

# LUXFLEX™

## FLEXIBLE SHEET

## Tunable White



Thin, flexible LED sheet for backlighting small and large format projects alike. Cuttable, tunable white crosswired solution with easy to use Molex connectors for the perfect application fit. Available with a wide color tuning range spanning 2400K-6500K and compatible with a wide array of dimmers & controls.

**For your safety, please read and understand instructions completely before starting installation and retain this guide for future reference.**

## HANDLING & MOUNTING

### MANAGING THE PRODUCT

- Cutting sheets will expose copper electrical wires and conductors that become non insulated when they are cut. This raises the likelihood of electrical shorting between connectors and compromised lighting quality. To avoid this, allow for a 1-2mm spacing between sheets and cut pieces and do not touch any conducting metal components.
- Dry fit flexible sheets before installing.
- Mock up LED flexible sheet with face material to ensure desired effect is achieved.
- Avoid repeated twisting, folding, creasing, or flexing of LUXFLEX sheets.
- Do not scrape or use excessive rubbing force on LUXFLEX sheets
- LUXFLEX is a flexible light emitter. Do not bend the light sheets to less than a 3" diameter.
- LUXFLEX sheets can be damaged by electrostatic discharge. Observe precautions for handling electrostatic sensitive devices.
- Make sure to provide a minimal airgap to prevent hot spots.
- Avoid placing heavy objects on LUXFLEX.
- No heat sink is required for installation.

### AIRGAPS

- 3-4" Recommended airgap between product & substrate, depending on face material opacity for optimum backlight evenness.

### GENERAL MOUNTING GUIDELINES

- Install the flexible sheets panel in accordance with project specifications or consult a designer.
- Consult Architects, General Contractors, or Fabricators for recommendations when field conditions require modifications to approved submittal or mockup.
- Do not mount or slide heavy objects onto flexible sheet.
- If flexible sheet needs to be repositioned, remove fasteners and be sure new mounting holes do not overlap with prior holes.
- If flexible sheet is mounted with adhesive, pull up instead of sideways to lift flexible sheet.
- Please note that handling and mounting the product is the installer's responsibility. LEDCONN assumes no responsibility for the installation of the product and assumes no liability for any installation or reinstallation costs.
- For cut pieces of LUXFLEX requested for damp location usage, add on silicone to exposed conductors. See "Prepping for Outdoor & Damp Locations" below for best practices.

### OPTIONS

- 3M Adhesive Tape • Fastener (screws)

### REQUIRED PARTS FOR INSTALLATION

- Molex to hardwire
- Molex to Molex connector (jumper cable/tiling connector)
- Fastener screws

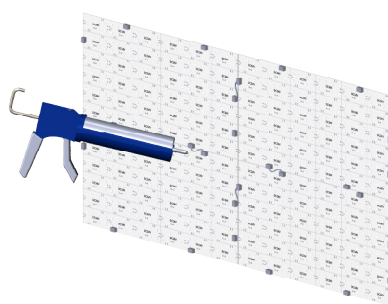
## SEALING SHEETS FOR OUTDOOR & DAMP LOCATIONS

IP65 treated LUXFLEX can be used for outdoor damp location environments when Molex connections are properly sealed. General electronic grade silicone is recommended for sealing.

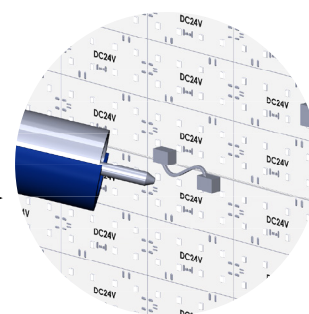
### INSTRUCTIONS

1. After testing that all lights are operational, seal each Molex connection by applying water resistant silicone to the connection.
2. Allow sealed connection to cure completely before reconnecting to power.

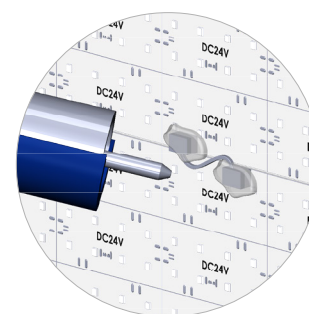
- 1 Apply silicone seal.



