

**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 24V 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™ True - RGB+W is normally shipped to customer in specific lengths with power lead wires attached. The maximum run of 80 Globes may be ordered with 6", 12", or 24" spacing. Globes may be individually controlled with DMX512 protocol for 16 million color

combinations.

Create runs with a maximum run length of 80 globes per circuit. Use one Data Box for every 80 globe run.

## Option 1: Surface Mount

### Rigid Mount to Surface

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

**Step 1:** Confirm your power is off. **NEVER CONNECT STRANDS OR DATABOXES WHILE POWERED. RISK OF PRODUCT DAMAGE.**

**Step 2:** Remove suspension plate

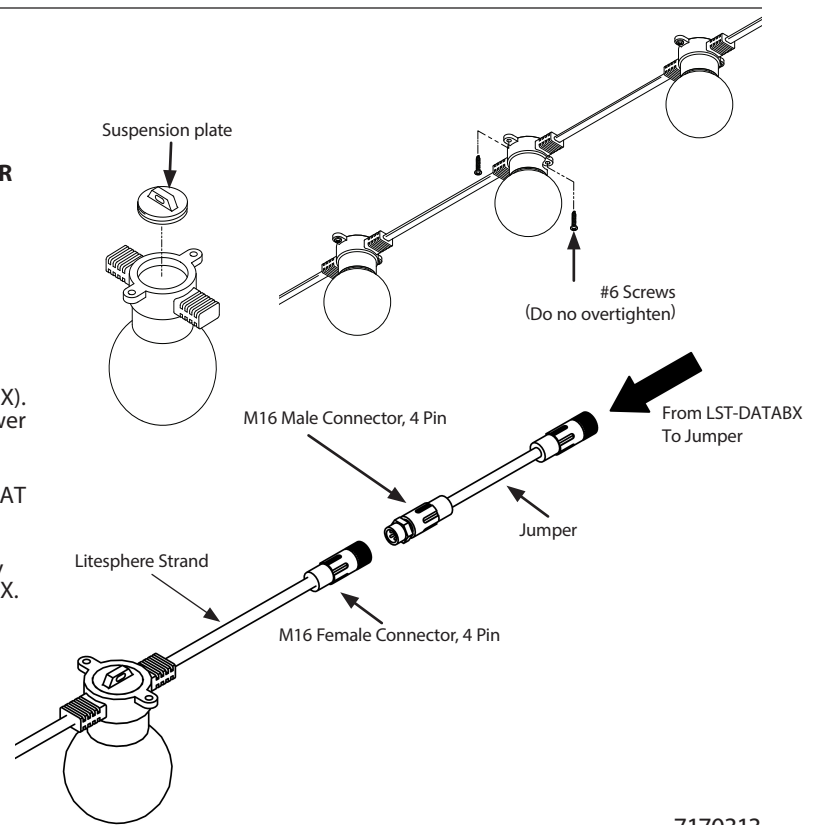
**Step 3:** Attach each Litesphere™ True - RGB+W socket to a fixed surface with No. 6 size screws (by others). Do not over tighten screws.

**Step 4:** Connect lead end of strand to jumper (LST-JUMPER-B-XX). Connect Jumper to LST-DATABX inside the ADNM-DAT power supply.

**Step 4:** Connect building power and data connection to ADNM-DAT power supply.

**Step 5:** Turn on power and verify the system is operating properly by verifying the following sequences while NOT connected to DMX.

- Sequences:**  
 Green Chase  
 Yellow Chase  
 Blue Chase  
 Magenta Chase  
 Cyan Chase  
 White Chase  
 Red Chase



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## Option 2: Suspension Cable Mount

**WARNING:** For suspension application, catenary cable is required to support the product, otherwise the warranty will be void.

### Hanger clip mount to Suspension Cable

Illuminate courtyards, streets or parks with festive lighting using Catenary Cable (**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-2**) included with 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 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.

