

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: Litesphere LED is designed to work with listed Class 2 12V DC transformers only. Use of any other power source will cause damage, shorten the life of the fixture and will void the warranty.

Consult any and all applicable local and national codes for installation

Do not conceal or extend exposed conductors through a building wall as per local electrical code

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 by a certified professional.



Installation Instructions

Overview

Litesphere™ may be cut in the field to match project requirements. Simply cut wires and connect to junction box or connect directly to transformer for power. Install End Cap (**LS-EC-CL**) on dead end.

Note: Ensure the system is wired for correct polarity. The solid colored wire goes to the positive (+) terminal, and the striped wire goes to the negative (-) terminal on the power supply.

WARNING! Danger of electric shock.

Do not cut while system is powered! Measure area where system is to be installed and cut Litesphere lengths to fit.

Shades: Litesphere Strands ordered with Shades are shipped with the Globes removed for easier installation of the Shades. Please refer to installation options for installing Litesphere with Shades.

Option 1: Surface Mount

NOTE: Prior to installation, it is recommended that each globe be given a firm twist to ensure the Globes are tight after shipping.

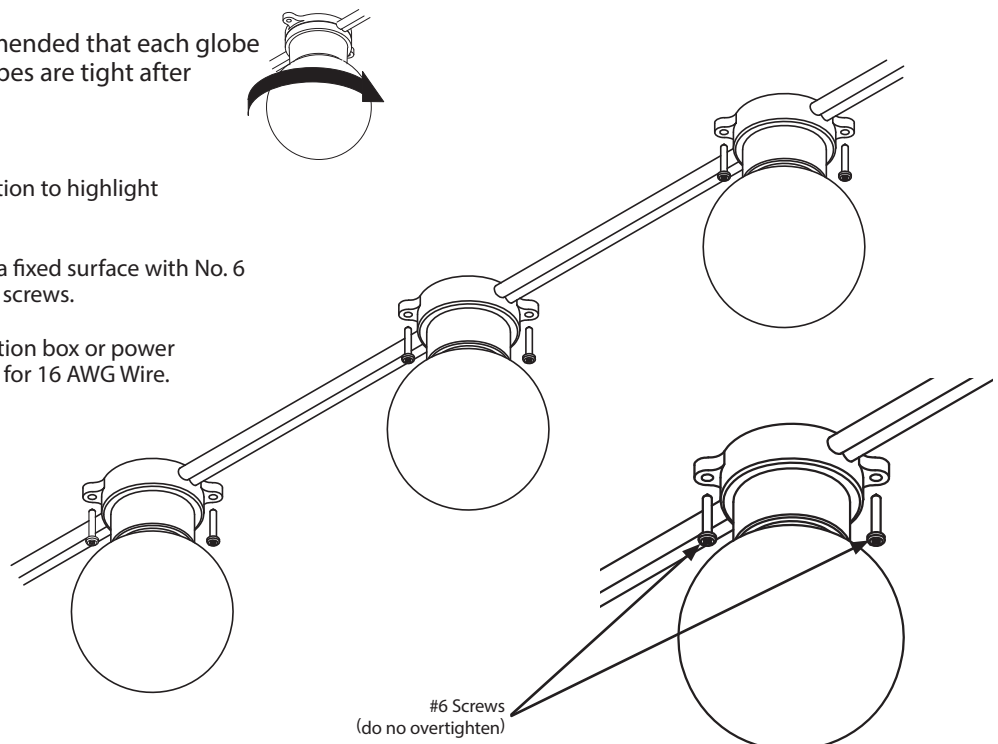
Rigid Mount to Surface - No Shades

Mounting directly to surface is the best option to highlight architectural details.

Step 1: Attach each Litesphere™ socket to a fixed surface with No. 6 size screws (by others). Do not overtighten screws.

Step 2: Connect lead end of strand to junction box or power supply using Wire Nuts (by others) suitable for 16 AWG Wire.

Step 3: Leave 1 1/16" of wire after the last socket at the trail end and install an End Cap (**LS-EC-CL**). For best results, fill the inside of the End Cap with Silicone Sealer before installing on wire.