### ENLARGED VIEW



- 2 Make sure the sealed connection fully cures (dries).



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## MOUNTING

We recommend utilizing the 3M adhesive with metal screw fasteners to securely mount LUXFLEX.

### PART I: APPLY THE 3M ADHESIVE

- To obtain maximum adhesion, bonding surfaces must be stable, smooth, clean, and dry. Make sure the surface is clear of debris and is not greasy. Firm application pressure develops better adhesive contact and helps improve bond strength.
- 1/32 inch spacing between LUXFLEX Flexible LED Sheets is required to avoid conductor contact between flexible sheets.
- For best application, LEDCONN recommends bonding surfaces that are non-greasy and debris-free. 3M tape adheres best to metal, plastic, and painted surfaces.

1) **Dry Fit** With the 3M adhesive tape backing still on, dry fit the LED flexible sheets to ensure proper fit in enclosure. Avoid repositioning LUXFLEX after peeling off the adhesive tape. 3M adhesive is very strong, but it will lift and cause the sheet to wrinkle. Conducting the dry fit mockup before removing the adhesive peel will help greatly.

2) **Solvent Wipe** To obtain optimum adhesion, the bonding surfaces must be cleaned and smooth. Most substrates are best prepared by cleaning with a mixture of isopropyl alcohol (IPA) and water.

3) **Wipe Dry** Wipe dry the bonding surface.

4) Remove 3M adhesive tape backing and apply to surface. Use all tape on the back.

5) Apply firm pressure to improve adhesive contact and bond strength; however, avoid applying pressure to the LED.

### PART II: SCREW IN THE METAL FASTENERS

- Screws are to only be fastened inside the ellipsoidal holes marked on the sheet. Use only round screw heads such as pan or truss. Do not use tapered screws such as countersunk, wood, or drywall.
- 1/32 inch spacing between LUXFLEX Flexible LED Sheets is required to avoid conductor contact between flexible sheets.

1) Position the LED flexible sheet in the desired mounting location and use the factory supplied ellipsoidal mounting holes as a template to drill into the mounting surface. Only drill through the designated mounting holes, and do not penetrate through LED flexible sheet substrate.

2) Fasten screws through the LED flexible sheet mounting holes ensuring the screw head is securing the LED flexible sheet to the mounting surface.



### MOUNTING TIP

To prevent hotspots, we recommend installing LUXFLEX **at least 3-4" away from the diffuser or illuminated surface.**



ADD SCREWS TO THE HOLES.

SCREW SHOULD BE FLUSH AGAINST MOUNTING SURFACE.

