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## THANK YOU

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Thank you for purchasing Uvia Lite! Before installing and operating this device, congratulations are in order: your recreational vehicle is about to have patented, state-of-the-art air purification that is also environmentally friendly!

Be sure to read these instructions completely and carefully to familiarize yourself with Uvia Lite’s features & functionality.

- **If You Need Assistance** -- Contact Uvia Lite Customer Service at (540) 362-9636 Monday to Friday between 8 AM and 5 PM ET for service-related issues.
- **To the Installer:**
  - A trained and qualified professional must install this device and test it before the Recreational Vehicle owner puts it into use.
  - Read all installation instructions in this manual before installing this device. You must install the Uvia Lite device according to the exact instructions in this manual. Proper installation is the responsibility of the installer.
  - When the installation is complete, leave this manual in the RV in which it is installed or give the manual directly to the RV owner.
- **To the Recreational Vehicle Owner:**
  - Read this manual before using Uvia Lite in your recreational vehicle to understand all safety, operation, and maintenance issues for this device.
  - Keep this manual for future reference.
  - Ensure that your Uvia Lite is installed by a trained and qualified professional.



## IMPORTANT SAFETY INFORMATION



- **General Safety Information:**

- UVia Lite shell and ballast surface may reach temperatures of up to 120°F during operation, especially in warm weather.
- Do not block airflow through the device, as this prevents it from functioning properly.

- **Safety Facts and Information regarding ultra-violet (UV) light:**

- Ultra-violet light occurs naturally in sunlight, and life on earth is exposed to it every day.
- UV light intensity from artificial sources may exceed the intensity of natural exposure from the Sun.
- Do not open Uvia Lite enclosure unless the unit is disconnected from its power source.
- Do NOT stare directly at the Uvia Lite lamp while it is energized.
- Prolonged UV light exposure can cause a variety of skin and eye injuries (e.g., sunburn, photokeratitis). Symptoms may occur 4-24 hours after exposure; however, damage can occur to eyes and skin within minutes of exposure.
- UV lamps contain small amounts of mercury - dispose of lamps in accordance with local environmental regulations. For more information visit [www.lamprecycle.org](http://www.lamprecycle.org)



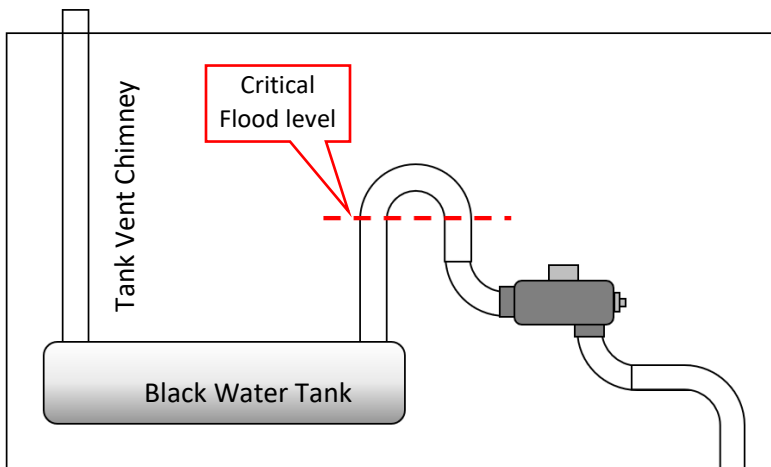
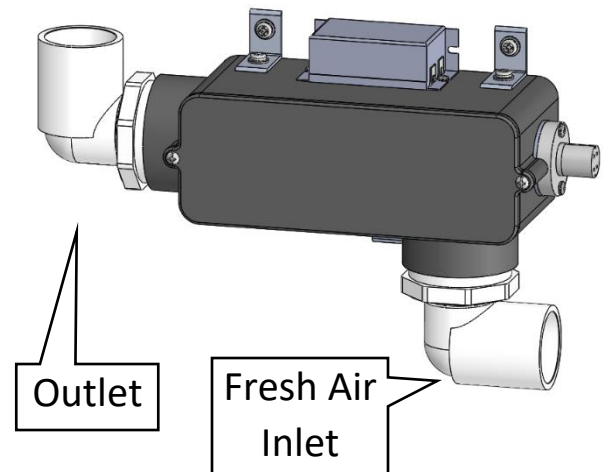
- **Safety Facts and Information regarding Ozone:**