Option 1: Surface Mount (Continued)

Surface Mount With Light Shade Adapters

IMPORTANT! If Light Shades will be used, install **Light Shade Adapters** before mounting the Litesphere Strand.

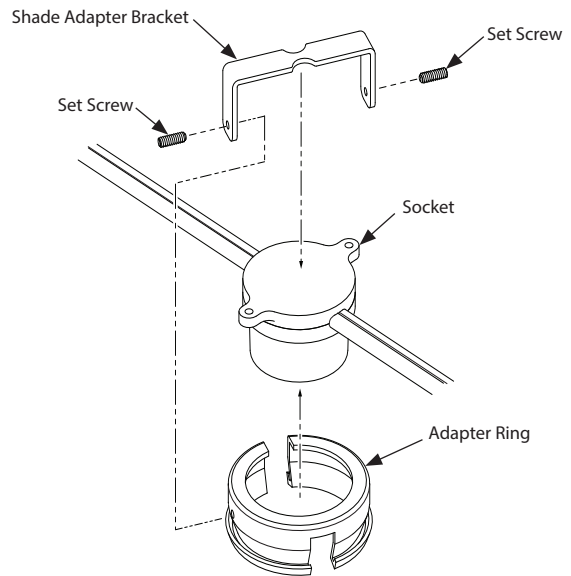
Note: Litesphere Strands ordered for use with Shades are shipped with the Globes removed for easier installation of the Shades.

Install Adapters

Step 1: Place the Shade Adapter Bracket over the top of the Litesphere™ Socket, as shown.

Step 2: Insert the Adapter Ring over the socket from the bottom.

Step 3: Install two Set Screws and tighten moderately. Do not overtighten.

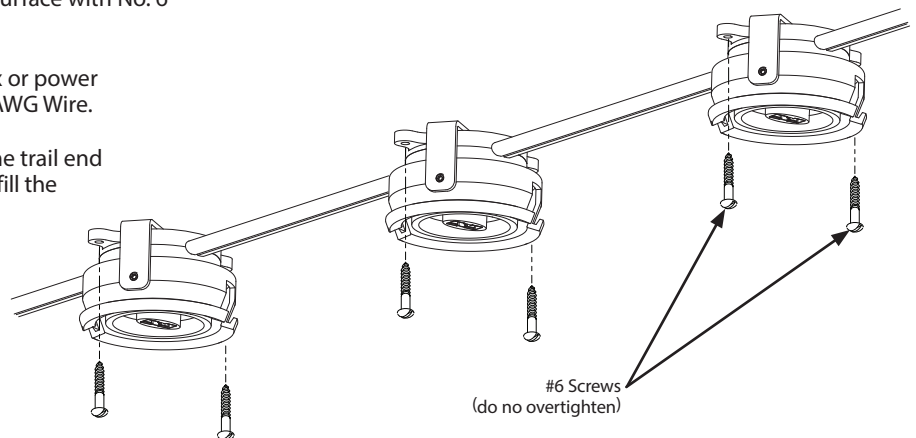


Mount Litesphere Strand

Step 1: Attach each Litesphere™ socket to a fixed surface with No. 6 size screws (by others). Do not overtighten screws.

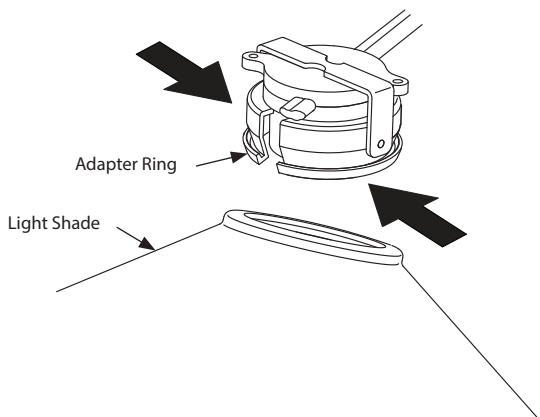
Step 2: Connect lead end of strand to junction box or power supply using Wire Nuts (by others) suitable for 16 AWG Wire.