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**FLEXIBLE SHEET**

Tunable White

SCAN FOR  
DIGITAL VERSION

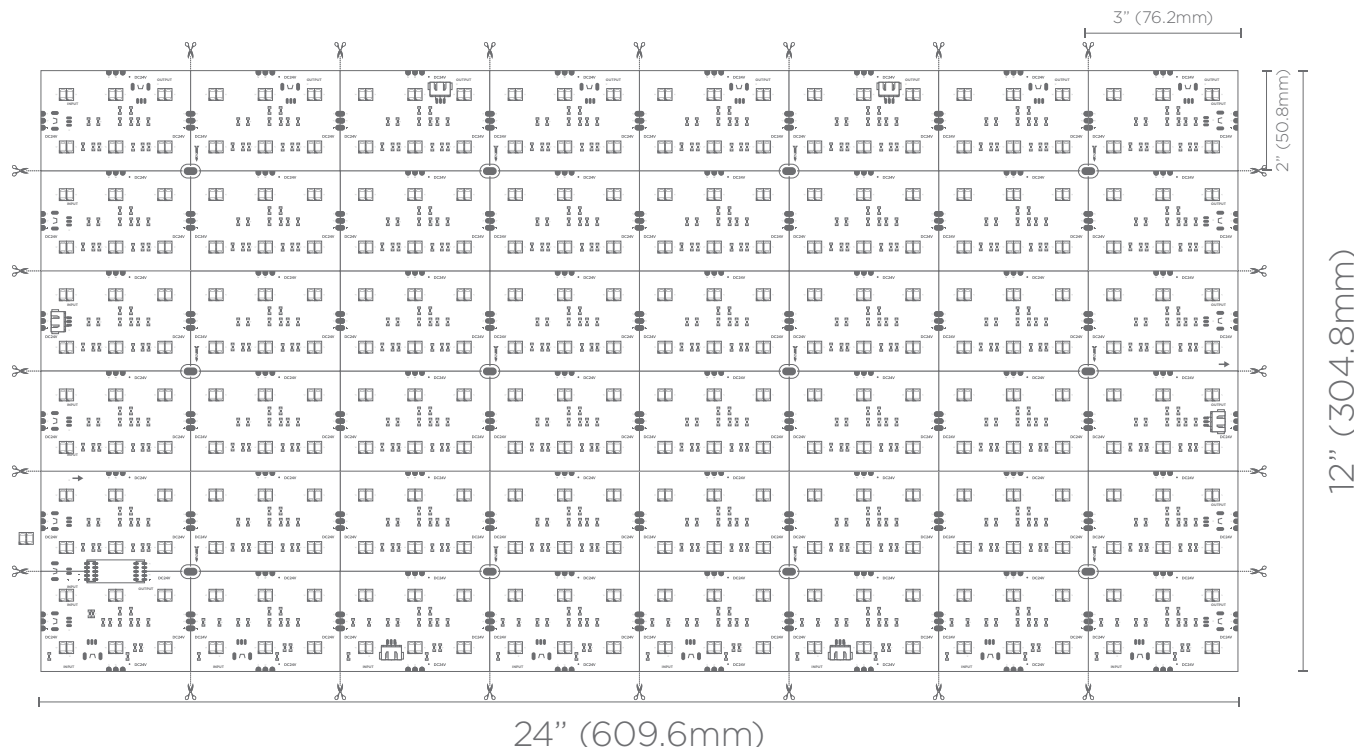


## FIELD CUTTING

LUXFLEX is fully field cuttable and may be cut on-site horizontally or vertically along the designated cutting lines with scissors or a knife.

### CUTTING TIPS

- 1) **Only cut along designated cut lines. Do not cut outside of designated cut lines otherwise the electrical circuit will break.**
- 2) For LUXFLEX Tunable white, the smallest piece that may be cut measures 3" x 2" or 76.2mm x 50.8mm.
- 3) Cut pieces are crosswired and will illuminate as long as pieces are cut along the cutting lines and connected to one another via Molex connection.
- 4) Cut pieces will not illuminate unless connected to another energized section or power supply through the Molex connection.
- 5) Molex connectors are located around the perimeter of a full LUXFLEX sheet.



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Tunable White



## POWER & WIRING

Controls, dimmers, split connectors, extension cords, power supplies, and accessories are available for purchase.

