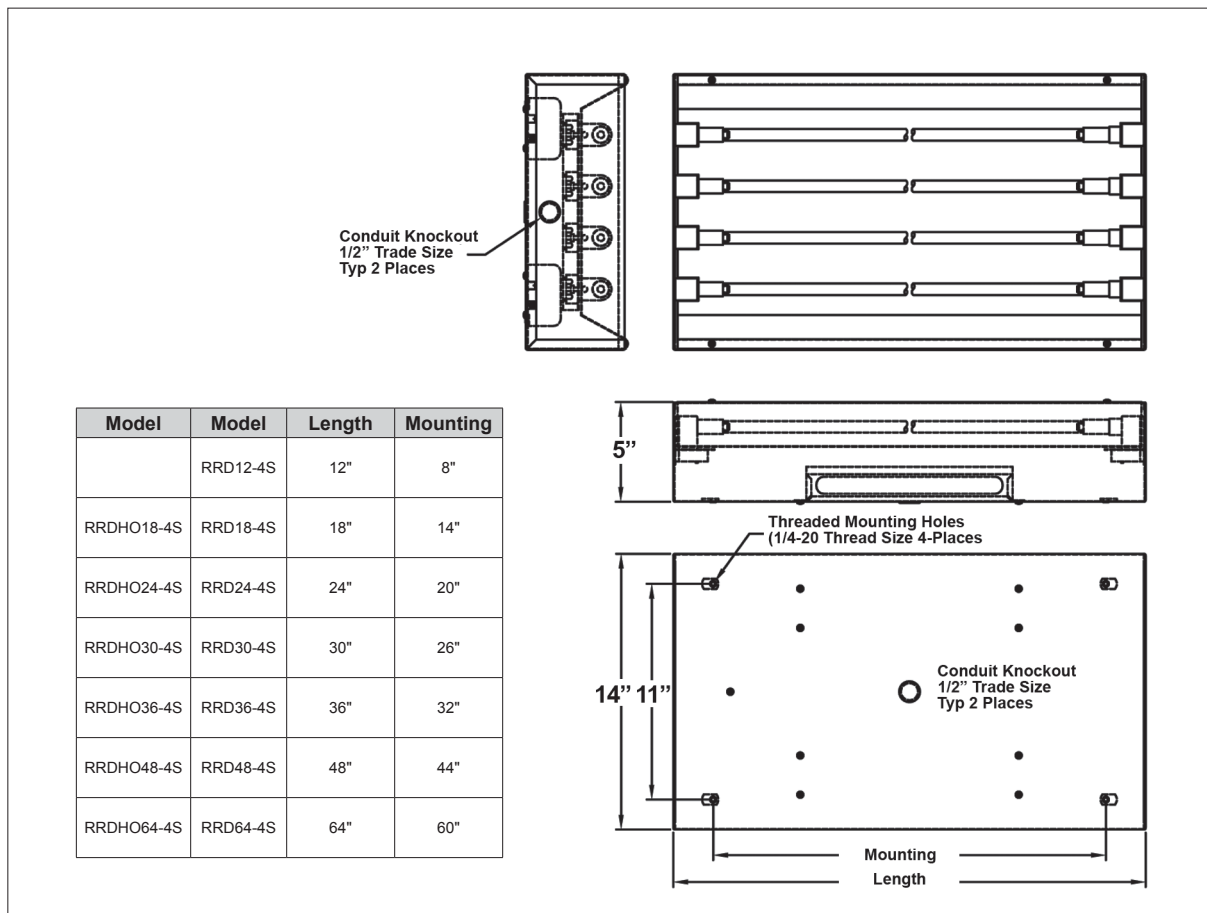
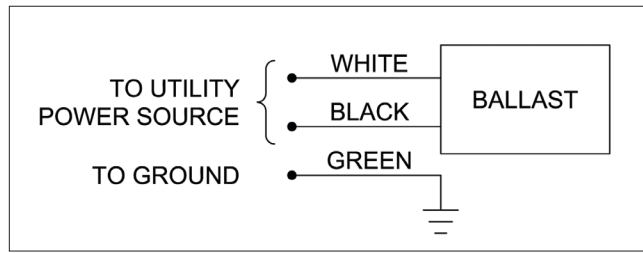


Figure 2 – Sani-Ray® RRD_{XX}-4S, RRDHO_{XX}-4S



All specifications, dimensional data, etc. are approximate and subject to change without notice.