Step 3: Leave 1/16" of wire after the last socket at the trail end and install an End Cap (LS-EC-CL). For best results, fill the inside of the End Cap with Silicone Sealer before installing on wire.



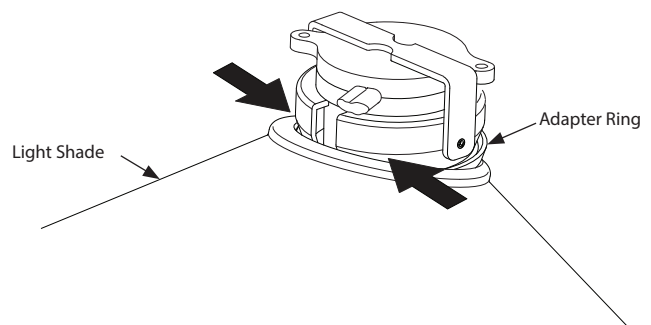
Installing the Light Shades

Step 1: Squeeze the sides of the Adapter Ring together.



Step 2: Hang the lip of the Shade opening over the lip of the Adapter Ring at the point where the Adapter Ring is pressed together.

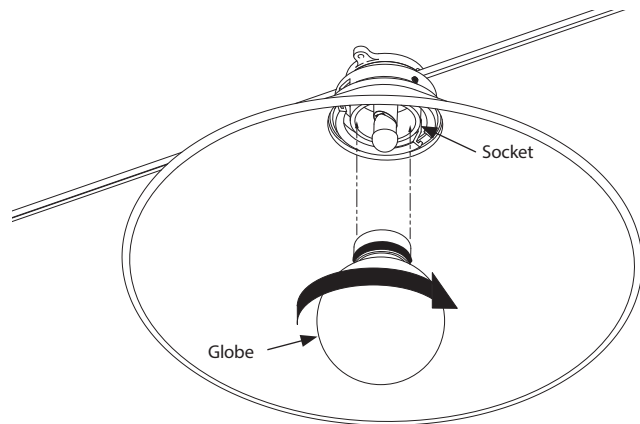
Step 3: Press the Shade up and over the lip of the Adapter Ring.



Option 1: Surface Mount (Continued)

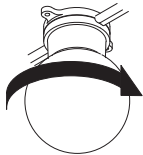
Install Litesphere Globes

Step 1: Push Globe into socket using a twisting motion like screwing a thread. Be sure that the 'O' Ring remains in position in the groove and the Globe is fully seated to establish a waterproof seal.



Option 2: Suspension Cable Mount

NOTE: Prior to installation, it is recommended that each globe be given a firm twist to ensure the Globes are tight after shipping.



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 Kits 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.**