**Before wiring to power supply, always turn off electricity at the fuse or circuit breaker box.**

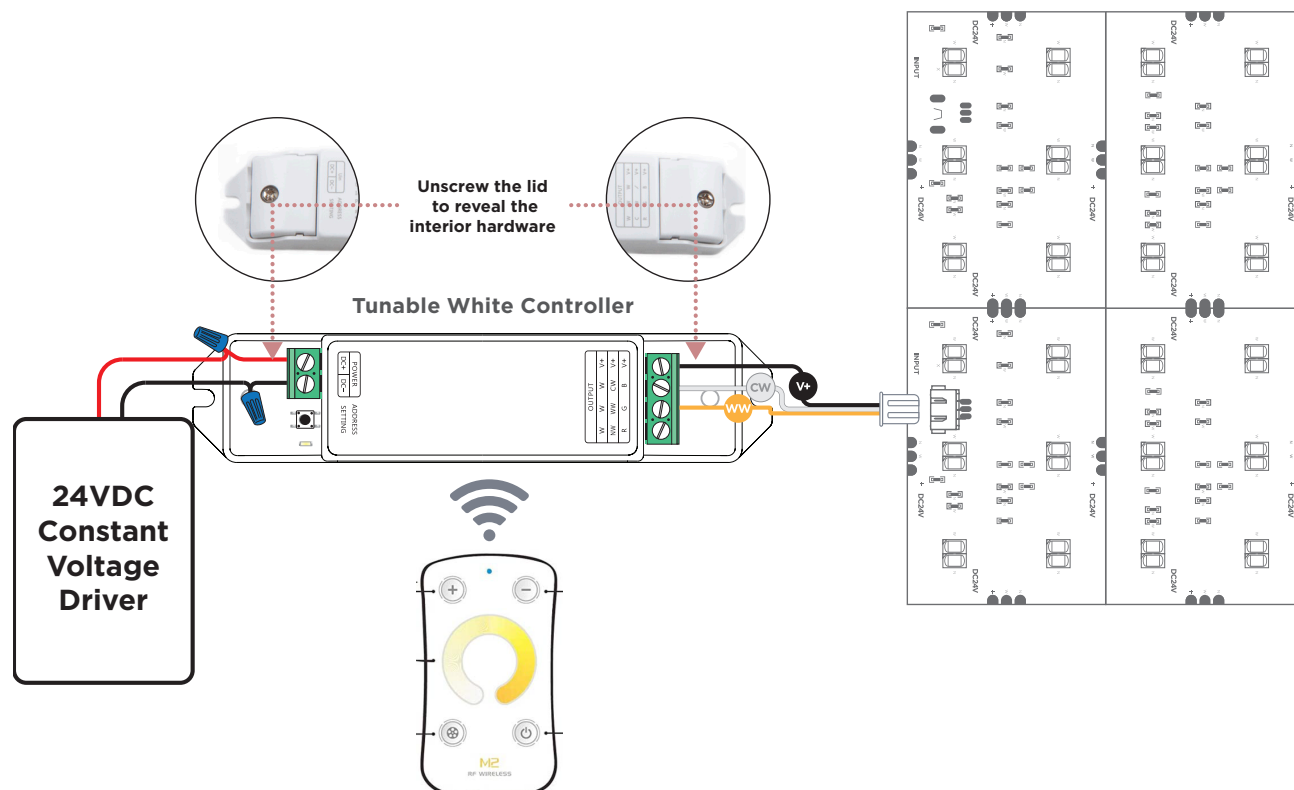
### ELECTRICAL POWER CONSIDERATIONS

- Use the supplied Class 2 power supply to power the LED flexible sheet. The warranty will be forfeited if a power supply not approved by LEDCONN is used.
- LUXFLEX sheets are offered with UL & cUL Listed & Recognized Class 2 power supplies. Please check the input voltage for your flexible sheet and use the power supply that matches the indicated voltage.
- The total power consumption of the lighting fixture must be lower than the rated output power of the power supply and dimming controls.
- Unless otherwise specified, use only Class 2 power supplies rated 24V or less. LUXFLEX is not suited for power supplies that do not comply with Class 2 or are greater than 24VDC.
- To maintain Class 2 power compliance, do not exceed more than a 96W load.
- Using a power adapter is essential. Never apply direct AC power. Doing so will instantly burn the LEDs, permanently damage the product, and void the warranty.
- Ensure enough spacing between pieces of assembled LUXFLEX products to avoid conductors shorting against each other.
- Jumpers & hardwire-to-Molex connections are provided with standard 20AWG wires.
- Please refer to pages 6-7 for further instructions on tiling multiple sheets & power consolidation.

### DRIVERS & POWER SUPPLIES

- Please refer to LED driver manufacturer's instructions for appropriate dimmer, connection instructions, and usage recommendations.
- Electrical drivers may be remotely mounted. Contact the LEDCONN Engineering team for help if needed.
- LEDCONN will recommend drivers that match the wattage and voltage requirements of LUXFLEX.

