

**Please verify the contents of the packages!**  
**Please read instructions entirely before starting installation**

**Be sure power is turned off before installing or modifying the system**

**Call Tivoli, LLC tech support with questions**

**Caution:** Commercial Light String is designed to work with 120V AC current only. Use of any other power source will cause damage, shorten the life of the fixture and will void the warranty.

**Warning:** With any luminaire for any application, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injuries. This lighting system should be installed in accordance with NEC or CEC as applicable.

**Outdoor Installation**

**Warning:** When using outdoors (Filament Bulb only), basic safety precautions should always be followed to reduce the risk of fire, electrical shock and personal injury. Outdoor wet locations require outlets and circuits with Ground Fault Interrupter protection (GFCI). Extension cords rated for outdoor use must be used. Keep Receptacle Cover in place on outlet and do not connect or disconnect equipment when it is wet.



## IMPORTANT SAFETY INSTRUCTIONS

**Do not** secure Light String wire with staples or nails or place on sharp hooks or nails. Use appropriate mounting hooks designed for use with this product.

**Do not** let lamps rest on any wires.

**Do not** hang objects from light string wires or extension cord.

**Do not** use this product for other than its intended use.

**Do not** route Light String through walls, doorways, windows or building structures. Do not close doors or windows on product wire as damage will result.

**Do not** cover lamps with cloth, paper or any material that is not part of the product.

**Do not** install in enclosed spaces, such as soffits, cabinets or in ceilings.

**CAUTION:**

Do not use with extension cord near water or where water may accumulate.

Keep lamps at least 16 feet from pools and spas. Keep plugs and receptacles dry.

Disconnect power at source prior to replacing bulbs or servicing product in any way.

**Outdoor Use:** Only the Filament Bulb is rated for outdoor use.

**Do not exceed the maximum wattage of any socket (4W). Do not exceed the overall maximum wattage capacity (96W) when using and connecting Light String Sets. Refer to the following chart.**

Watts per Single Light String with ADAPT Light Engines and Globes	
<b>Total Wattage</b>	<b>Watts per single Light String (96W per 10A Circuit)</b>
<b>Filament (4W)</b>	
96W	1 Set (48' length)

Maximum Number of Connected Light Strings with ADAPT Light Engines and Globes	
<b>Total Wattage</b>	<b>Maximum Watts per single Light String (1440W max per 10A Circuit)</b>
<b>Filament (4W)</b>	
96W	15 Sets (48' length)

## Installation Instructions: Suspension Cable

### Hanger clip mount to Suspension Cable

Illuminate courtyards, streets or parks with festive lighting using Catenary Cable (**LS-CABLE-60**, **LS-CABLE 110**, **LS-CABLE 500** available separately). Each cable is a 1/8" dia. stainless steel aircraft cable. Attach each end of cable to structural support using Cable Locks (**LS-LOCK-4**) included with 60 and 110 foot Cable Kit or available separately. 500 foot cable is not sold with locks and must be ordered individually. Follow instructions carefully.

**NOTE:** Article 225.3(B) of the National Electrical Code states that all festoon lighting spans over 40 feet **MUST** be supported by messenger wire. The messenger wire shall be supported by strain insulators. The **LS-CABLE** options offered by Tivoli meet these requirements. Consult applicable local codes for installation.

**Step 1:** Attach eye bolts or other attaching hardware (by others) to structural supports to hang Catenary Cable (**LS-CABLE-60**, **LS-CABLE 110** or **LS-CABLE 500**). Catenary Cable is rated for hanging loads up to a maximum of 200 lbs. **This cable is rated for 880 lbs. of pulling tension.**