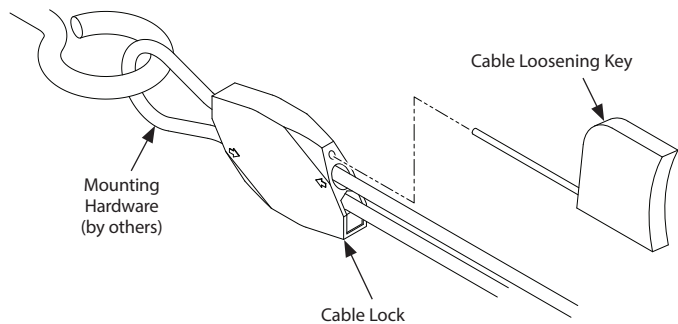
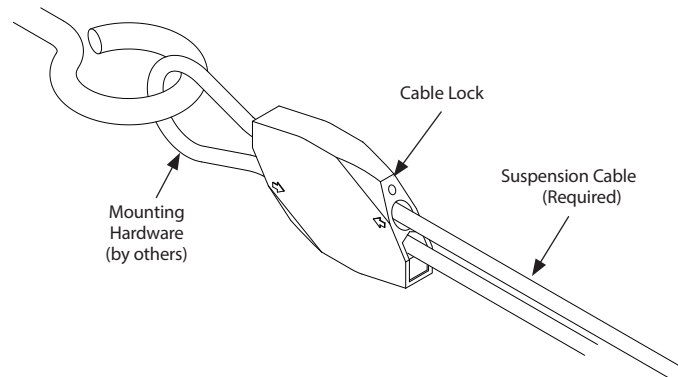
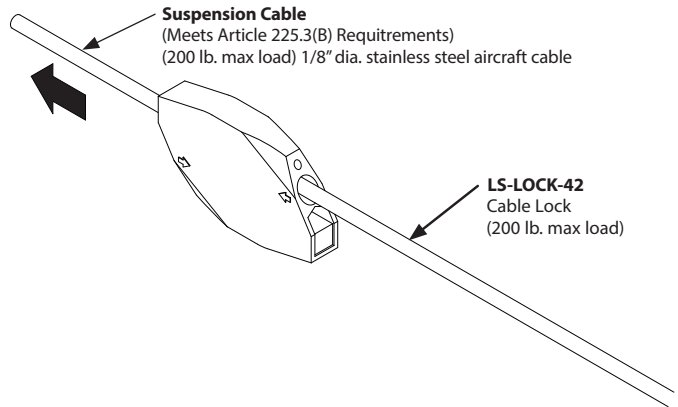
**Step 3:** Loop Cable through Eye Bolt or other mounting hardware (by others) and insert the cable back into the lower hole of the Cable Lock, as shown.