### HARDWARE DRIVER-TO-MOLEX CONNECTOR



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### DMX CONTROL

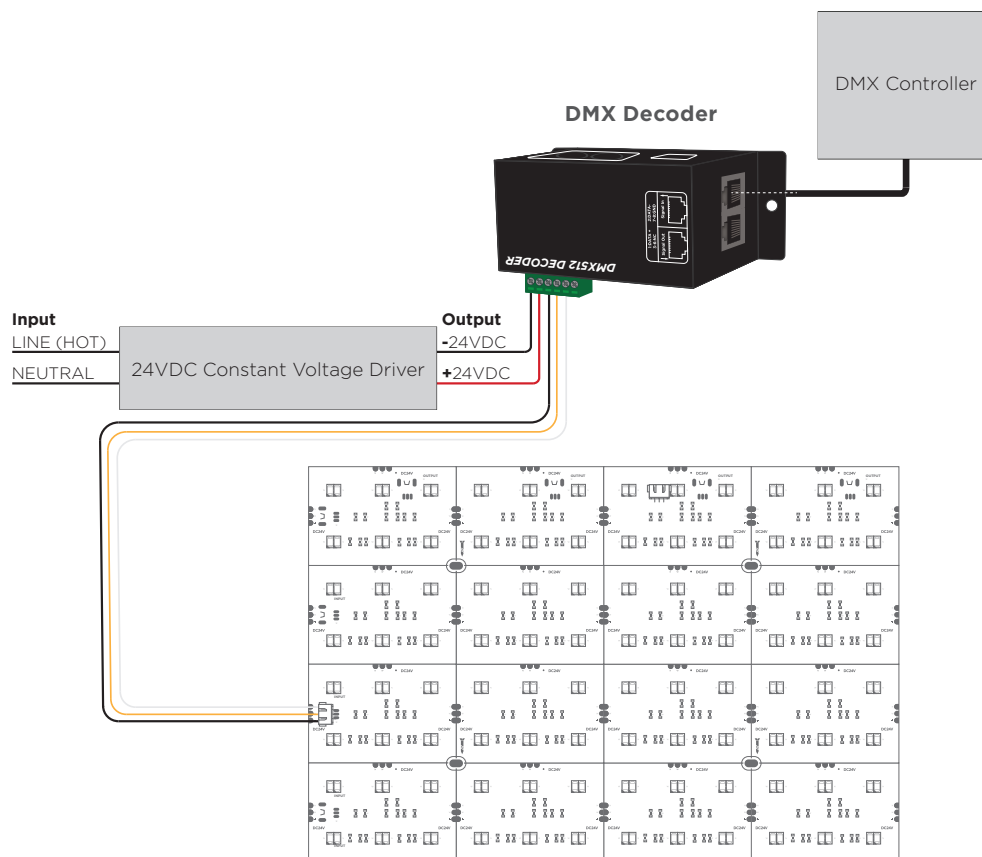
- LUXFLEX may be controlled with DMX controls. DMX decoders will be paired to your drivers to meet compatibility.
- For long runs, the last driver in a DMX control group must have the DMX signal terminated.
- DMX controllable LED drivers are wired to DMX decoders, which are wired to a DMX controller.

#### Using Dipswitch DMX Decoders

- DMX decoders with dip switches require the address to be manually set by the dip switches.

#### Using Digital DMX Decoders

LEDCONN does not provide factory programmed digital DMX controls; however, when a DMX decoder is wired to LUXFLEX, the decoder will automatically configure the address.



### LEAD WIRING

- Usually provided w/6-inch, 20AWG molex to hardwire and 3" 20AWG molex-molex connectors
- All LUXFLEX products use a common positive (+) lead wire. Please see the table "Wiring Color Codes" for more information.

