



## **CeraLux<sup>®</sup> Lamp Replacement Instructions**



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## **Instructions for Replacing CeraLux® Lamps into Heatsink/Module**

The following is a guide for replacing a CeraLux Ceramic Xenon Lamp in its associated aluminum heatsinks and nylon housing. The lamp shown is a typical B size body lamp (typical power range of 125-300 watts). Adherence to these steps will ensure proper thermal transfer and electrical connections.

### **CAUTION NOTES:**

1. All CeraLux lamps are under high pressure, safety glasses should be worn when handling lamps.
2. The rear of the lamp has a sharp pinch off seal. Care should be taken not to touch or damage this seal.
3. Take precautions not to touch the lamp's window. Remove all fingerprints with alcohol and wipes prior to use.
4. Following these instructions will lead to the best performance and life from your CeraLux lamp. Should you have any questions or concerns contact our facility directly for personal assistance.

Material required: (all items are available from LuxteL)

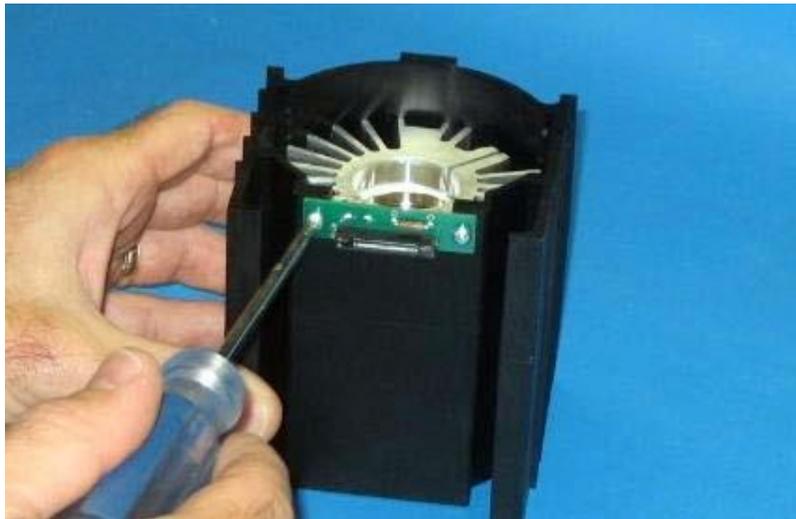
1. CeraLux lamp
2. anode heat sink
3. cathode heat sink
4. cooling ring (fits onto cathode end of lamp) (optional cooling rings with filters are available)
5. spring clips, 3 required
6. assembly housing
7. anode connector (with 10-32 UNF, large male threads)
8. cathode connector (with 8-32 UNF, small male threads)
9. thermal conductive grease
10. timer assembly with mounting hardware (optional)

Tools required:

1. slotted screwdriver
2. phillips screwdriver
3. cotton or foam tip applicator
4. cotton wipe or equivalent
5. finger cots, vinyl gloves or equivalent (optional)



**Typical Lamp Module Assembly.**



Step 1: If replacing timer assembly, remove the two 4-40 screws and set them aside.



Step 2: Remove both brass electrical connectors and set aside.



Step 3: Slide lamp and heatsinks out of module.



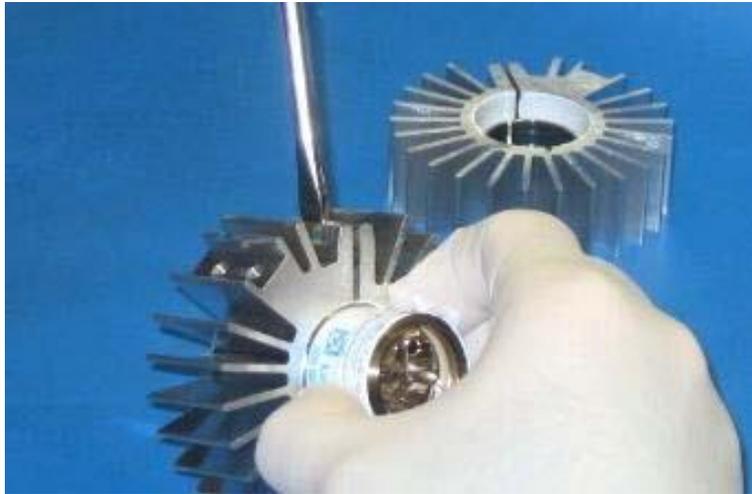
Step 4: Remove spring clips from heatsinks by using a slotted screwdriver. Set spring clips aside. Finger cots/ latex or vinyl gloves can be worn to avoid getting thermal compound on hands.