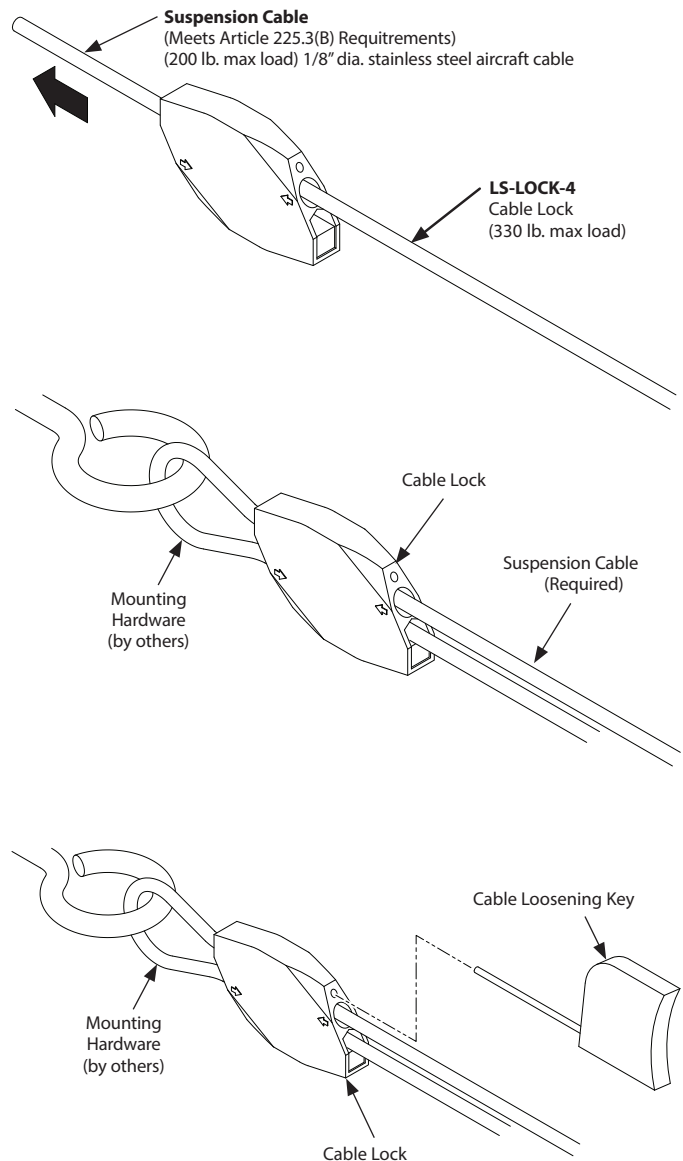
Step 2: Insert cable into upper hole in Cable Lock following the direction of the arrow on the side of the lock.

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.



Option 2: Suspension Cable Mount (Continued)

Suspension Cable Mount, No Shades

Step 1: Insert hanger clips (**LS-HANG-CLIP**) into the sockets, as shown, to hang over suspension cable.

Step 2: Insert curled end of Hanger (**LS-HANG-CLIP**) into hole on one side of socket.

Step 3: Position first socket below suspension cable and swing hanger over the cable and across the top of the Litesphere™ socket.

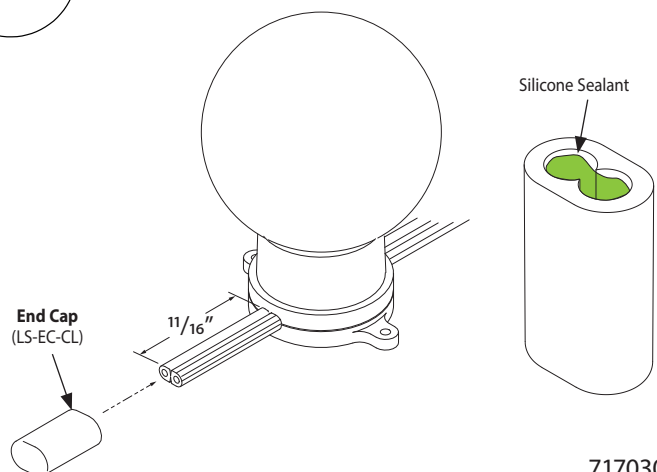
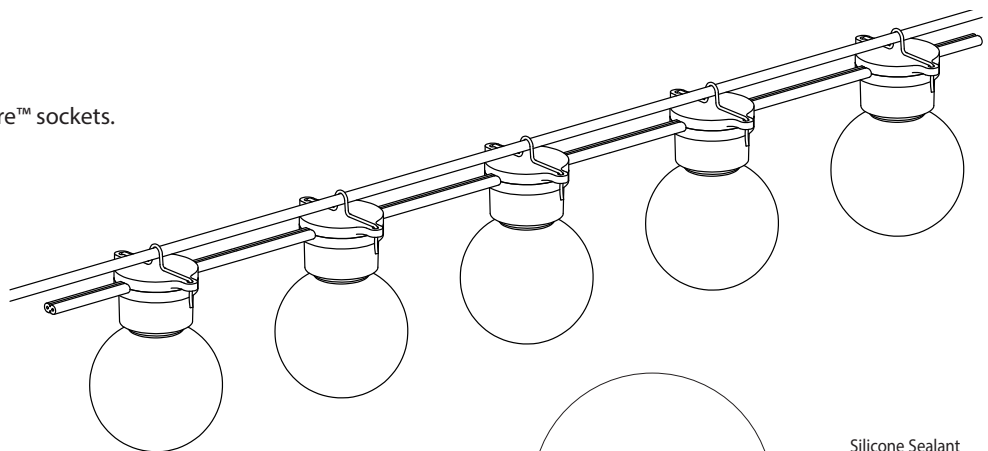
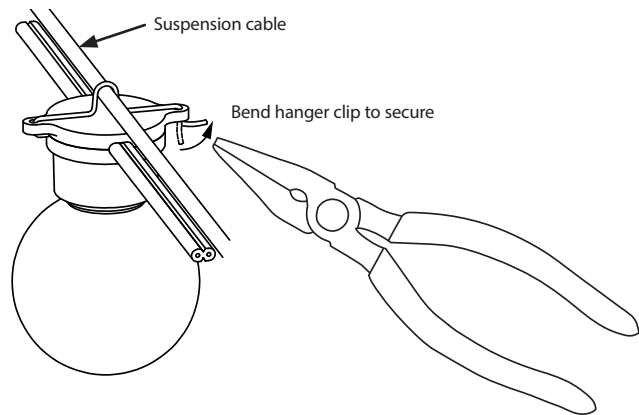
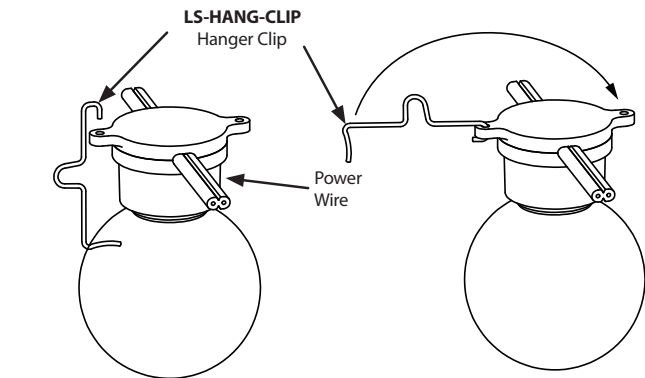
Step 4: Insert end of Hanger into hole on opposite side of socket, as shown.

