

# GENERAL INSTALLATION INSTRUCTIONS

## MODEL RLM™ S/S (Small Systems)



**CAUTION! Never Expose Eyes or Skin to UV-C - Read all Materials before Starting**

### SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your supplier for information or assistance. The qualified installer or agency must use factory kits or accessories when installing this product. Refer to the individual instructions packaged with kits or accessories when installing them. Follow all safety codes, wear safety glasses and work gloves. Read all instructions thoroughly and follow any warnings or cautions attached to any accessed area. Consult local building codes and the National Electrical Code (NEC) for all applicable requirements.

Understand the signal words DANGER, WARNING or CAUTION. These words are universally used for overall safety. DANGER identifies the most serious hazards, which will result in severe personal injury or death. WARNING signifies hazards, which could result in personal injury or death. CAUTION is used to identify unsafe practices, which would result in minor personal injury or product and property damage.



**WARNING:** Before installing or servicing this unit, turn off all power, there may be more than one (1) switch.

#### General:

1. RLM Fixtures can be used to bathe surfaces, the air or both with UV-C energy. For surfaces locate the RLM at known growth areas such as the coil and drain pan first, then other moist areas around humidifiers, etc. They can also be placed in return, supply and mixed air plenums or any combination of locations.
2. Check first for power availability, radiometer orientation (if used, not provided) and probable service accesses.
3. Reflecting UV-C energy within a target cavity increases its fluence and overall effectiveness. Therefore, where possible cover all likely reflection sites with UV-C reflective materials (e.g. aluminum tape) to reduce any shadowing and to increase the flux density of UV-C energy.

#### Installation (for metal plenums only):

1. Consult all applicable codes before installing. Check fixture label(s) for the correct power requirements and supply the correct voltage from a suitable, protected (fused or breaker), and grounded power source.



**CAUTION:** Using other than labeled voltages will void product warranty and may do additional damage to the entire system. Fixtures should be operated continuously to avoid growth of mold and bacteria under optimum conditions (AHU off).

2. Power must also be switched at all install access points with a properly rated, SPST interlock switch to completely de-energize the assembly when its install location is accessed. Accesses are to have signs in appropriate languages alerting maintenance personnel to the possible hazard of looking at, or exposing skin to UVC energy (English label(s) provided). Any access may be equipped with a glass or Lexan® view port to view the lamps. Common glass or Lexan® will block (absorb) UV-C energy.
3. UV-C energy may damage other plastics. Protect suspect items with known UV-C resistant materials (e.g. aluminum tape) when they are in "line of sight" of UV-C energy.
4. Determine the most desirable UV-C lamp location for the intended use and then its power supply. Note: the power supply may be mounted inside or outside of the target cavity.
5. Use the spacing table below to reveal the ideal distance between lamp clamps, and then mount them using the provided self-drilling screws. Lamp clamps may be mounted to any surface that addresses the intended cavity site. Note: Non-invasive magnetic Lamp-clamps are available, and may be more convenient for the intended install.

Nominal Lamp Length	Distance between Lamp clamps
12" (long) RLM UVC Lamp	Approximately 10"
17" (long) RLM UVC Lamp	Approximately 15"
22" (long) RLM UVC Lamp	Approximately 20"
33" (long) RLM UVC Lamp	Approximately 31.5"

**Safety Note: Metal Lamp clamps should not be attached to the “glass” portion of the lamp. LampHolsters™ can be arrange to hold lamp at any point on the lamp surface**

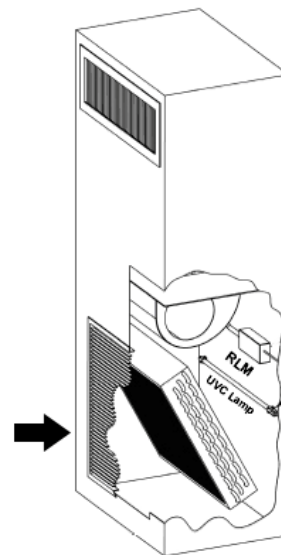
Make sure each assembly has sufficient “loom” length for the intended install (RLM 12 comes with a 36” lamp loom. The RLM 17, 22 & 33 have 5’ and 20’ loom options that can be cut to size required). Mount the RLM power supply in best location using two self-drilling screws (provided).

**Connecting Power:**

1. Read fixture label power requirements – sum the power requirements for all assemblies associated with the install and install in accordance National and local codes.
2. All power-in wire gauge and switch ratings must be in accordance with applicable codes. Power must also be switched at all install access points with a properly rated, SPST interlock switch to completely de-energize the assembly when its install location is accessed.
3. Apply Door Warning Labels on all access doors/ports/panels as indicated above.