### WIRING COLOR CODES

LUXFLEX Product Type	Min. Wire Gauge (AWG)	Wire Label	Charge
Tunable White	20	Neutral White (CW)	N
		Warm White (WW)	W
		Black Wire (V+)	+

### MANAGING VOLTAGE DROP

- Keep wires between flexible sheets and power supplies as short as possible to prevent voltage drop.
- We recommend keeping wire gauges no larger than 12AWG and 40ft long for optimal wire management.
- We recommend heavier wire gauges for longer distances. For runs longer than 10 ft, please call in for consultation.

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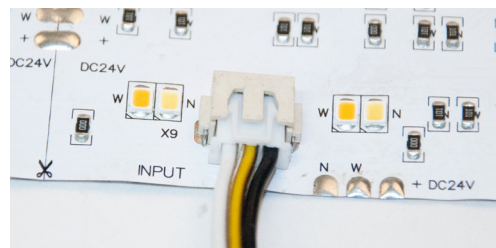
### CONNECTING A SINGLE PIECE/SHEET

- 1) To connect a single piece/sheet of LUXFLEX to the power supply, identify the female Molex® connector and match the polarity of the connector according to the polarity indicated next to the female Molex.
- 2) Make sure that the "N" next to the Molex aligns with the Neutral White white wire and the W aligns with the Warm White yellow wire.
- 3) The front of the male Molex connector, indicated in the images below, must always be facing up when inserting the wire into the connector.
- 4) To test light up your sheet plug in your DC connection (hardwire, Molex or other) and energize your power supply.
- 5) LEDs will immediately light up if the wiring is correct.

### UNDERSTANDING THE MOLEX CONNECTORS FOR TILING

- LUXFLEX sheets may be easily tiled together by utilizing the Molex connections provided on each cut sheet.
- One (1) power supply can power multiple panels if total power consumption of panels is lower than the power supply rated power.
- Use Molex-Molex® connectors to connect LUXFLEX LED flexible sheets together in "parallel."

### WIRING THE MOLEX® CONNECTOR



Make sure that the order of the colored wires corresponds to the order of the letters near the Molex® connector.

### MOLEX® CONNECTOR



N	NEUTRAL WHITE WHITE WIRE
W	WARM WHITE YELLOW WIRE
+	BLACK WIRE

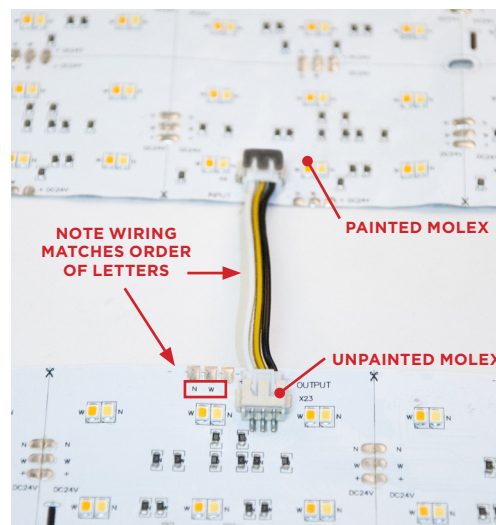
### JUMPER CABLE/TILING CONNECTOR



### TILING MULTIPLE SHEETS

- 1) To tile separate pieces or sheets of LUXFLEX Tunable White, identify the female Molex® connector and match the polarity of the tiling connector according to the polarity indicated next to the female Molex.
- 2) Make sure that the "N" next to the Molex aligns with the Neutral White white wire and the W aligns with the Warm White yellow wire.
- 3) The front of the male Molex connector, indicated in the images below, must always be facing up when inserting the wire into the connector.
- 4) Follow the same steps above for wiring the opposite end of the tiling connector into the female Molex of the separate piece or sheet you wish to connect.
- 5) LEDs will immediately light up if the wiring is correct.
- 6) Following the wiring diagrams provided by the LEDCONN team, connect pieces or sheets to power supplies following the same polarity rule.
- 7) **Every tiling connector should be input into 1 painted and 1 unpainted Molex.** Please note that if both ends of a tiling connector are ever input into Molex of the same color, the fixture will not illuminate due to incorrect charges.