Step 5: Bend up the end of the Hanger Clip to secure.

Step 6: Repeat procedure for all Litesphere™ sockets.

Step 7: Connect lead end of strand to junction box or power supply using Wire Nuts (by others) suitable for 16 AWG wire.

Step 8: Leave 1 1/16" of wire after the last socket at the trail end and install an End Cap (**LS-EC-CL**). For best results, fill the inside of the End Cap with Silicone Sealant before installing on wire.



Option 2: Suspension Cable Mount (Continued)

Suspension Cable Mount With Shades

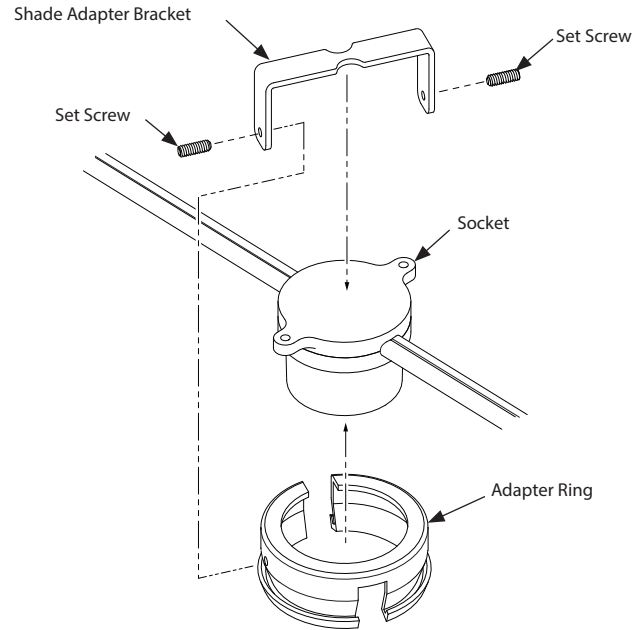
IMPORTANT! If Light Shades will be used, install **Light Shade Adapters** before installing the Litesphere Strand.