- Ozone – sometimes called activated oxygen – is a naturally-occurring substance comprised of three atoms of oxygen. (O<sub>3</sub>)
- Ozone is produced in nature when the ultraviolet rays of the sun strike oxygen molecules. When this occurs high in the atmosphere, it creates what we know as the “ozone layer.” Because the ozone molecules absorb the sun’s energy, they protect life on earth from the damaging and potentially cancer-causing rays of the sun.
- Natural processes also produce ozone near the earth’s surface, especially during a thunderstorm, when lightning flashes. Ozone is a primary component of the sweet, fresh smell after a thunderstorm.
- Ozone is a natural purifier. Ozone destroys viruses, bacteria, and virtually all other forms of microbes; it also breaks down chemical contaminants without the use of other chemicals or additives of any kind!
- Ozone is a scientifically known oxidizer. Note: Ozone does NOT explode when exposed to a flame.
- High levels of ozone can be a respiratory irritant and can cause injury to the nose, throat, and lungs over prolonged exposure times.
- Ozone concentration levels you should know:
  - The OSHA permitted exposure level (PEL) for ozone in confined spaces is
    - 0.2 ppm for 2 hours of continuous exposure,
    - 0.1 ppm for 8 hours of continuous exposure.
  - The average person can detect ozone levels as low as 0.003 parts per million (ppm). Being able to smell ozone does NOT mean that hazardous levels of ozone are present.
- Uvia Lite generates Ozone at a rate of about 6-10 ppm, but when installed and used properly, this ozone is not harmful to humans because:
  - It is sealed and isolated from the living space of the recreational vehicle,
  - it reverts quickly to normal oxygen as it breaks down the organic and odiferous molecules in the RV’s Drain/Waste/Vent (DWV) system, and
  - it has completely reverted to oxygen by the time it reaches the chimney vent exit of the RV.



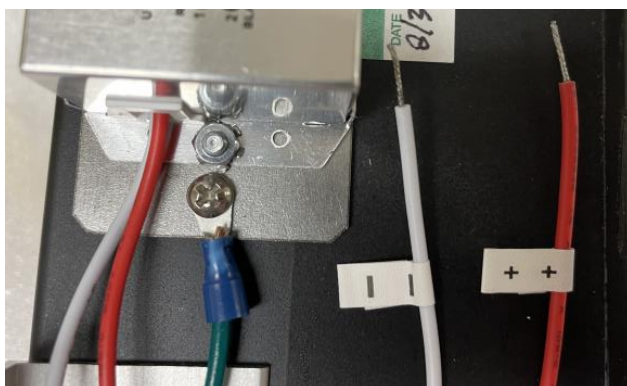
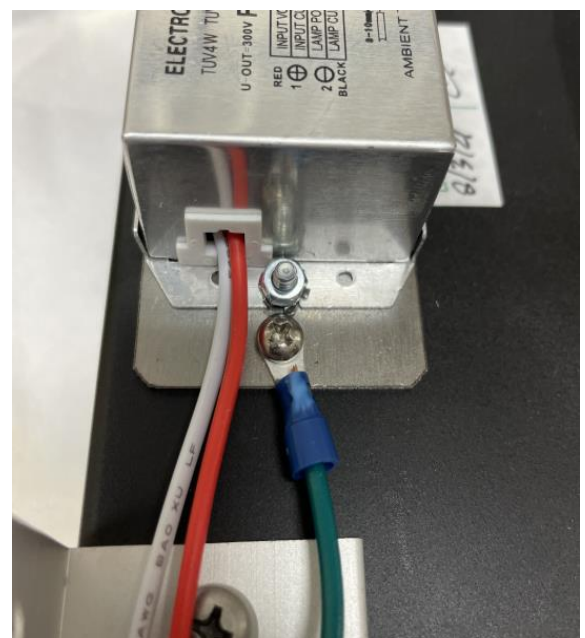
# INSTALLATION

- **Mounting:** Install the Uvia Lite unit on a wall, either horizontally or vertically, such that the “Fresh Air Inlet” is below the Outlet (for example as shown here. *Note: device wires not shown.*)
- **Plumbing:**
  - Plumb the fresh air inlet with 1-¼” PVC pipe or hose and included fittings through bottom of the recreational vehicle.
  - Plumb the outlet with 1-¼” PVC pipe or hose and included fittings to **rise vertically to a point not less than one pipe diameter above the flood level** of the lowest fixture connected to the drainage system in the recreational vehicle as shown in the pictures below.
  - **Use standard pipe sealant on all fitting joints.**




*Want to use alternative materials in your UVia Lite installation? Call us to confirm that these alternatives will be appropriate for long-term use.*

- **Electrical:** Splice the Uvia Lite’s power connection wires (shown in the picture on the right) into the 12 VDC power system of the recreational vehicle as follows:
  - White wire (labelled “ - ”) to ground,
  - Red wire (labelled “ + ”) to the power source,
  - Green wire to ground, and
  - Ensure the power lead is connected to a fused 5-Amp circuit



## OPERATION



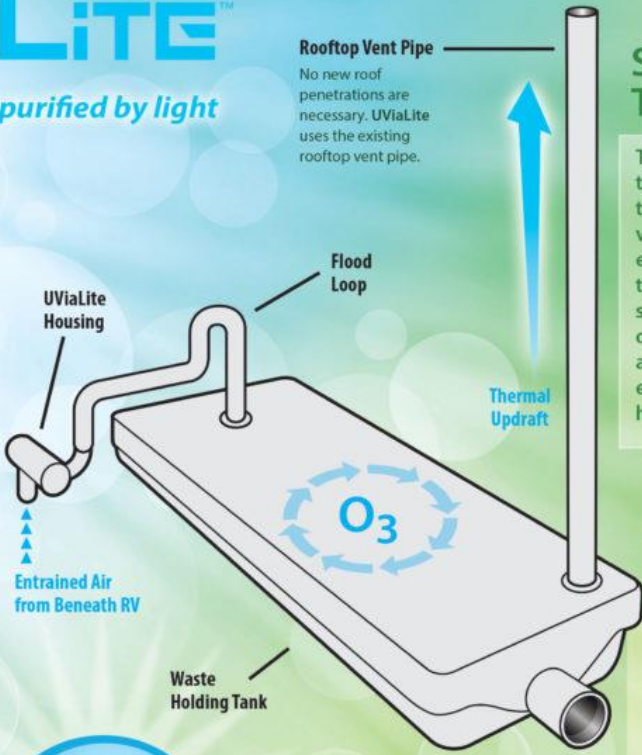
# UViaLITE™

Air for the road, *purified by light*

### The UViaLite Air Purification Process

- 1) Sunlight heats the air in the rooftop vent pipe creating a temperature differential between it and the cooler air beneath the RV.
- 2) The temperature differential creates a thermal updraft in the rooftop vent pipe which applies suction to the holding tank and UViaLite housing.
- 3) The suction entrains cooler air from beneath the RV into the UViaLite housing, producing activated oxygen as the air passes by the UV lamp.
- 4) This system of natural circulation transports a constant supply of activated oxygen into the waste holding tanks, purifying the air inside.
- 5) Odor and germ-free air is exhausted from the rooftop vent pipe.

NOTE: Even when sunlight is not available, the heat generated by the UV lamp is sufficient to perpetuate the natural circulation required for normal system operation.



**Rooftop Vent Pipe**  
No new roof penetrations are necessary. UViaLite uses the existing rooftop vent pipe.

**Thermal Updraft**

**UViaLite Housing**

**Flood Loop**


**Waste Holding Tank**

**Entrained Air from Beneath RV**


**O<sub>3</sub>**

### Scientifically Tested

The UViaLite engineering team uses specialized testing equipment to validate the system's effectiveness, ensuring that O<sub>3</sub> concentrations are sufficient to neutralize odors and kill surface and airborne pathogens in even the largest RV waste holding tanks.



High-tech gas sensors are used to measure O<sub>3</sub> concentrations at critical locations in the holding tanks. The UViaLite System is proven to effectively neutralize harmful pathogens and leave air smelling fresh and clean.



Activated Oxygen (O<sub>3</sub>) is one of the most powerful cleaning agents known to man. The UViaLite System uses specially tuned UV lamps to generate O<sub>3</sub> and naturally circulate it through your waste holding tank and out the rooftop vent pipe. That means fresh, clean air for the duration of your RV trips, without the smell and hassle of chemicals.

- The Uvia Lite is intended to operate continuously while the recreational vehicle is in use, whether moving or parked.
- Deactivate power to the unit only when the RV is going into storage.

## TROUBLESHOOTING

The UV lamp emits a blue light when operating. That may be seen either by looking up the intake pipe or by partially removing the lid. If the Lamp is not emitting a blue light:

- a. Confirm that power source for unit is activated, has an intact fuse, and has sufficient voltage.
- b. Confirm that Lamp Connector is properly seated on prongs of Lamp,
- c. Confirm the integrity of the wire connections to 12 VDC power circuit of the RV (polarity correct, etc.)
- d. Replace lamp and retest (see instructions below),
- e. Replace ballast and retest (see instructions below).




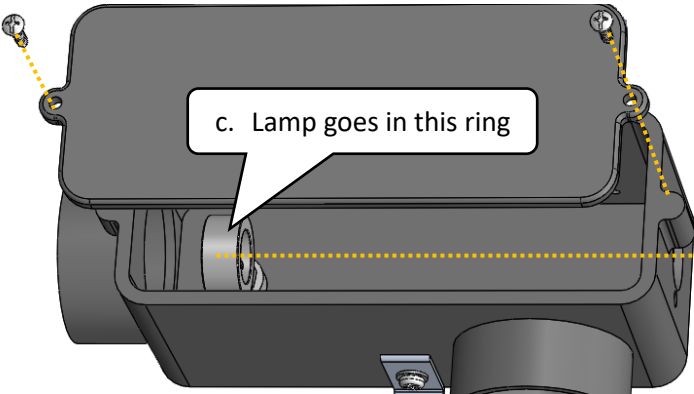
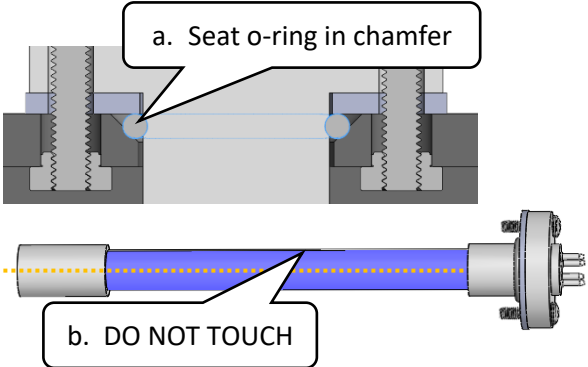
If Uvia Lite components are not functioning within the warranty period, contact Safety Step for replacements.



# MAINTENANCE

Please contact Safety Step [(540) 362-9636 or [uvialite@safetystep.net](mailto:uvialite@safetystep.net)] or your nearest participating RV dealer for parts.

The UV lamp should be replaced between 10,000 and 20,000 hours of operation (or every 12 to 24 months) as follows:

<p>1. Disconnect unit from electrical power and remove connector from lamp</p> 	<p>2. Remove Lamp screws with a Phillips head screwdriver</p> 	<p>3. Remove Lamp, washer, and o-ring seal from the Uvia Lite enclosure.</p> 
<p>4. Insert the new Lamp into the enclosure noting the following:</p> <ol style="list-style-type: none"> <li><u>Do NOT touch Glass Portion of Lamp with bare hands</u> (skin oils significantly reduce the life of the Lamp).</li> <li>Slide the lamp into the support ring inside the enclosure (Lid may be removed to do this, but MUST be reassembled according to instructions below).</li> <li>Seat Lamp O-ring properly in the chamfered hole for the lamp to seal the enclosure.</li> </ol>   <p>5. Hand tighten Lamp screws with a screwdriver, &amp; reconnect Lamp connector (See pictures for Steps 1 &amp; 2 above).</p>		



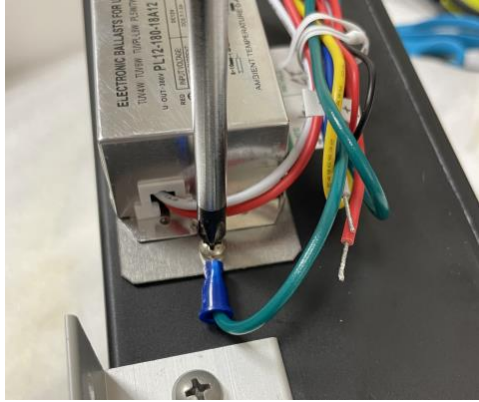


**If the Lid is EVER removed, here is how to reassemble it to the enclosure:**

1. Scrape off old clear Silicone sealant, and
2. Apply new clear silicone sealant (shown below) all around edge of lid and reassemble using mounting screws.
3. Note: Allow to cure for 20 minutes before activating unit.



**The Ballast can be replaced as needed as follows:**

<p>1. Disconnect unit from electrical power and disconnect Ballast input and grounding wires.</p> 	<p>2. Disconnect Lamp Connector.</p> 	<p>3. Loosen screws holding ballast onto the enclosure</p> 
<p>4. Assemble replacement Ballast with screws and screwdriver.</p>	<p>5. Reconnect Lamp Connector to Lamp</p>	<p>6. Reconnect Ballast power input wires to 12 VDC circuit of RV.</p>