**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.**

**WARNING: DO NOT TIGHTEN OVER 200 lb**

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



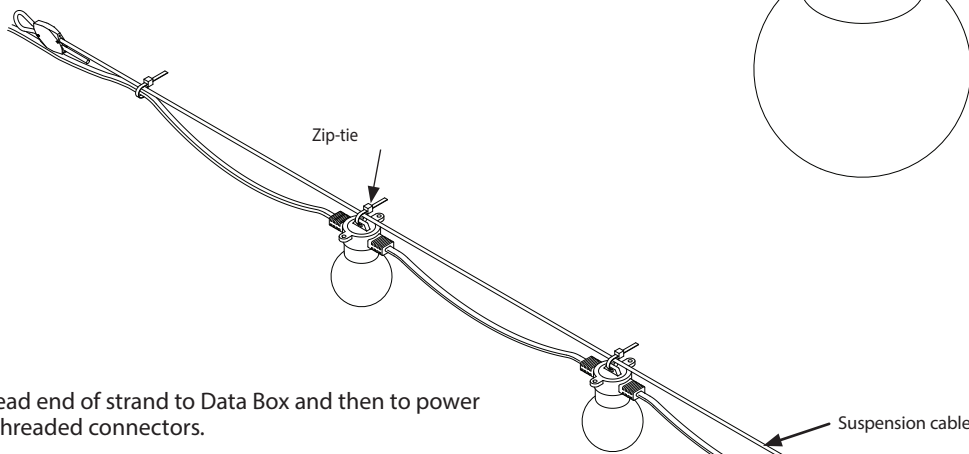
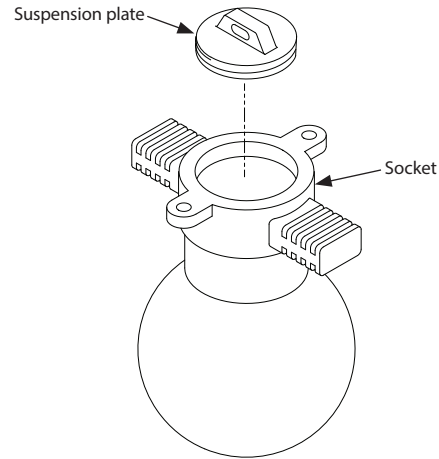
## Option 2: Suspension Cable Mount (Continued)

### Suspension Cable Mount

**Step 1:** Be sure suspension plate is firmly threaded in place.

**Step 2:** With suspension cable securely attached, use tie wraps to attach Litesphere™ units to cable.

**Step 3:** Repeat procedure for all Litesphere™ sockets.



**Step 4:** Connect lead end of strand to Data Box and then to power supply with M16 threaded connectors.

### End Cap for Field Cut Cable End

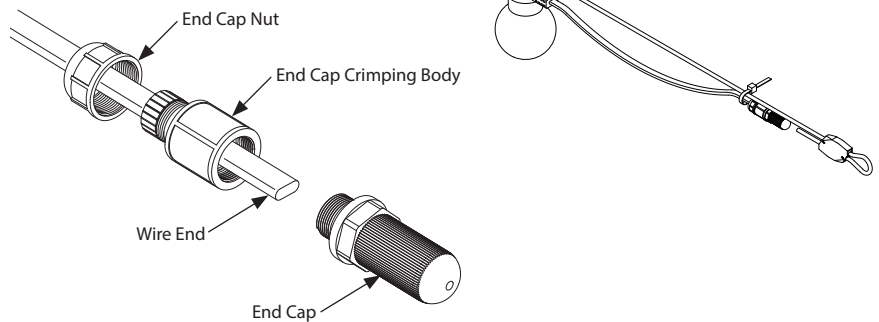
**Step 5:** Thread End Cap onto Female Connector at Trail End of Strand. Insert End Cap Nut over Wire first.

**Step 6:** When the wire has been cut, use the Crimp-on End Cap. Insert the End Cap Nut over the wire first.

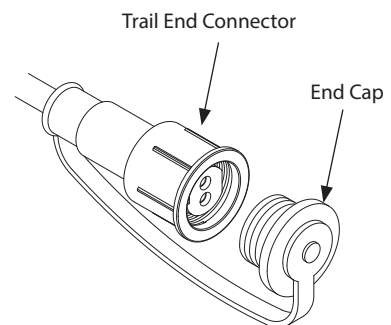
**Step 7:** Next, slide the Crimping Body over the wire so that the wire protrudes about 3/4" out of the front of the Crimping Body.

**Step 8:** Tighten the End Cap Nut over the end of the Crimping Body.

**Step 9:** Screw the End Cap onto the front of the Crimping Body.



**Cut-off End Cap**



**Connector End Cap**

### End Cap at End of Run

The Litesphere includes a connector at the end of the run. When the Trail End Connector is not connected to another strand, thread the attached End Cap into the end of the connector.