Note: Litesphere Strands ordered for use with Shades are shipped with the Globes removed for easier installation of the Shades.

Step 1: Place the Shade Adapter Bracket over the top of the Litesphere™ Socket, as shown.

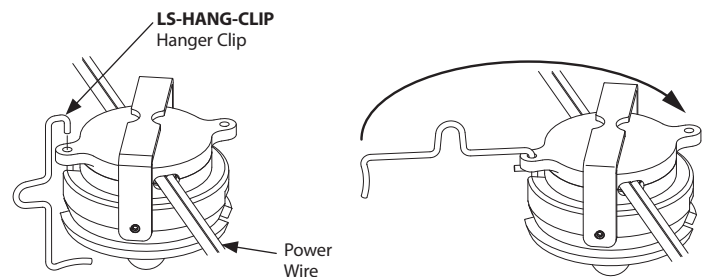
Step 2: Insert the Adapter Ring over the socket from the bottom.

Step 3: Install two Set Screws using allen wrench (included) and tighten moderately. Do not overtighten.



Step 4: Insert hanger clips (**LS-HANG-CLIP**) into the sockets, as shown, to hang over suspension cable.

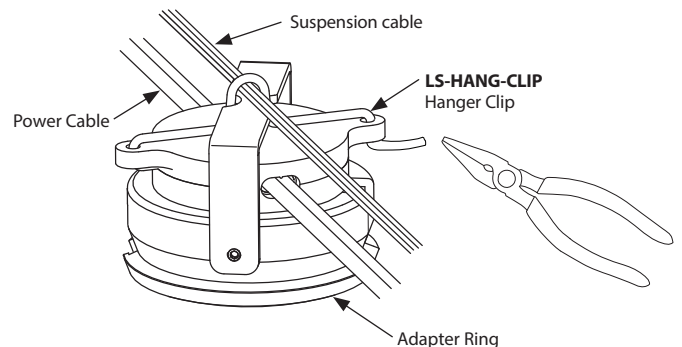
Step 5: Insert curled end of Hanger (**LS-HANG-CLIP**) into hole on one side of socket.



Step 6: Position first socket below suspension cable and swing hanger over the cable and across the top of the Litesphere™ socket and the Shade Adapter Bracket.

Step 7: Insert end of Hanger into hole on opposite side of socket, as shown.

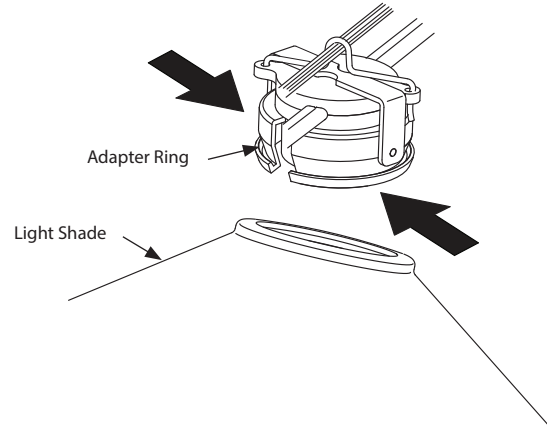
Step 8: Bend up the end of the Hanger Clip to secure.



Option 2: Suspension Cable Mount (Continued)

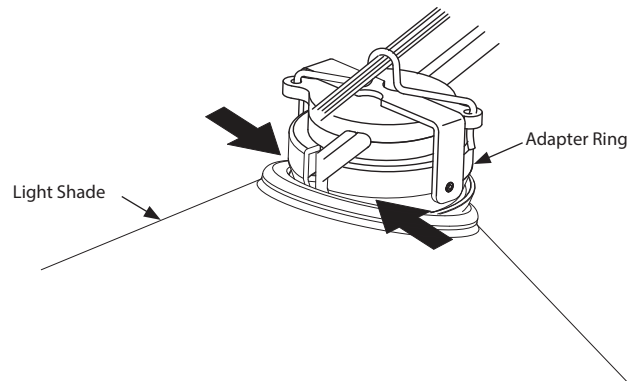
Installing the Light Shades

Step 1: Squeeze the sides of the Adapter Ring together.

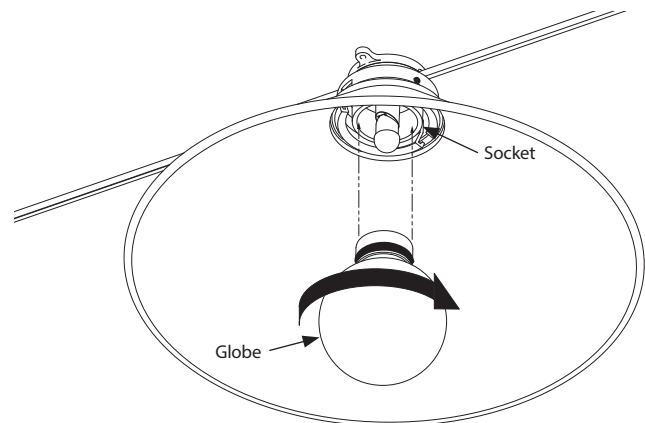


Step 2: Hang the lip of the Shade opening over the lip of the Adapter Ring at the point where the Adapter Ring is pressed together.

Step 3: Press the Shade up and over the lip of the Adapter Ring.



Step 4: Push Globe into socket using a twisting motion like screwing a thread. Be sure that the 'O' Ring remains in position in the groove and the Globe is fully seated to establish a waterproof seal.



Wiring Size:

Installer calculates wire size between load and power supply to avoid voltage drop.

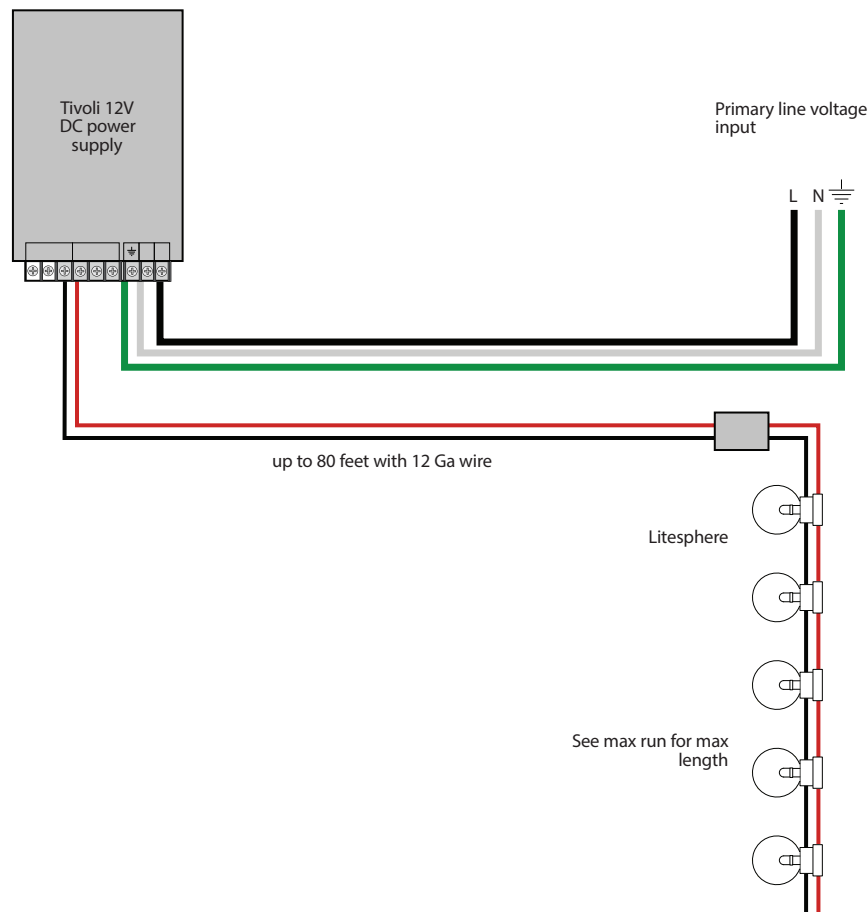
The wire sizing from the transformer to the light strings must be carefully calculated in order for low voltage circuits to operate properly. Tivoli recommends locating the transformer as close to the light string as possible. Use 12 gauge lead wire and keep the transformer within 80 ft of the fixture.

Note:

Consult factory for lengths over 80'.

Maximum Single Run*				
LED Type	6" OC	12" OC	18" OC	24" OC
Standard	100'	150'	180'	200'
High Output	60'	90'	110'	130'
Very High Output	30'	45'	55'	60'

*Maximum run lengths are based on Tivoli's recommended lumen drop.



⚠ Warnings: Risk of injury or fire.

Do not cover any luminaire as the covering may cause it to overheat.

Do not install this lighting system where the exposed bare contacts can be shorted or contact any conductive material to reduce the risk of fire and burns.

Do not install any luminaire closer than 6 inches (15.25cm) from any curtain, or similar combustible material.

Do not use any luminaire if damaged; such as, broken globe, loose

connections, or frayed wire insulation. Inspect periodically.

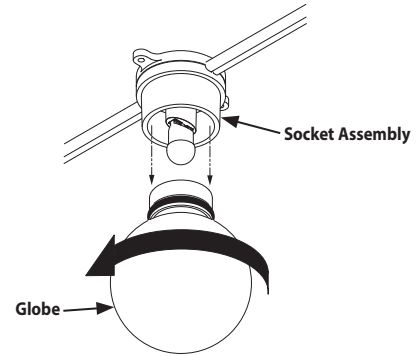
Do not submerge any luminaire in liquid. Use waterproof connectors for all outdoor applications.

Do not secure any luminaire with staples, nails or like means that might damage the wire insulation. Secure it by using screws through the base.

Do not run any luminaire at an operating temperature exceeding 65° C or 149° F.

LED Bulb Replacement

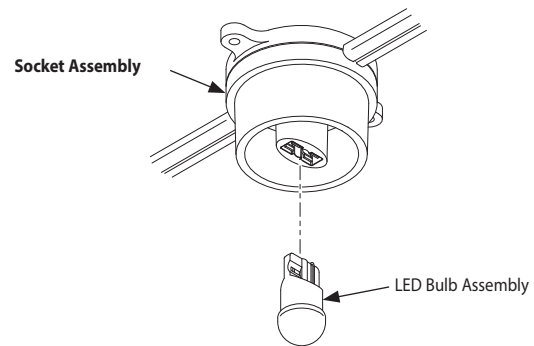
Step 1: Remove Globe. Pull globe away from socket using a twisting motion like unscrewing a thread. If the Litesphere™ socket is suspended from a cable, it will be important to keep a firm hold on the socket.



Step 2: Hold LED Bulb firmly and lift straight up to remove.

Step 3: Install replacement LED Bulb by inserting gently into socket until it locks into place. Turn on power to confirm that Bulb lights.

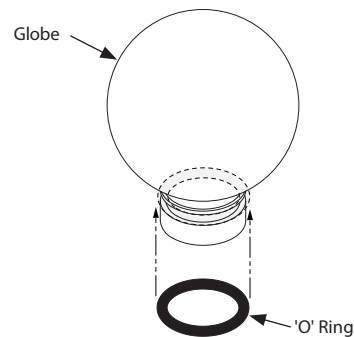
Note: If Bulb does not light, reverse position 180 ° to achieve correct polarity.



Step 4: Remove the old 'O' ring from the Globe by rolling it down and off the neck of the globe.

Step 5: Assemble a new 'O' Ring to the Globe. Place the 'O' Ring at the bottom of the Globe opening and roll up over the edge of the Globe neck into position in the groove. A small blade screwdriver may be helpful.

Step 6: Replace Globe by reversing the removal procedure. It is very important to insert the Globe as far into the socket as possible to prevent water from leaking inside the fixture.



Litesphere™ Bulb Identification