**Step 2:** Insert cable into upper hole in Cable Lock following the direction of the arrow on the side of the lock.

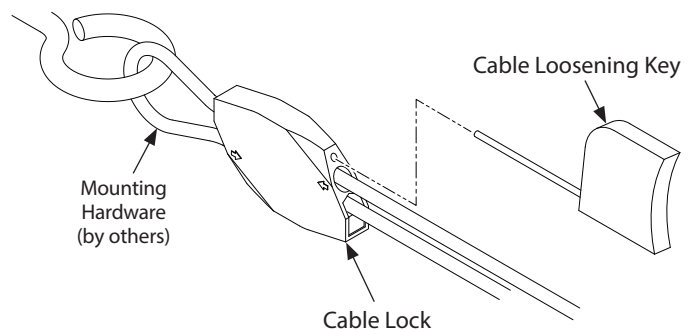
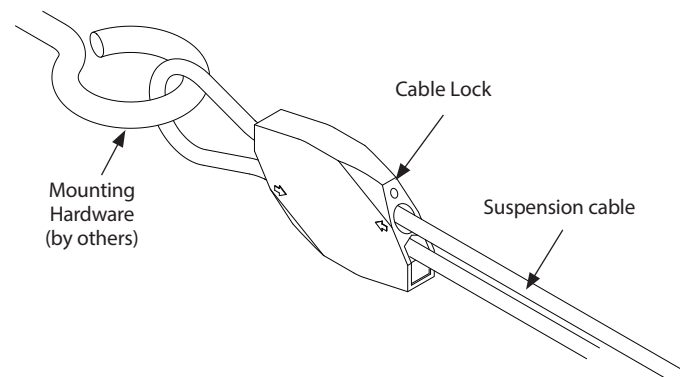
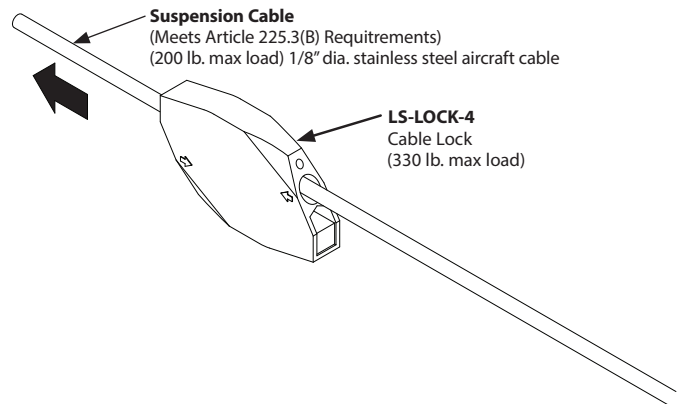
**Note:** These Cable Locks are rated at 200 lbs. maximum hanging weight.

**Step 3:** Loop Cable through Eye Bolt or other mounting hardware (by others) and insert the cable back into the lower hole of the Cable Lock, as shown.



**Step 4:** A Catenary Tensioning Tool (**LS-TT**) is available to help tighten the cable. **This tool is capable of applying 880 lbs. of tension.**