Figure 3 – Input Power Wiring Diagram



INSTALLATION



IN ORDER TO PERFORM THIS TASK, BE SURE TO WEAR THE FOLLOWING SAFETY EQUIPMENT: SAFETY GLASSES OR A FACE SHIELD, AS WELL AS GLOVES.

CAUTION Access to area **MUST** be avoided when **Sani-Ray®** fixture is operating.

1. All standard **Sani-Ray®** fixtures:
 - Are not equipped with a power cord and require professional installation so all wiring complies with applicable state, local and national electrical and mechanical codes.
 - Require removal of the cover to complete input power wiring.
 - Require suitable wire nuts or other approved interconnecting method to connect the **Sani-Ray®** ballast wiring to utility input power wiring.
 - Require an adequately sized ground wire. An 8-32UNC stud, located inside the chassis, is provided for securing the ground wire to the **Sani-Ray®** chassis.
 - Have two 7/8" trade size knockout plugs, for standard electrical fittings.
2. After fixture is mounted and wired, install lamp(s) following the steps in “**Lamp Installation, Replacement, or Cleaning**” in the “**Maintenance**” section.

PRECAUTIONS

- Procedures **MUST** be adopted to ensure that the **Sani-Ray®** is disconnected from power whenever anyone (personnel, contractors etc.) works or is in the irradiated space. Any person who works in and around the fixture **MUST** be briefed on the precautions to be observed.
- If there are any doubts or concerns about the safety or the effectiveness of the installation, or if a sensitive ultraviolet meter is required, please contact our Application Specialists. (See “**Zenith™ Germicidal Ultraviolet Detector**” in the “**Optional Accessories**” section.)

MAINTENANCE

 **⚠️ WARNING** Always disconnect power to the fixture before performing any service or maintenance.

- The **Sani-Ray**® is designed to operate with a minimal amount of maintenance.
- A regular cleaning schedule of the **STER-L-RAY**® Germicidal Lamp(s) **MUST** be established, and carefully maintained, based on visual inspection and experience. The frequency between cleanings will vary with the conditions surrounding each installation. It is recommended that the ultraviolet lamp(s) be cleaned at least once every three (3) months.
- The **STER-L-RAY**® Germicidal Ultraviolet Lamp(s) used in the **Sani-Ray**® have a manufacturer's rated effective life of 10,000 hours for standard instant start lamps and 13,000 hours for high output lamps. Lamps may operate longer than their rated effective life, but the reduction in ultraviolet output will make it impractical to use past the manufacturer's rated life. For maximum efficiency lamp replacement is recommended after about one (1) year of continuous use.
- Unless lamp replacement is due to failure or breakage, it is recommended that all lamps be replaced at the same time.

LAMP INSTALLATION, REPLACEMENT, OR CLEANING



IN ORDER TO PERFORM THIS TASK, BE SURE TO WEAR THE FOLLOWING SAFETY EQUIPMENT: SAFETY GLASSES OR A FACE SHIELD, AS WELL AS GLOVES.