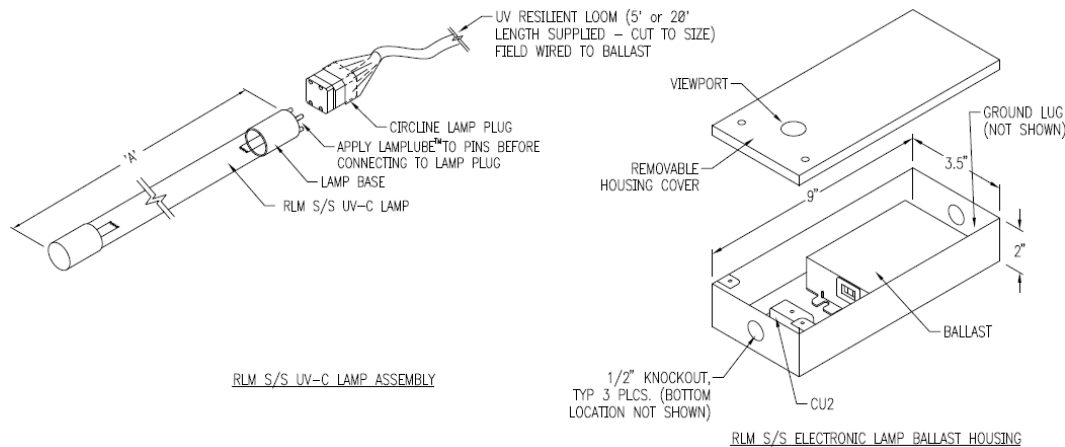
**Clean all lamps**

1. Before installation, lamps should be cleaned using 99% isopropyl alcohol and a lint free cloth. If using a UV Resources' EncapsuLamp™- it is not necessary to clean the surface. Then install lamp by grasping each non-glass end with the thumb and index fingers. Carefully push lamp ends into previously mounted lamp clamps.
2. Attach the loom to the lamp by firmly pushing the 4 port connector onto the 4 pins on the lamp end.



**RLM Small System Installation Example**

**Power Ratings:**



**RLM S/S Accessories**

PARTS LIST				
'A' DIM	QTY	MODEL#	PART #	DESCRIPTION
12"		RLM-12-SO-120-277	55823551	RLM S/S 12" SINGLE ENDED - STANDARD OUTPUT LAMP *
17"		RLM-17-SO-120-277	55833551	RLM S/S 17" SINGLE ENDED - STANDARD OUTPUT LAMP *
22"		RLM-22-SO-120-277	55843551	RLM S/S 22" SINGLE ENDED - STANDARD OUTPUT LAMP *
33"		RLM-33-SO-120-277	55863551	RLM S/S 33" SINGLE ENDED - STANDARD OUTPUT LAMP *
-		RLM-5-LOOM-KIT	55000015	RLM LOOM KIT-5' PLENUM RATED WIRE W/ 1 CIRCLINE PLUG
-		RLM-20-LOOM-KIT-LH	55000020	RLM LOOM KIT-20' PLENUM RATED WIRE W/ LAMPHOLDER (BKT AND CLIP)

\* = INCLUDES RLM INSTALLATION KIT & 1 LAMP, REQUIRES 1 RLM LOOM KIT

**Maintenance:**

The intensity of the ultraviolet energy emitted from the UV lamps is dependent on the cleanliness and lamp age. The surface of the lamp should be kept as clean as possible for optimum intensity. Depending on the filtration level of the HVAC system and the general hygiene of the building, periodic cleaning may be necessary. Before attempting any maintenance procedures, always follow all warnings and cautions as detailed in this maintenance section.

**Replacing the Lamps**

Ultraviolet lamps should be replaced after 9,000 hours of use (annually). Replacement lamps must be the specific size and wattage as originally supplied from the factory.

**Note:** Although the lights may continue to generate a characteristic blue glow beyond 9,000 operating hours, the ultraviolet radiation emitted by the bulbs degrades over time and will no longer provide the intended benefit.

**Disposal of Lamps**

UV lamps, like fluorescent lamps, contain mercury, which is a regulated hazardous waste. The disposal requirements for hazardous wastes are determined by local, state and federal guidelines. Check all regulations before disposing of bulbs to assure you have met all requirements.

**Installation Notes:**

## EQUIPMENT WARRANTY

UV Resources™ (UVR) warrants to the original buyer that its Products shall be free from defects in material or workmanship under normal use and service for the periods of time set forth below. This warranty is contingent upon proper use of Products and will not apply if adjustment, repair or parts replacement is required because of an accident, unusual physical, electrical or electro-mechanical stress, neglect, misuse, failure of electric power, humidity control, transportation, unauthorized repair actions, or not installed or maintained in accordance with UVRs' specifications hereunder, or where Product serial numbers have been altered, defaced, or removed. UVRs' obligation under this warranty shall not arise until the Purchaser of the Product returns the defective part to UVR. This warranty is limited to the repair and/or replacement of parts. This warranty does not cover any labor or subsequent damage incurred as the result of Product failure or indirectly arising from the design, construction, installation, servicing, or operation of Products. UVR and its resellers' liability under this warranty shall in no event exceed the cost of goods sold under the original sale contract.

Under the conditions specified above, UV Resources warrants all Product fixtures for a period of three (5) years from date of purchase and all lamps for a period of 12 months from date of installation provided lamps are installed within 3 months from date of purchase. Buyer must provide proof of purchase. This is UVRs' sole warranty. No warranties are extended beyond those described herein and it is expressly agreed that this warranty will be in lieu of all warranties of fitness and merchantability. UVR neither assumes, nor authorizes any person to assume for it, any obligation in connection with the Products. Buyer shall not return to UVR any allegedly defective goods without UVRs' prior written authorization. This warranty may not be assigned or transferred.

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