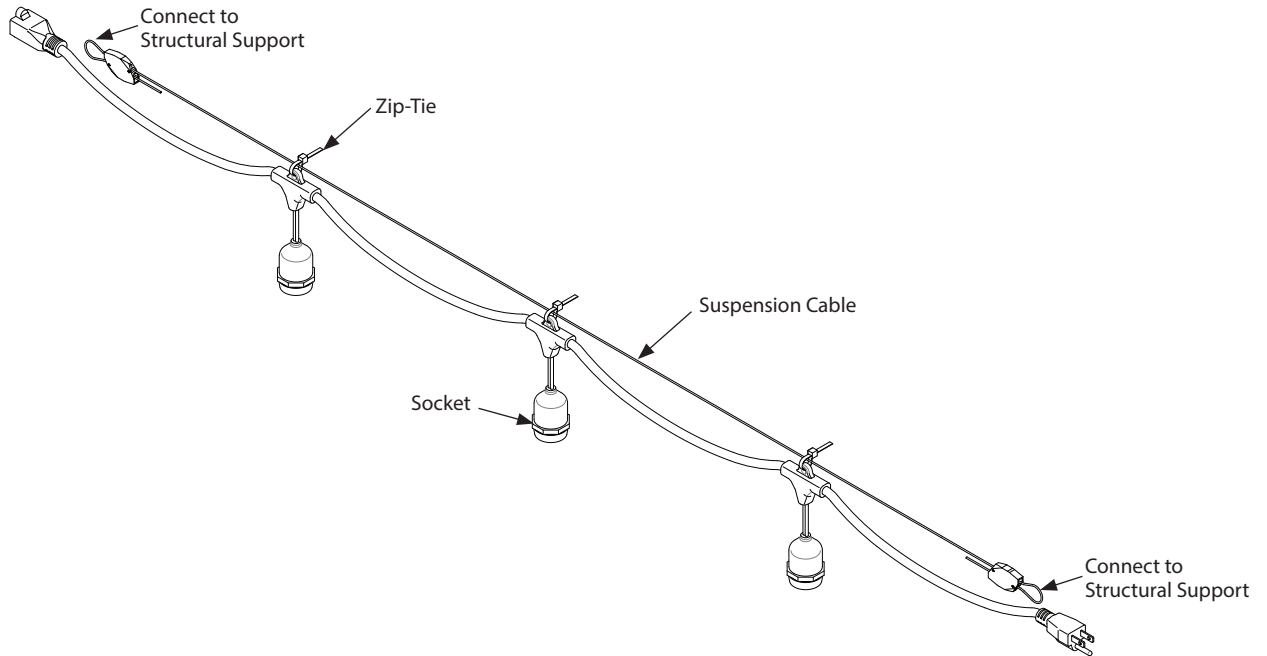
**Step 5:** To loosen Cable, insert Key (Included) into small hole above Cable Entry hole and press to release cable.



## Installation Instructions

### Installation with Suspension Cable

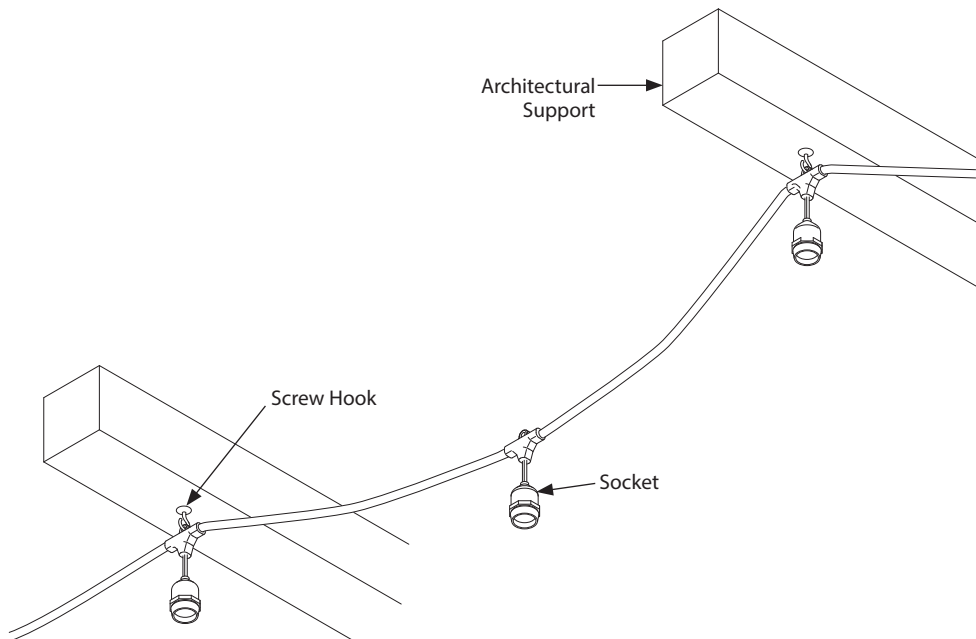
**Step 1.** With Suspension Cable securely attached, use Tie-Wraps to attach Light String Units to Cable.