 **⚠️ WARNING** Always disconnect power to the fixture before performing any service or maintenance.

 **⚠️ CAUTION** Ultraviolet lamps are easily damaged. Exercise care when handling lamps.

1. Disconnect power to the fixture.
2. Remove **STER-L-RAY**® lamp(s), carefully press lamp against the spring-loaded lampholder. When the **STER-L-RAY**® lamp pin clears the stationary lampholder, pull lamp out and away from fixture.
3. Moisten a clean, lint-free cloth with denatured alcohol and clean lamp(s).
4. When **STER-L-RAY**® lamp(s) have been removed and cleaned, safely set aside.
5. The reflector of the **Sani-Ray**® is constructed from specular aluminum, a highly reflective mirror like material, used to maximize ultraviolet intensity. To remove any dust, dirt, fingerprints, smears, etc, from the outer surfaces of the reflector, moisten a clean, lint-free cloth with denatured alcohol and wipe down the reflector. Buff out any streaks, left from the cleaning, using a soft dry cloth.
6. Install **STER-L-RAY**® lamp(s), insert lamp pin into spring-loaded lampholder. Carefully press lamp against the spring-loaded lampholder. Align lamp pin with stationary lampholder. Slowly ease the pressure until lamp is fully seated in lampholders.
7. Verify that lamp(s) is properly seated.
8. Repeat until all lamps have been cleaned and properly installed.
9. Restore power to the fixture.



⚠️ WARNING Avoid exposure to direct or reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.

10. Wear personal protection equipment such as gloves; long sleeves with no gap between cuffs and gloves, and ultraviolet face shield, then verify operation by viewing lamps(s). If the fixture is not operating properly, go to “**Troubleshooting**” section.

BREAKAGE

 **⚠️ CAUTION** Broken Quartz is SHARP.



Wear protective gloves when handling broken ultraviolet lamp(s). In the event of breakage, **DO NOT** use a household vacuum cleaner to pick up quartz fragments. Sweep up debris into a plastic bag and dispose of properly.

DISPOSAL OF MERCURY ADDED LAMPS



Germicidal ultraviolet lamps, like standard fluorescent lamps contain small amounts of mercury. Mercury added lamps should not be placed in the trash. Dispose of properly. For further information regarding the disposal and recycling of lamps containing mercury, along with Federal and State requirements visit LampRecycle.org. For more information on **STER-L-RAY**® Germicidal Ultraviolet Lamps, visit AtlanticUltraviolet.com or Ultraviolet.com.

TROUBLESHOOTING

 **WARNING** Always disconnect power to the fixture before performing any service or maintenance.



IN ORDER TO PERFORM THIS TASK, BE SURE TO WEAR THE FOLLOWING SAFETY EQUIPMENT: SAFETY GLASSES OR A FACE SHIELD, AS WELL AS GLOVES.

IMPORTANT: This fixture is to be serviced **ONLY** by qualified, and appropriately licensed, personnel

Table 1 – Troubleshooting

Problem	Possible Cause	Corrective Action
Sani-Ray® fixture not operating.	No electrical power.	Verify that the fixture is connected to a live power source.
	Power connections, to fixture, loose or disconnected.	Verify power connections to fixture are fully engaged.
	Surelite™ Ballast.	Disconnect the fixture from utility power. Replace ballast.
STER-L-RAY® Germicidal Lamp not operating.	STER-L-RAY® Germicidal lamp(s) not properly seated.	Confirm connection between lamp and lampholder is tight, and that lamp is making full contact with lampholder.
	STER-L-RAY® Germicidal lamp faulty.	Swap suspect lamp, with lamp known to be good. If suspect lamp does not operate, replace lamp.
	Ballast not functioning.	Disconnect the fixture from utility power. Replace ballast.

If the above measures fail to correct the problem(s), contact our UV Application Specialists. Contact options can be found in the “User Assistance” section.