### TILING LUXFLEX SHEETS OR PIECES



LIMITLESS TILING = ENDLESS CREATIVITY



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## STORAGE & MAINTENANCE

- Avoid getting the product wet and store it in a dry, clean area.
- If your LUXFLEX Tunable White product has been requested with a custom damp location-safe IP rating such IP65, then it may also be considered as a damp location product.
- Environmental factors will affect the type of IP rating required for your application. If a custom IP Rating has been requested, please consult with our engineering team for more specific storage and handling information.
- Relative humidity should never exceed 70% MAX for indoor applications.
- For optimal LED performance, make sure LUXFLEX™ LED Flexible Sheets do not exceed an operating temperature range of -13°F min to +140°F max (-20°C min to +60°C max).
- With the power off, LUXFLEX may be cleaned by gently wiping with a soft cloth, using care not to snag or harm the LED components.
- If LUXFLEX is dusty, turn the power off and apply compressed air to clear any debris.

## IMPORTANT SAFETY INSTRUCTIONS

**Installation of this assembly requires a person familiar with the construction and operation of the luminaire's electrical system and the hazards involved. If not qualified, do not attempt installation. Contact a qualified electrician if you are unfamiliar with methods for installing electrical wiring, secure the services of a qualified electrician.**

**LEDCONN LED fixtures are designed to meet the latest NEC requirements and are listed in full compliance with the relevant UL standard(s). Before attempting installation of any LED fixture, check your local electrical building code. All electrical connections must be in accordance with local codes, ordinances and the National Electric Code. Always confirm that the maximum wattage of the flexible sheet does not exceed the maximum wattage of the connected electrical circuit.**

- **IMPORTANT** Risk of fire or electric shock. Installation of this luminaire assembly requires a person familiar with the construction and operation of the luminaires electrical system and the hazard involved. If not qualified, do not attempt installation. Contact a qualified electrician
- **IMPORTANT** Do not connect directly to AC power!
- **IMPORTANT** Risk of fire or electric shock. Install this assembly only if the luminaires have the construction features and dimensions shown in the photographs and/or drawings
- **IMPORTANT** To prevent wiring damage or abrasion, do not pinch or damage expose wiring during installation. Keep away from to edges of sheet metal or other sharp objects
- Verify power is off before installing or un-installing.
- Do not use product if any LED flexible sheet components are damaged.
- The product has no user serviceable parts. Do not attempt to open the product or repair it on site. If damaged, please notify LEDCONN immediately for servicing.
- Do not exceed the specified voltage and current input (refer to the specification sheet for power limitations).
- Do not hot plug the light engine to an energized power supply, hot plugging may cause permanent damage to the LEDs.
- Avoid looking directly into the luminaire as the high brightness beam may damage eyes.
- LEDCONN's limited warranty applies only to LEDCONN's LUXFLEX Tunable White product.
- This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved.
- Do not make or alter any open holes in an enclosure of wiring or electrical components during installation.
- Please retain these instructions for maintenance reference.
- Test before installing; LEDCONN products undergo rigorous reliability testing before shipment, but due to unforeseen shipping and handling issues inspect all flexible sheets to confirm receipt of good, functioning luminaires.

## WARRANTY



**LIMITED  
MANUFACTURER  
WARRANTY**

These handling and mounting materials and any other communications related to the installation of LUXFLEX LED flexible sheets are offered for informational purposes only. Handling and mounting is the installer's responsibility. Under no circumstances is LEDCONN assuming any liability, express or implied, regarding the installation or application of any of its LUXFLEX LED flexible sheets, whether proper or improper. Further, LEDCONN assumes no liability for any costs associated with the installation or re-installation of LUXFLEX LED flexible sheets.

The standard warranty for this product is 5 years. Any damage caused by mishandling or improper installation of the product as outlined in this installation guide will void the warranty. Examples of mishandling or improper use include but are not limited to: not cutting along product cut lines; using power supplies or controls not recommended by LEDCONN; and using product in damp environments without proper damp location treatment and installation. Please consult a LEDCONN team member for more information about the warranty coverage.