### Installation on Structure

**Step 1:** Install Screw Hooks in solid structure. Hooks should be located not more than 24 feet apart.

**Step 2:** Connect corresponding sockets to the hooks. The remaining sockets will be unsupported, as shown.



## Installation Instructions: Optional Light Shades

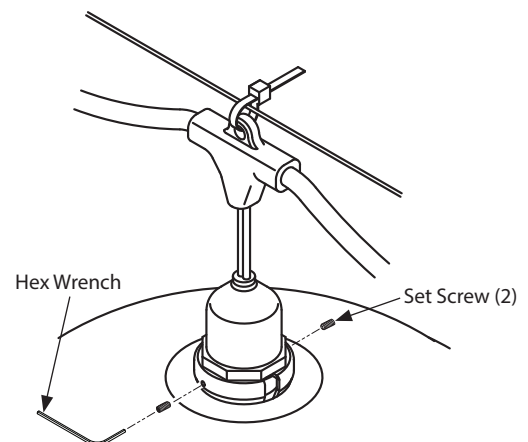
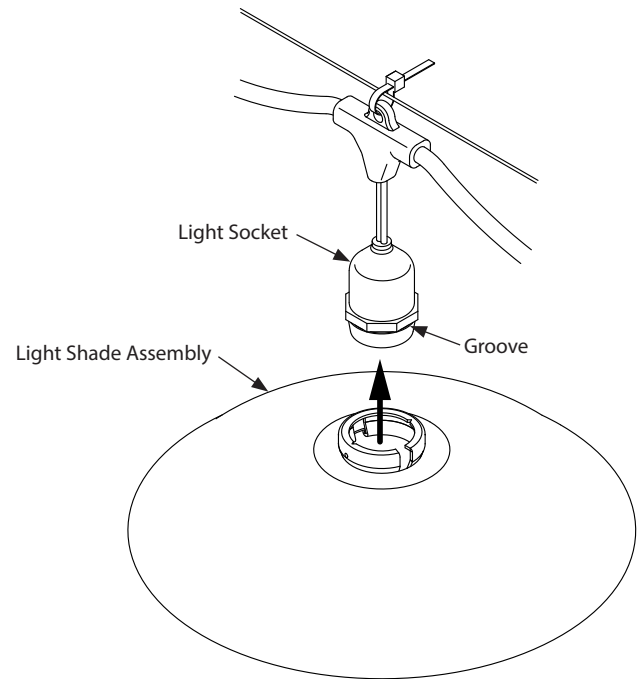
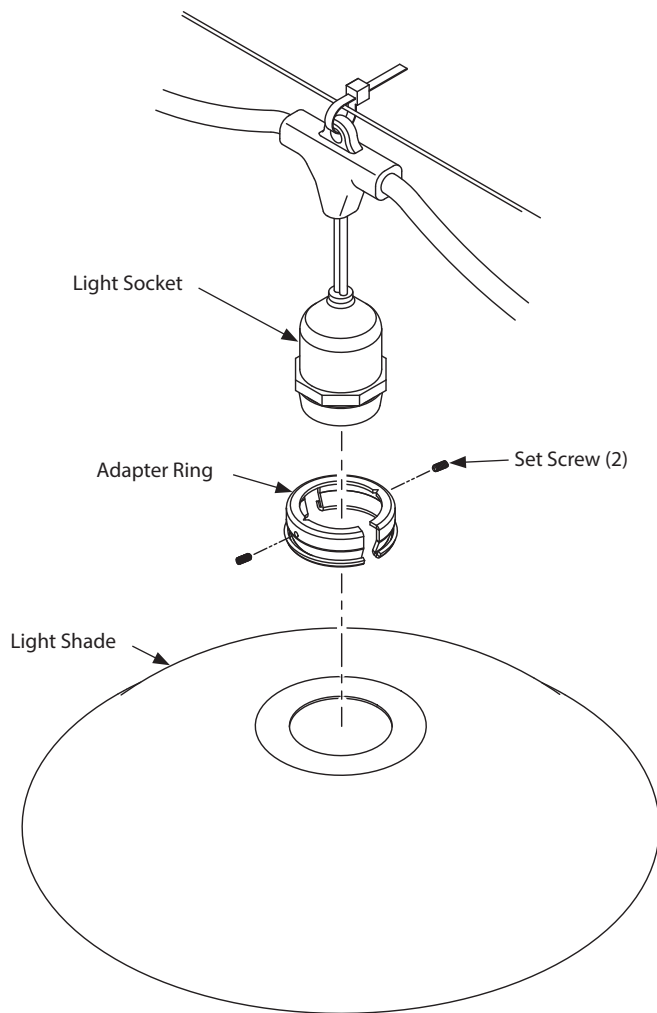
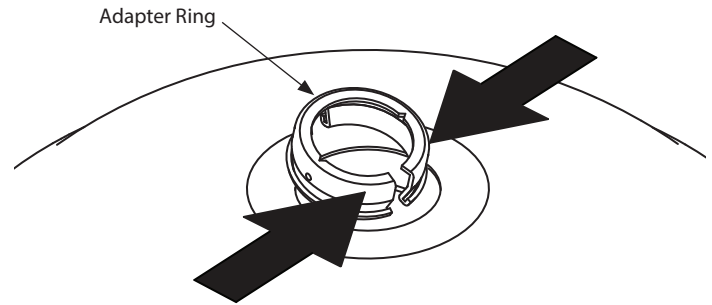
**Step 1:** Hang Light String as shown on Page 3.