OPTIONAL ACCESSORIES

- ArmorLite™ Germicidal Ultraviolet Lamp Safety Shield:** Protective coating applied to **STER-L-RAY®** Lamps ensures protection by eliminating the dangers associated with fragments of broken quartz and mercury contamination.
- Zenith™ Germicidal Ultraviolet Detector (30-1015):** A sensitive, hand-held, self-contained battery operated ultraviolet meter that can be used for:
 - Monitoring UV-C Germicidal Lamp Intensity & Aging
 - Measuring UV-C Germicidal Fixture Leakage.
- SENTINEL® Germicidal Ultraviolet Lamp Operation Indicator: (Must be ordered at same time as Sani-Ray® fixture.)** Monitors lamp operation of one-lamp (35-4502A1) two-lamp (35-4502A2) or four-lamp (35-4502A4) germicidal ultraviolet fixtures, and can be mounted using 25, 50 or 100 foot cables.
- Promate™ Safety Glasses (00-1299):** Safety eyewear **MUST** be used as general-purpose safety protection and for additional shielding from ultraviolet rays
- Promate™ Face Shield (00-0126):** Lightweight visor with adjustable headgear provides eye and face protection from germicidal ultraviolet rays.
- Promate™ Danger Signs (98-1802):** Glossy card stock 5.5" x 4.25" 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. Two (2) signs are included with each model; additional signs may be purchased. **NOTE:** Danger Signs have English on one side and Spanish on the other.
- Assure™ UV-C Dosimeter (00-0376):** A portable, full-featured instrument that provides highly-accurate UV-C measurements in mJ/cm². Sits upright, on back or side, and can be placed in supplied wall holder. Uses 1 AAA battery.
- UV-C Dosimeter Card (00-0373):** Contains a patented colorimetric indicator that changes color at 25, 50, and 100 mJ/cm² to visibly confirm that your **Sani-Ray®** is achieving the desired UV-C exposure. Each card is designed for one (1) treatment cycle and **CANNOT** be reused. Complete instructions for use are on back of card.
- Personal UV-C Exposure Indicators (00-0375):** These indicators change color to reveal the word “STOP” if personnel are exposed to an accumulated dose of 6 mJ/cm² of UV-C irradiation. Adhesive backing sticks to clothing. Available in packs of 10. Designed for single, daily use and **CANNOT** be reused.
 - Other accessories, such as: handles, standoff legs, brackets for ceiling mounting, power cords and **ON/OFF** switches and lamp guards are available.

For more information and purchasing, contact our offices weekdays between 8:30 am and 5:00 pm Eastern time at: Atlantic Ultraviolet Corporation®, 375 Marcus Boulevard, Hauppauge, New York, 11788 • Tel: (631) 273-0500 • Fax: (631) 273-0771 Email: Sales@AtlanticUV.com • Shop: AtlanticUltraviolet.com • Learn More: Ultraviolet.com

TECHNICAL SPECIFICATIONS

Table 2 – Technical Specifications

Model:	RRD12			RRD18			RRD24			RRD30			RRD36			RRD48			RRD64		
	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4
Volts: ①	120v			120v			120v			120v			120v			120v			120v		
Hertz:	50/60Hz			50/60Hz			50/60Hz			50/60Hz			50/60Hz			50/60Hz			50/60Hz		
Amps (120v):	.08A	.16A	.32A	.14A	.28A	.56A	.21A	.42A	.84A	.33A	.66A	.99A	.33A	.66A	1.32A	.42A	.84A	1.68A	.54A	1.1A	2.2A
Length:	12"			18"			24"			30"			36"			48"			64"		
Height:	5"			5"			5"			5"			5"			5"			5"		
Width:	9"		14"	9"		14"	9"		14"	9"		14"	9"		14"	9"		14"	9"		14"
Lamp Quantity:	1	2	4	1	2	4	1	2	4	1	2	4	1	2	4	1	2	4	1	2	4
Lamp PN#:	05-1500-R			05-1340-R			05-1348-R			05-1352-R			05-1343-R			05-1334-R			05-1338A-R		
Power (W) ② Consumption:	11	22	44	18.4	36.8	73.6	25.6	51.2	102.4	32	64	128	41	82	164	55	110	220	75	150	300
Ultraviolet Output:③(W)	3.1	6.2	12.4	5.8	11.6	23.2	8.5	17	34	11	22	44	15	30	60	21	42	84	33	66	132
Effective Life: (Hrs)	10,000			10,000			10,000			10,000			10,000			10,000			10,000		