## Option 2: Wiring Instructions

**Step 1:** Confirm your power is off. **NEVER CONNECT STRANDS OR DATABOXES WHILE POWERED. RISK OF PRODUCT DAMAGE.**

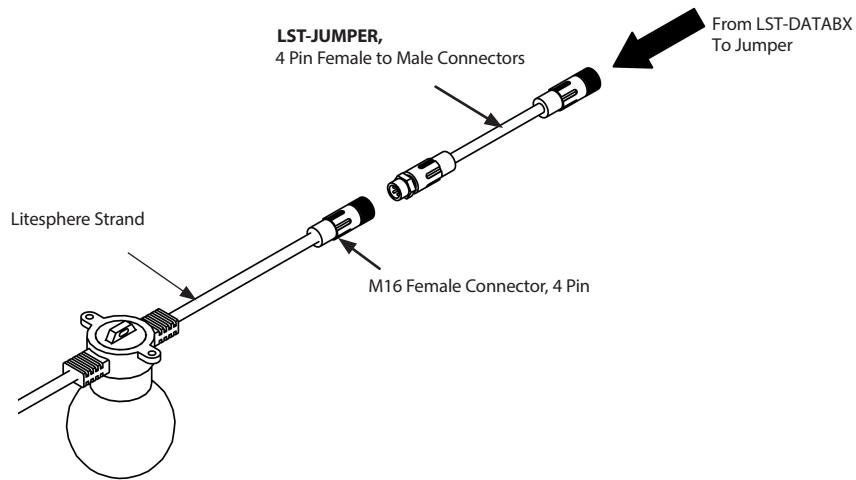
**Step 2:** Connect lead end of strand to jumper (LST-JUMPER-B-XX). Connect Jumper to LST-DATABX inside the ADN-M-DAT power supply.

**Step 3:** Connect building power and data connection to ADN-M-DAT power supply.

**Step 4:** Turn on power and verify the system is operating properly by verifying the following sequences while NOT connected to DMX.

**Sequences:**

- Green Chase
- Yellow Chase
- Blue Chase
- Magenta Chase
- Cyan Chase
- White Chase
- Red Chase



**Suggested Wiring Practices:**

- Use cable specifically designed for DMX. These cables have an impedance of 120 ohms and have low capacitance. Example: Belden 9841-9842 or 3105.
- A daisy chain topology should be used.
- The total cable length from the first light globe to the power supply, including the Data Box, must not exceed 80'.
- Do not run data signals next to or in the same conduit as high power resources. If it is necessary to be near these resources, cross over them at 90 degrees or keep as much parallel distance between them as possible.
- Run in grounded metal conduit when there may be concern from nearby high power devices and/or situations where the cable structure may be compromised.

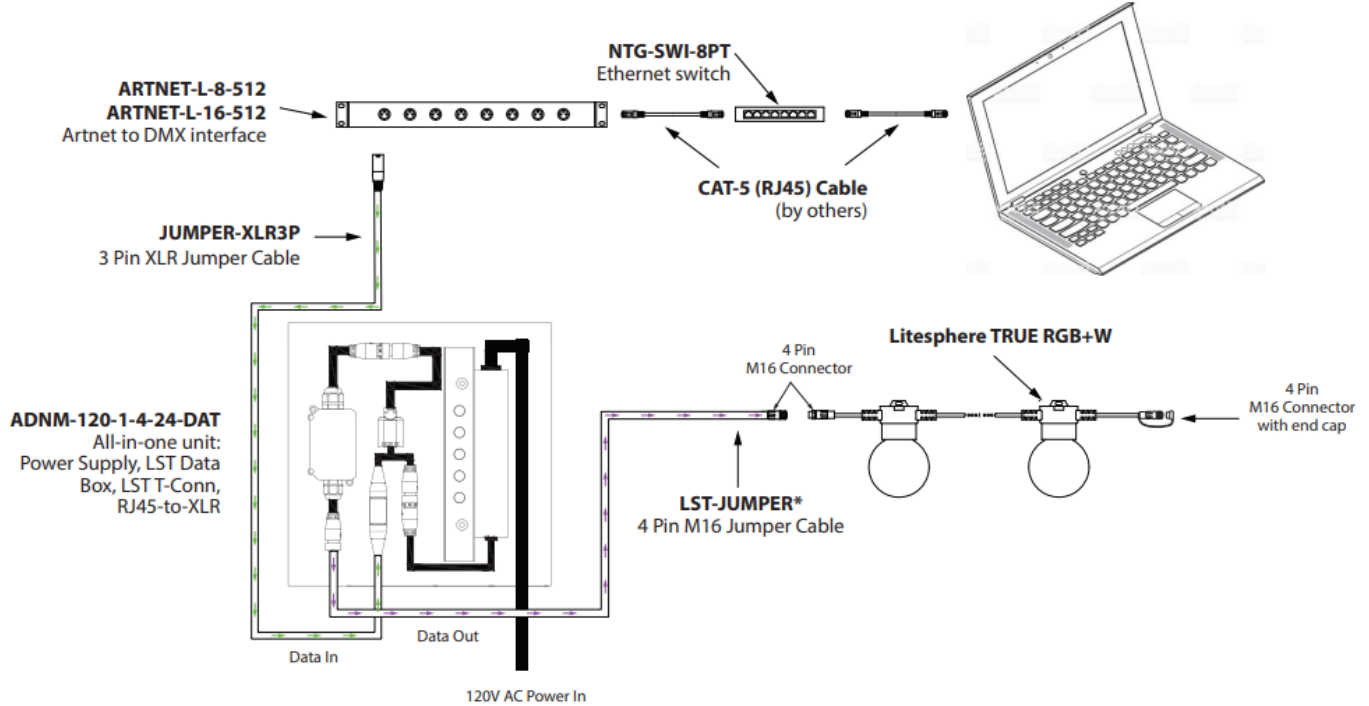
## Installation Instructions: Maximum Run Lengths

Maximum Strand Run Length				
Litesphere RGBW On Center Spacing	Watts per Globe	Watts per Circuit	Bulbs	Maximum Run Length
06" OC	1W	96W	80	40'
12" OC	1W	96W	80	80'
24" OC	1W	96W	80	160'

## Wiring Diagram for Online Operation

### MADRIX (Live)

This is a live control performance setup. Widely used for concerts or performance-based manipulation. Use of a live network is necessary for communication between MADRIX software and fixture.



## Wiring Diagram for Offline Operation

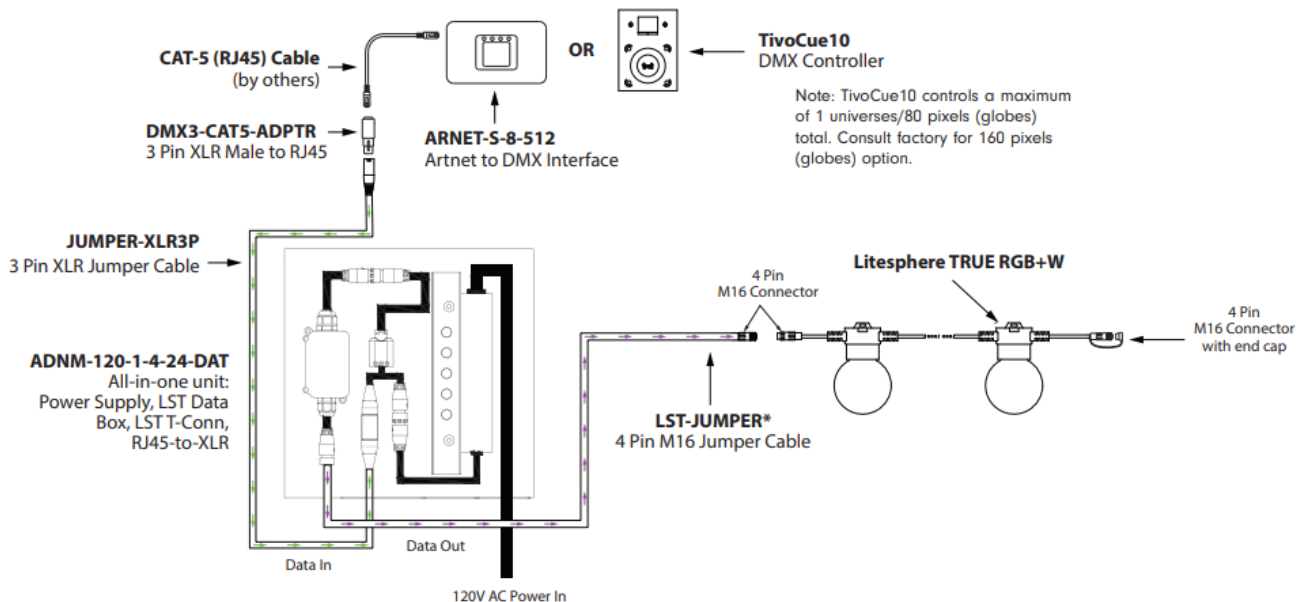
TivoCUE or Artnet Interface (Preset)

Programmed via CUE software and recorded to a Micro SD card for data transfer into TivoCUE or Artnet Interface control.

This is a

stand-alone feature with no need for network support by software (CUE) once recorded and transferred to control hardware.

Please refer to the TivoCue10 or ARTNET-S-8-512 specification for additional information.

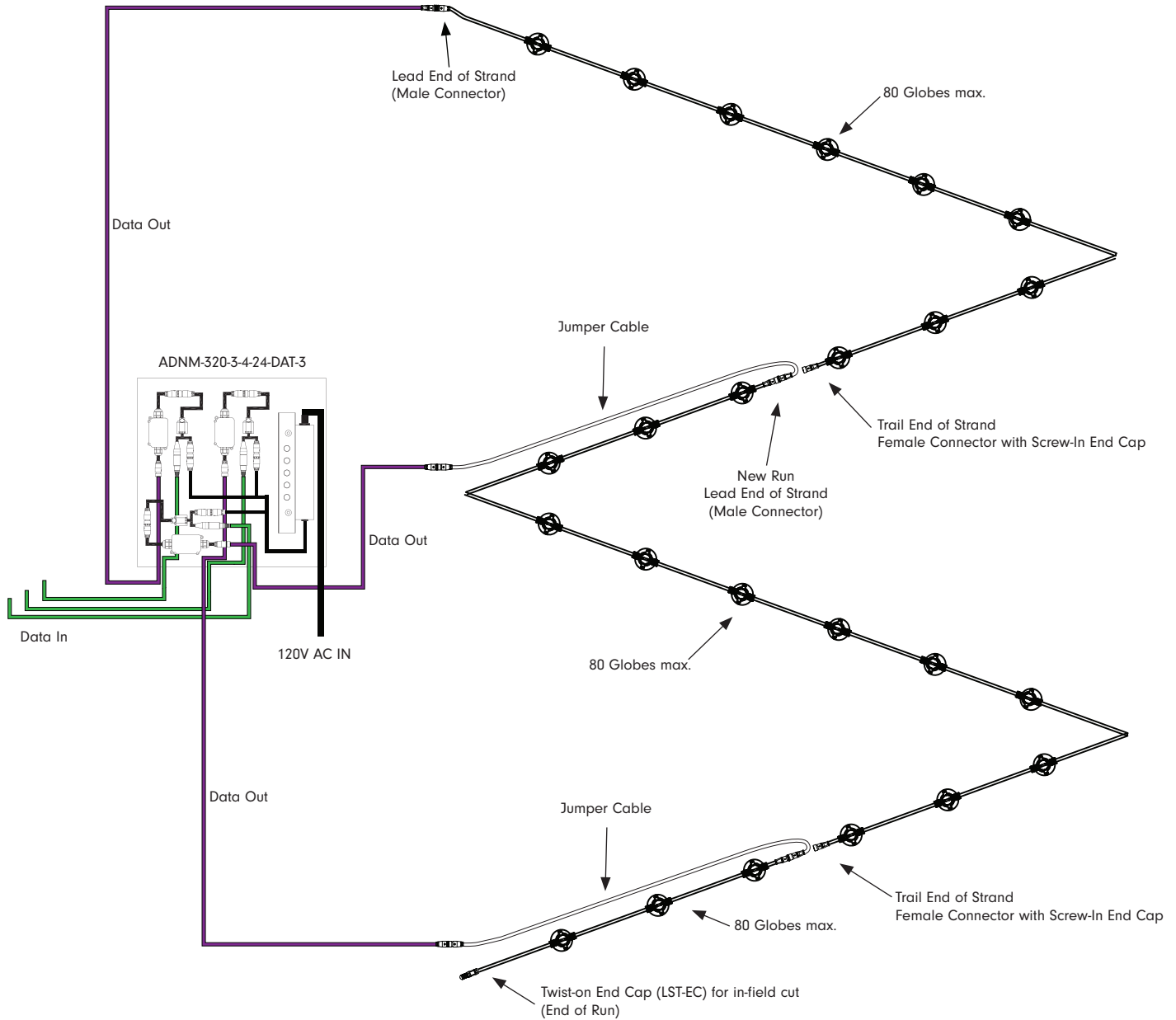


**NOTE:** Please refer to the Installation Instruction for the Power Supply you choose for detailed wiring instructions.

## Wiring Multiple Runs

**WARNING! Risk of Product Failure**

The data out cable length from the ADN-M-DAT power supply to the first globe, must not exceed 80'. The total data out length from the ADN-M-DAT power supply to the last glob, must not exceed 260'.



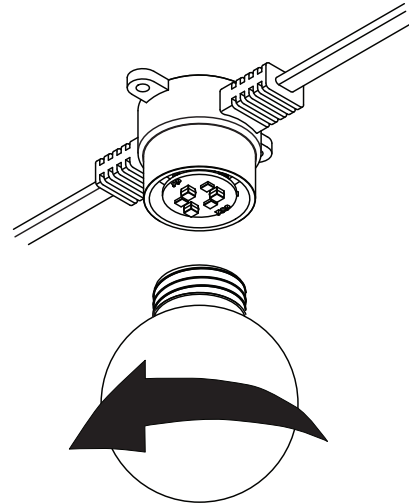
## Wiring Statement

- 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 -20°C to 50°C (-4°F to 122°F)

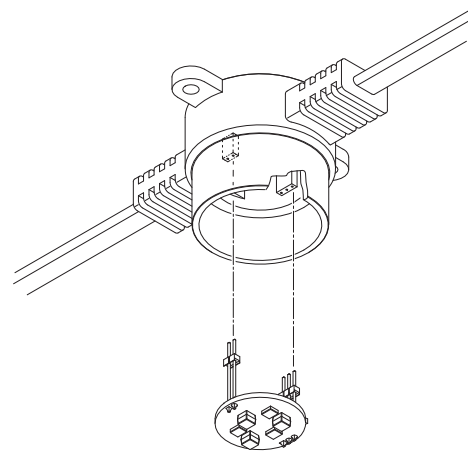
## Replacing the LED Board

**Step 1:** Unscrew Globe



**Step 2:** Remove LED Board by pulling straight down.

**Step 3:** Install new LED Board. Insert Pins into receptacles inside the socket opening. Be sure the pins are all aligned correctly with the holes.



**Step 4:** Replace Globe.