Step 5: Cathode heatsink being removed. If the cooling ring which mounts around the window stays attached to the lamp, remove it and set aside. You may choose to leave the cooling ring in the cathode heatsink, but must assure that the new lamp is fully seated when installed.



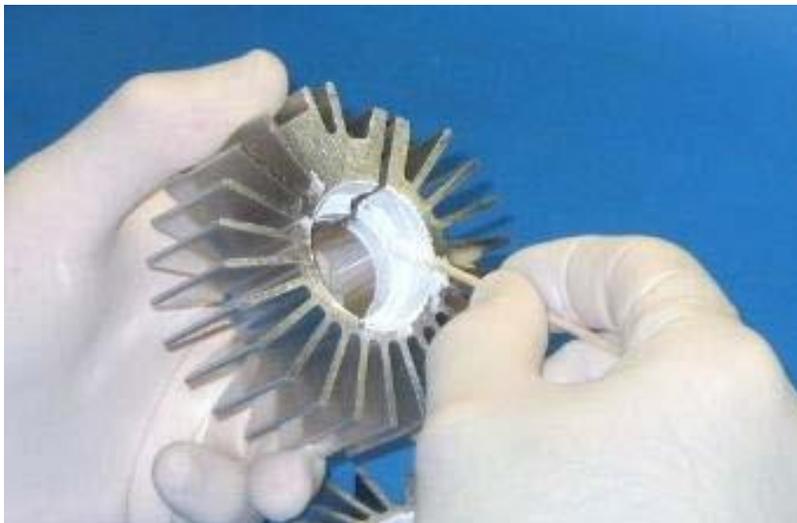
Step 6: Spring clips being removed from anode heat sink.



Step 7: If needed, the heatsinks may be pried apart slightly with the use of a slotted screwdriver. Care should be taken not damage or mark any part of the heatsinks which will contact the lamp or cooling ring.



Step 8: Remove old lamp from heatsink assemblies and set aside.



Step 9: Remove old and/or dried thermal compound from both heatsinks and apply new compound to areas that will contact lamp. A tube of thermal compound is supplied with each new lamp.



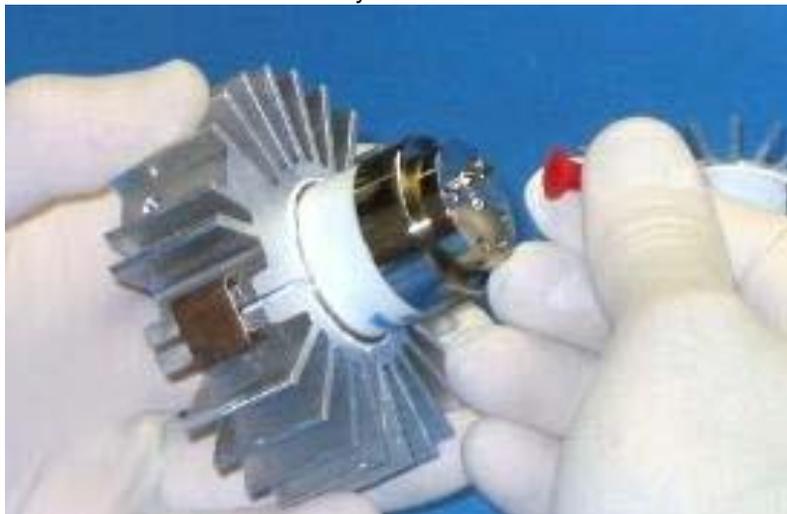
Step 10: Apply a thin layer of thermal compound to the outer band of the cathode end of the lamp. Apply compound to outer diameter of cooling ring (if not already seated in heatsink). Take care not to apply compound to the window or ceramic surfaces. Any compound should be removed with the use of alcohol and wipes.



Step 11: Insert the cathode end of the lamp into the cathode heatsink and rotate. Assure that the lamp is fully seated in the cooling ring and heatsink. Metal band of lamp should not be visible when properly seated.



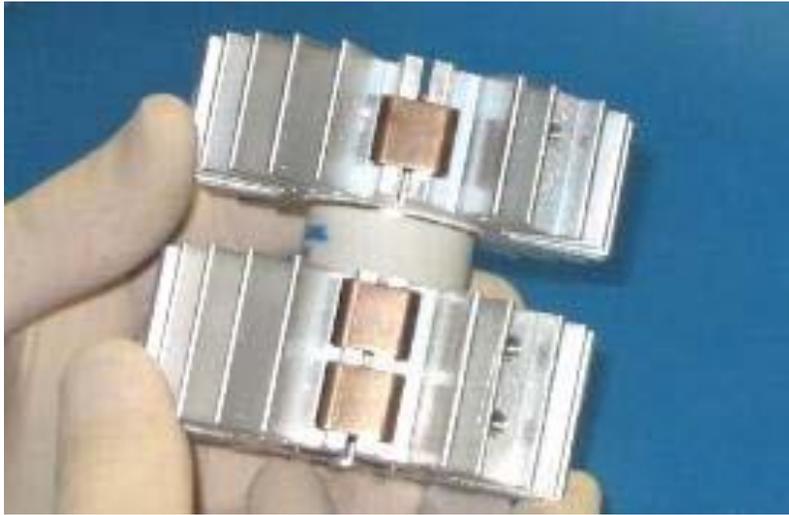
Step 12: Orientation of the lamp may occur at this time, if desired. Place one spring clip on cathode heatsink until fully seated.



Step 13: Remove the protective cap from pinch off seal. Care must be taken because the pinch off seal is sharp.



Step 14: Apply compound to the outer band and diameter of the anode base. Take care not to damage the pinch off seal.



Step 15: Insert the anode end of the lamp into the anode heatsink and rotate. Assure that the lamp is fully seated. Metal band of lamp should not be visible. Place two spring clips on anode heatsink until fully seated.



Step 16: Insert lamp with heatsinks into the housing assuring that the window/cathode end is facing the housing end with cut out that holds optional timer assembly.



Step 17: Insert brass connectors through housing and into heatsinks. Note that the 10-32 threaded connector goes into the anode/rear heatsink and the 8-32 threaded connector is for the front/cathode heatsink. Connectors may be secured tightly by hand. If tightened with a wrench, use a torque wrench and do not exceed 16 in-lbs.



Step 18: If using optional photodiode timer assembly, mount as shown with photodiode facing up and printed circuit board mounted from the bottom. Scaled hour meter is on opposite side of board.



Step 19: Align mounting holes in printed circuit board with threaded inserts in housing and secure with two 4-40 x 1/4" screws.



Step 20: Wipe any excess thermal compound or fingerprints from window. Use a clean wipe with alcohol if needed. Assembly is complete and ready for use.

## Safety and Handling

- Place lamps in the original packaging when not in use.
- Care must be taken due to the sharp pinch off tube on the rear of the lamp.
- CeraLux lamps are under high pressure at all times (during operation and non-use). Always wear protective eye wear when handling.
- During operation, the infra-red (IR) and ultra-violet (UV) radiation can cause skin and eye damage. Do not look directly into a lamp, get in the path of the output beam or touch the lamp while operating.

- Due to high operating temperatures, care should be taken if handling lamps after operation. Allow lamps to cool sufficiently.
- CeraLux lamps with “UV” suffixes are optimized for generation of output in the UV wavelengths. Extra care should be exercised when using lamps that produce UV radiation. UV blocking eye protection should be worn during lamp operation.
- UV lamps will produce toxic ozone due to the UV radiation below 242nm acting upon oxygen in air. To avoid ozone, an inert atmosphere should be used or select a non-UV lamp (filtered “F” series) if UV wavelengths are not needed.

### **Cooling**

- Proper cooling will provide optimum performance and extended life.
- Seal temperatures should not exceed 200E C. Forced air cooling should be used.
- Appropriate thermal and electrically conductive compounds should be used to promote improved thermal conduction between lamps and heat.

### **Disposal**

- Proper eye protection should be worn when handling lamps.
- Care must be taken due to the sharp pinch off tube on the rear of the lamp.
- When the lamp has cooled to room temperature, the internal pressure of the lamp may be relieved by firmly grasping the lamp and cutting or twisting the pinch off tube at the rear of the lamp with a pair of heavy pliers. The internal gas will be heard escaping through the tube opening. The lamp may now be disposed of in the normal trash.

### **Cleaning**

- The window of the lamp should be kept free of all fingerprints, thermal compound, etc. Wipe clean with lint free cloth and alcohol if needed.
- The ceramic body and all areas of the lamp that do not mate directly with heatsinks should be kept free of thermal compound.

Refer to safety section for additional instructions. Always allow lamps to cool and disconnect power sources to equipment before attempting any lamp or system maintenance.

<p>How do I dispose of a used lamp?</p>	<p>LuxteL CeraLux lamps contain no hazardous materials such as mercury or rare earth elements. Lamps may be disposed of safely once the internal pressure of xenon is released.</p> <p>To release internal pressure, do the following:</p> <ol style="list-style-type: none"> <li>1. Wear safety glasses.</li> <li>2. Firmly grasp the lamp and cut or twist the pinch off seal at the rear of the lamp. The gas will be heard escaping.</li> <li>3. The lamp may be disposed in the normal trash.</li> </ol>
<p>My lamp appears to be overheating.</p>	<p>If you are using accessories other than those provided by LuxteL, please refer to your OEM manuals.</p> <ol style="list-style-type: none"> <li>1. Assure lamp is properly seated in both heatsinks. The outermost metal bands will not be visible when seated in LuxteL heatsinks.</li> <li>2. Assure the cooling ring is being used and properly installed. Cooling rings are frequently disposed of by mistake. They can be recycled/used over.</li> <li>3. Assure thermal compound has been applied as detailed in this procedure.</li> <li>4. Assure thermal compound is not covering window of lamp. Any excess on lamp window should be removed and window cleaned with alcohol and wipes.</li> <li>5. Assure system fans are operating and do not have obstructed air flows.</li> <li>6. Check system operations of lamp current and voltage. Assure overpowering beyond the rated lamp power is not occurring.</li> </ol>
<p>My lamp does not ignite.</p>	<p>There are many factors that can affect the starting properties of a lamp. Some may be system related. Refer to OEM manuals as needed.</p> <p>Lamps will typically operate for more than 500 hours when operated properly and within rated power levels. Factors that affect the starting characteristics include number of ignitions, temperature during operation and system design.</p> <ol style="list-style-type: none"> <li>1. Check lamp and power supply electrical connections.</li> <li>2. Assure heat sink clips and module brass connectors are properly installed and tight.</li> <li>3. Inspect lamp for arcing. Arcing may result if cooling ring is not installed properly or thermal compound is not applied properly.</li> <li>4. Could be caused by low open circuit voltage/ignition voltage.</li> </ol>

<p>How do I know my lamp has gone to air? (seal failure)</p>	<p>There are some signs to indicate that a lamp has lost its hermetic integrity. If this occurs, the xenon gas will escape and render the lamp useless. Things to look for:</p> <ol style="list-style-type: none"> <li>1. Cloudy, white film on window reflector surface or both.</li> <li>2. Blackened appearance on reflector.</li> <li>3. Lamp will not ignite or run.</li> </ol> <p>Proper handling and use can diminish the possibility of this. Care should be taken not to damage the pinch off seal or over tighten the two outermost metal bands of the lamp. Do not apply excessive clamping force when mounting lamps in heatsinks. Enough force should be applied such that the lamp cannot be rotated.</p> <p>If a lamp is dropped and any metal component deformed, this could lead to improper installation or a direct lamp failure/leak.</p>
<p>Lamp flickering</p>	<p>A lamp may flicker slightly upon initial start up until thermal stabilization has taken place. Assure lamp is being operated at recommended current and under suitable conditions.</p>
<p>Low light output</p>	<p>Refer to system operator's manual.</p> <ol style="list-style-type: none"> <li>1. Lamp may be at end of life.</li> <li>2. Check for proper operating conditions (current, voltage).</li> <li>3. Check system optics.</li> </ol>



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