Model:	RRDHO18			RRDHO24			RRDHO30			RRDHO36			RRDHO48			RRDHO64		
	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4	-1	-2	-4
Volts: ①	120v			120v			120v			120v			120v			120v		
Hertz:	50/60Hz			50/60Hz			50/60Hz			50/60Hz			50/60Hz			50/60Hz		
Amps (120v):	.35A	.7A	1.4A	.4A	.8A	1.6A	.53A	1.04A	2.08A	.725A	1.45A	2.9A	.84A	1.68A	3.37A	1.29A	2.58A	5.17A
Length:	18"			24"			30"			36"			48"			64"		
Height:	5"			5"			5"			5"			5"			5"		
Width:	9"		14"	9"		14"	9"		14"	9"		14"	9"		14"	9"		14"
Lamp Quantity:	1	2	4	1	2	4	1	2	4	1	2	4	1	2	4	1	2	4
Lamp PN#:	05-0687			05-0686			05-0685			05-1060-R			05-0576			05-0690		
Power (W) ② Consumption:	42	84	168	47.2	94.4	188.8	62.4	124.8	249.6	87	174	348	100.8	201.6	403.2	155	310	620
Ultraviolet Output:③(W)	11.5	23	46	17	34	68	23	46	92	28	56	112	40	80	160	54	108	216
Effective Life: (Hrs)	13,000			13,000			13,000			13,000			13,000			13,000		

① 230v 50Hz fixtures are available. Consult Factory with voltage requirements.

② Wattage is lamp watts only and does not include ballast loss.

③ Ultraviolet output at 254nm at 100 hours and 80°F (approximate).

All specifications, dimensional data, etc. are approximate and subject to change without notice.

REPLACEMENT PARTS

Table 3 – Replacement Parts

Model:	STER-L-RAY® Germicidal Lamp		Surelite™ 120v Ballast		Surelite™ 230v Ballast	
	Part NO.	QTY	Part NO.	QTY	Part NO.	QTY
RRD12-1S	05-1500-R	1	10-0137	1	10-0136	1
RRD12-2S		2		2		2
RRD12-4S		4		4		4
RRD18-1S	05-1340-R	1	10-0137	1	10-0136	1
RRD18-2S		2		2		2
RRD18-4S		4		4		4
RRD24-1S	05-1348-R	1	10-0137	1	10-0136	1
RRD24-2S		2		2		2
RRD24-4S		4		4		4
RRD30-1S	05-1352-R	1	10-0137	1	10-0136	1
RRD30-2S		2		2		2
RRD30-4S		4		4		4
RRD36-1S	05-1343-R	1	10-0137	1	10-0136	1
RRD36-2S		2		2		2
RRD36-4S		4		4		4
RRD48-1S	05-1334-R	1	10-0137	1	10-0136	1
RRD48-2S		2		2		2
RRD48-4S		4		4		4
RRD64-1S	05-1338A-R	1	10-0091	1	10-0127	1
RRD64-2S		2		2		2
RRD64-4S		4		4		4

Model:	STER-L-RAY® Germicidal Lamp		Surelite™ 120v Ballast		Surelite™ 230v Ballast	
	Part NO.	QTY	Part NO.	QTY	Part NO.	QTY
RRDHO18-1S	05-0687	1	10-0091	1	10-0127	1
RRDHO18-2S		2		2		2
RRDHO18-4S		4		4		4
RRDHO24-1S	05-0686	1	10-0091	1	10-0127	1
RRDHO24-2S		2		2		2
RRDHO24-4S		4		4		4
RRDHO30-1S	05-0685	1	10-0091	1	10-0127	1
RRDHO30-2S		2		2		2
RRDHO30-4S		4		4		4
RRDHO36-1S	05-1060-R	1	10-0091	1	10-0127	1
RRDHO36-2S		2		2		2
RRDHO36-4S		4		4		4
RRDHO48-1S	05-0576	1	10-0091	1	10-0127	1
RRDHO48-2S		2		2		2
RRDHO48-4S		4		4		4
RRDHO64-1S	05-0690	1	10-0231*	1	10-0231*	1
RRDHO64-2S		2		2		2
RRDHO64-4S		4		—		—

* 2-Lamp Multi-volt Ballast

Other replacement parts are available. Consult the factory with specific requirements.