**Step 2:** Insert Adapter Ring into Light Shade opening. Press the sides together and insert into Shade opening so the lip at the bottom of the Adapter Ring goes below the edge of the hole. Twist the Adapter Ring down into the hole.

**Step 3:** Hold the Light Socket and press the Adapter Ring (already installed on the shade) over the bottom of the Light socket and press the Adapter Ring onto the bottom of the Socket until it locks in place in the groove.

**Step 4:** Use Hex Wrench (included) to thread set screws through holes in collar and tighten to lock Shade assembly in place.

**Step 5:** Screw in Light Engines and Globes, as shown on Page 5.



## Installation Instructions: Light Engines and Globes

### Overview

Each Light String has 24 Sockets. When used with ADAPT Light Engines, the load per Light String is 96 watts. Connect 15 Sets maximum per 10 Amp circuit.

**Outdoor Use:** Only the Filament Light Engine is wet rated for outdoor use.

### Installation

**Step 1:** Before plugging in the Light String, screw a light engine into each socket. Do not overtighten.

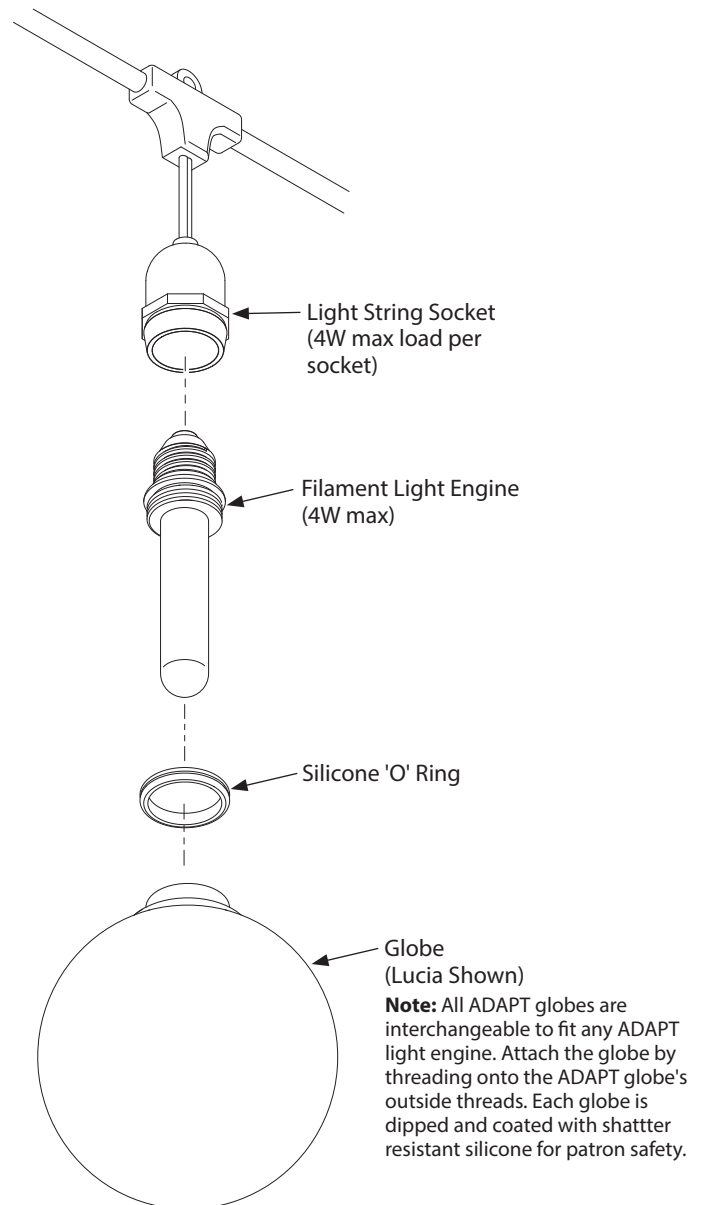
**Note:** An 'O' Ring should be pre-installed at the factory over the threads of the Filament Light Engine to keep water out. If the 'O' Ring is not already installed, stretch the 'O' Ring over the threads of the Filament Light Engine making sure the recess around the 'O' Ring faces out. Make sure the 'O' Ring is not twisted to ensure a water-tight seal. **Step 2:** The PVC Socket fits very tightly around the light engine body. Turn each light engine slowly but firmly into the socket to stretch the PVC around the bulb. Ambient temperatures around 65° - 95°F are ideal since the PVC will be more pliable.

**Step 3:** After all light engines are installed, plug the Light String into a 120V AC outlet and be sure each light bulb lights. make note of any bulbs that do not light. Unplug the Light String and carefully turn the unlighted bulbs until they make contact with the power contacts at the base of the socket. Proceed until all bulbs are lit.

**Step 4:** Place an ADAPT Globe over each Light Engine and thread it onto the outside threads of the Light Engine until it is snug. Do not overtighten.

**WARNING:** Risk of fire, electric shock or personal injury.

1. Ground Fault circuit Interruptor is required on circuits or outlets when ADAPT Commercial Light String is used for outdoor or wet applications.
2. Use weatherproof outlet protector for Wet location.



## Installation Instructions: Replacing Light Engines and Globes

**WARNING:** Risk of fire, electric shock or personal injury.

1. Ground Fault circuit Interruptor is required on circuits or outlets when ADAPT Commercial Light String is used for outdoor or wet applications.
2. Use weatherproof outlet protector for Wet location.
3. Only the Filament Light Engine is rated for outdoor use.

**Step 1:** Disconnect from power source before replacing light bulbs.

**Step 2:** Unscrew bulb by holding the socket in one hand and hold the Globe in the other. Turn the Globe counterclockwise to remove.

**Step 3:** Replace only with a replacement ADAPT Light Engine. Screw bulb into socket by turning clockwise. Do not overtighten.

**Warning:** Risk of electric shock.

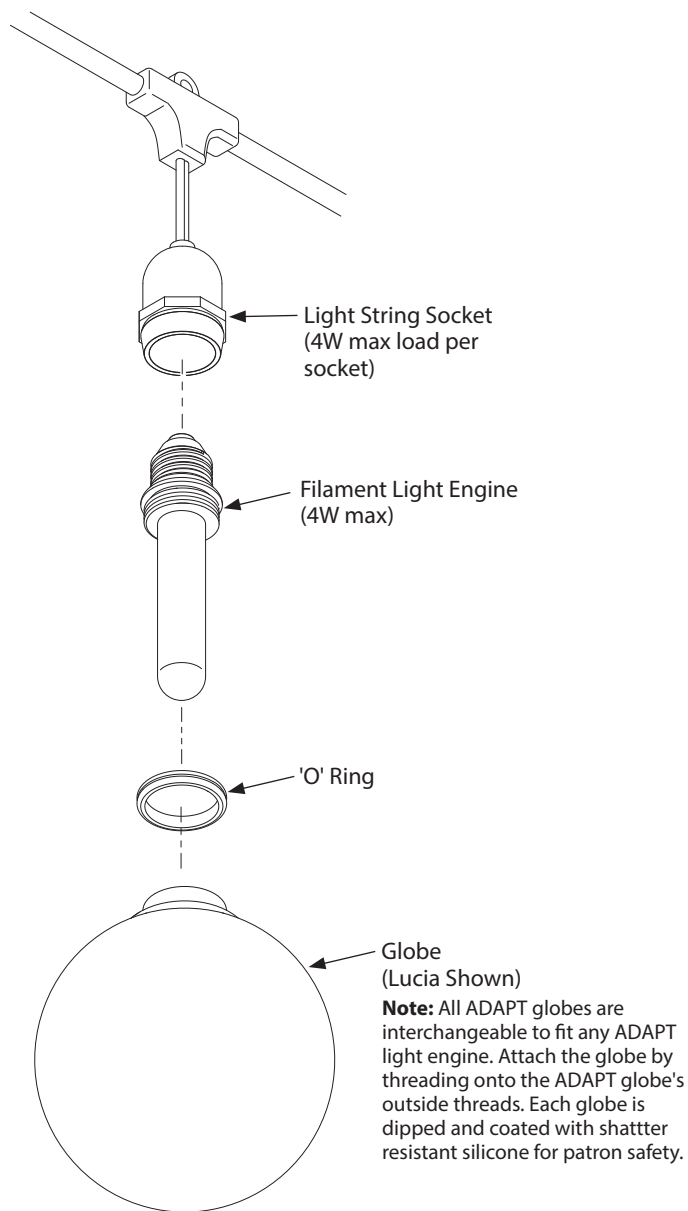
Do not replace bulbs in the rain or when wet.

**Note:** An 'O' Ring should be pre-installed at the factory over the threads of the Filament Light Engine to keep water out. If the 'O' Ring is not already installed, stretch the 'O' Ring over the threads of the Filament Light Engine making sure the recess around the 'O' Ring faces out. Make sure the 'O' Ring is seated at the base of the threads and is not twisted in order to ensure a water-tight seal.

**Step 2:** The PVC Socket fits very tightly around the light engine body. Turn each light engine slowly but firmly into the socket to stretch the PVC around the bulb. Ambient temperatures around 65°- 95°F are ideal since the PVC will be more pliable.

**Do not exceed the maximum wattage of any socket (4W). Do not exceed the overall maximum wattage capacity (96W) for a single Light String Set. Refer to the following chart.**

Maximum number of Connected Light Strings with ADAPT Light Engines and Globes	
Total Wattage	Maximum Number of Light Strings (1440W max per 10A Circuit)
Filament (4W)	
96W	15 Sets (48')

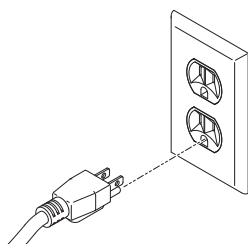


## Connecting to Power

**Step 1:** Plug Power Cord into AC Outlet.

**WARNING:** Risk of fire, electric shock or personal injury.

1. Ground Fault circuit Interruptor is required on circuits or outlets when ADAPT Commercial Light String is used for outdoor or wet applications.
2. Use weatherproof outlet protector for Wet location.



3. Avoid connecting or disconnecting power plug when equipment is wet.
4. Do not use outlets located near water or where water may accumulate.
5. Only use receptacles that accept three prong power plugs.
6. Only use extension cords equipped with three prong grounding plugs.
7. Use only with an extension cord for outdoor use, such as an extension cord of cord type SEW, SEOW, SEOW, STW, STOW, STOOO, SJEOW, SJEOW, SJW, SJOW, SJOOW, SJTW, SJTOW or SJTOOW.
7. Connect only one set of Commercial Light String on a single circuit.
8. SAVE THESE INSTRUCTIONS