All specifications, dimensional data, etc. are approximate and subject to change without notice.

USER ASSISTANCE

Atlantic Ultraviolet Corporation® makes every effort to ensure that the **Sani-Ray®** Germicidal Ultraviolet Recessed Fixture is a product of superior quality and workmanship. This manual describes the installation, operation and maintenance of the **Sani-Ray®** Germicidal Ultraviolet Recessed Fixture.

Please read and become familiar with the contents of this manual before installing or using this unit. If after reading the manual you still have questions, or concerns, regarding the installation or use of this unit, contact our offices, weekdays between 8:30 am and 5:00 pm Eastern Time, at:

Atlantic Ultraviolet Corporation®
375 Marcus Boulevard
Hauppauge, New York, 11788
Tel: (631) 273-0500
Fax: (631) 273-0771
Email: Sales@AtlanticUV.com
Shop: AtlanticUltraviolet.com
Learn More: Ultraviolet.com

PATENT NOTICE

No attempt has been made to determine the patent status of applications illustrated or described in this publication. Inclusion in this publication of any design or method of use, which may be patented, is not to be construed as promoting or sanctioning unauthorized use.

WARRANTY & PRODUCT REGISTRATION

We warrant this product to the original owner to be free from defects in material and workmanship when installed in accordance with Atlantic Ultraviolet Corporation® specifications for a period of time as follows:

UV Water Purifier Chambers – Type 316 stainless steel chambers will have a Twelve (12) year Limited Warranty on the stainless steel chamber, from the date of original purchase while the Type 304 stainless steel chambers will have a Six (6) year Limited Warranty on the stainless steel chamber.

UV Air Disinfection Housing – Three (3) year Limited Warranty on the metal housing, from the date of original purchase.

Ballasts – Three (3) year Limited Warranty, from the date of original purchase.

UV Lamps, Monitoring Devices, Optional Accessories, and Other Parts – One (1) year Limited Warranty from the date of original purchase.

Within the warranty period we shall repair or replace such products, which are returned to us with shipping charges prepaid and which are determined by us to be defective. This warranty will not apply to any product, which has been subjected to misuse, negligence or accident; or misapplied; or modified; or repaired by unauthorized person; or improperly installed. Warranty will be null and void if any of the product's original labels are removed. This Limited warranty excludes the cost of labor.

The Buyer shall inspect the product promptly after receipt and shall notify us at our main office in writing of claims, including claims of breach of warranty, within thirty (30) days after the Buyer discovers or should have discovered the facts upon which the claim is based. Failure of the Buyer to give written notice of a claim within the time period shall be deemed to be a waiver of such claim.

The provisions of the above warranty are our sole obligation and exclude all other remedies or warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose, whether or not purposes or specifications are described herein. We further disclaim any responsibility whatsoever to the customer, or to any person for injury to person, damage to, or loss of property or value caused by any product which has been subjected to misuse, negligence, accident; or modified or repaired by unauthorized persons; or improperly installed.

Under no circumstances shall the Company be liable for any incidental, consequential or special damages; losses or expenses arising from the contract for this product, or in connection with the use of, or inability to use, our product for any purpose whatsoever.

Be sure to register your product and validate purchase within 30 days –registration is simple and will take less than 2 minutes to do.

NOTE – failure to register your purchase may jeopardize warranty.

Go to AtlanticUltraviolet.com and scroll down to the bottom of the page, under “Trust” click the “Warranty Registration Form”, complete and click “Submit”. Or click on “Warranty Registration PDF” to download the warranty registration card as a PDF, complete and mail to us at 375 Marcus Boulevard, Hauppauge, NY 11788, or simply fax to (631) 273-0771. If you prefer to register by phone, please call (631) 273-0500 and our customer service staff will be glad to assist you.

For your convenience, record the following information below. The model and serial number can be found on a label located on the **Sani-Ray®** Germicidal Ultraviolet Recessed Fixture. Keep this manual, along with proof of purchase, handy when contacting our offices.

Purchased From:	Date:
Model:	Serial No.: