XFL Flexible Linear LED

INSTALLATION INSTRUCTIONS

Xicato designs and delivers one of the broadest portfolio spot and linear light sources and electronics that enable architects, designers and building managers to create beautiful, smart spaces in which people love to live and work. With thousands of installations around the globe, Xicato continues to be a leading supplier of high quality lighting solutions. Xicato is defining the future of intelligent light sources by integrating electronics, software and connectivity. Founded in 2007, Xicato has offices in China, Europe and the U.S., with it's headquarters based in Silicon Valley.

xicato.com

WET
LOCATION

DC
ONLY

SAFETY AND HANDLING

It is important to read these guidelines completely to understand how the product works, and how it can be configured, cut to size, connected and installed so you can design your LED lighting layout. Installing flexible linear lighting is easy, however basic wiring skills such as stripping, splicing, extending, and connecting wires are required.

This product should be installed and serviced in accordance with local and national electrical code regulations by a qualified, licensed electrician. Failure to follow safety warnings, and installation instructions will void the warranty for this product.

- Do not stare directly into LED lights when illuminated.
- Do not expose XFL product to direct or indirect moisture.
- Do not crimp light strip.
- Do not use sharp objects to handle XFL product
- Only use cutting tools as indicated by these instructions and product markers.
- Unused product should be properly placed and stored in an anti static bag.
- XFL products are designed to provide indirect, accent style lighting.
- XFL products can also be installed inside a channel with diffusing cover for direct and indirect lighting. Instructions for installation in channel provided.

PRIOR TO INSTALLATION

Water Resistant XFL products are easy to install in straight, curved and irregular spaces with humid or outdoor conditions. Using high performance solid state lighting technology, light output, color accuracy and LED brightness, XFL products can create warm and relaxing environments or bright task lighting.

To maximize the lighting benefits of XFL, a few planning / design steps are recommended before starting the installation process.

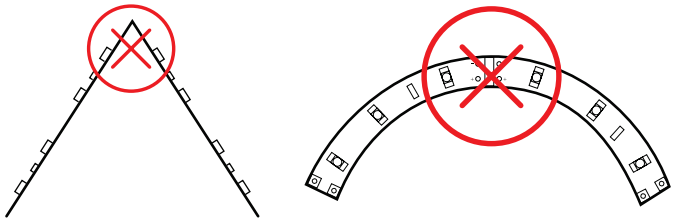
- Where will the power supply be located?
- How will the LED lighting be switched on and off?
- What is the best layout configuration for installation?
- How will wiring be run to the XFL product?

POWER SUPPLY

- XFL product requires a UL Listed Class 2 or SELV 24V DC power supply.
- This product operates on low voltage 24V DC power
- 24V DC power supplies are sold separately in different wattages.
- Polarity symbols should match on input cables.
- Do not connect XFL product to any high voltage AC power supply between 100V - 277V.
- Remove XFL product from reel before applying power.
- Apply power to test XFL product before mounting.
- Do not exceed maximum suggested run length. Doing so may cause inconsistencies in brightness and performance.
- Do not exceed 80% of power supply rated wattage. Doing so may cause overheating, shorting, and possible fire. Doing so may also shorten the lifespan of the power supply.
- Always disconnect the power supply before cutting or connecting XFL product.
- Never attempt any work before shutting off the electricity.

BENDING RADIUS

Bending may damage circuit traces.
Do not exceed maximum bend radius specified in XFL data sheet.



ADHESIVE APPLICATION

- The backing tape on XFL products is coated with a strong adhesive that is intended for a single application only.
- Apply only when a lighting location is fully determined.

WIRING CONSIDERATIONS

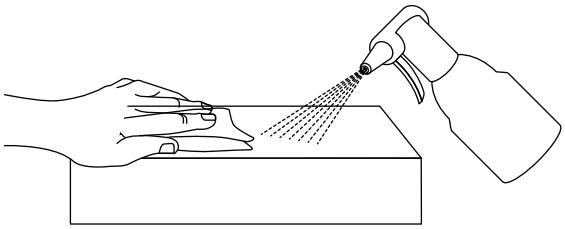
Important factors to consider when designing a lighting system are:

- The total lighting wattage the installation will require.
- The length and size of wiring needed to connect light strips to the power supply.

DIRECT INSTALLATION ON SURFACE

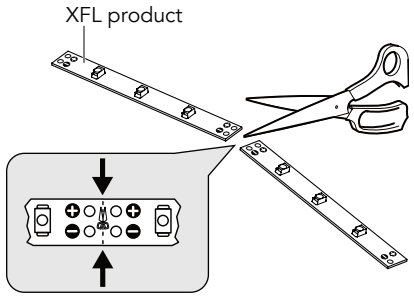
1

- Using a lint-free cloth, wipe the installation surface with 50/50 alcohol solution to ensure a clean mounting surface free of oils, silicones and dirt particles.
- A smooth mounting surface is required to ensure proper adhesion.



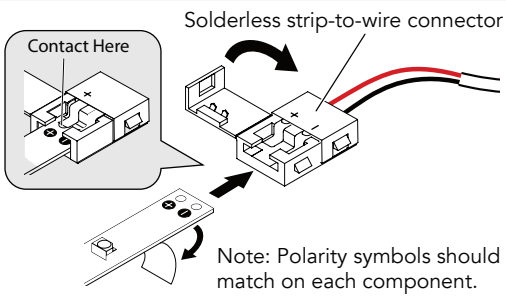
2

- After measuring mounting location, carefully cut the light strip to desired length.
- Make sure to ONLY cut along the dashed lines provided. These dashed lines divide two sets of positive and negative connection points.



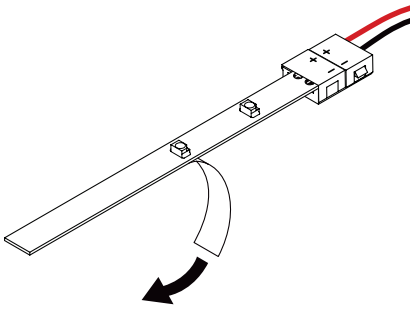
3

- Peel away a portion of the light strip adhesive backing at one end.
- Open the solderless strip-to-wire connector, and slide the strip end all the way into the solderless strip-to-wire connector.
- Close the hinged strip-to-wire connector.



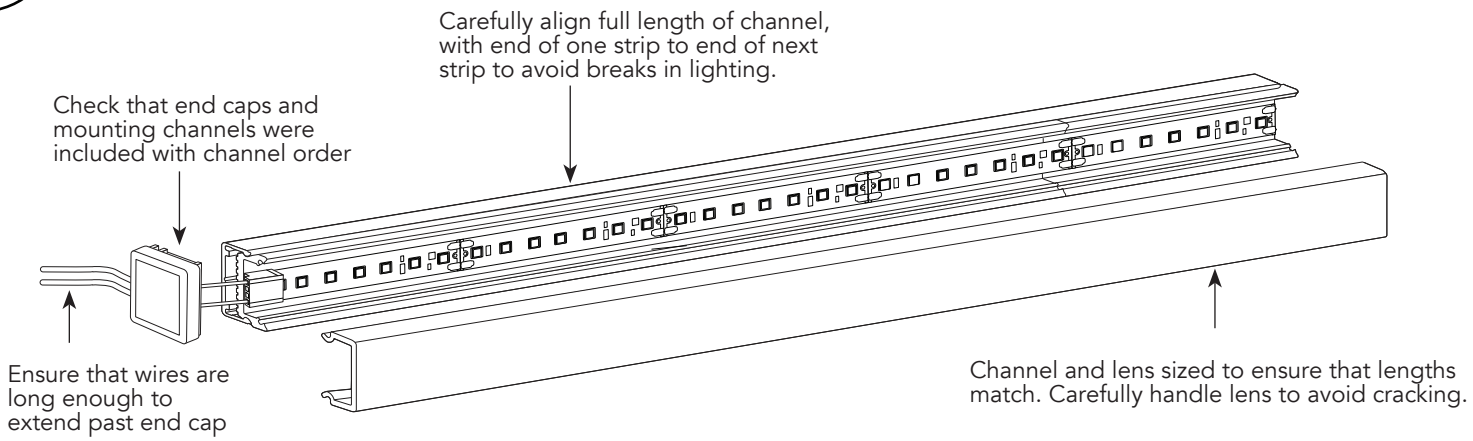
4

- Remove the remaining adhesive backing and attach the light strip to the desired surface.
- Press firmly to ensure proper adhesion.



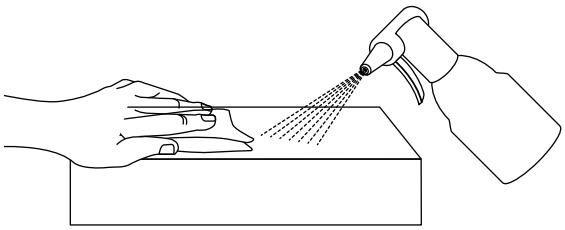
INSTALLATION IN CHANNELS

1



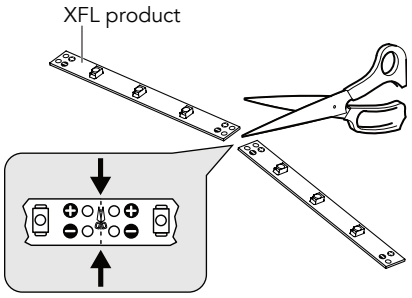
2

- Using a lint-free cloth, wipe the installation surface with 50/50 alcohol solution to ensure a clean mounting surface free of oils, silicones and dirt particles.
- A smooth mounting surface is required to ensure proper adhesion.



3

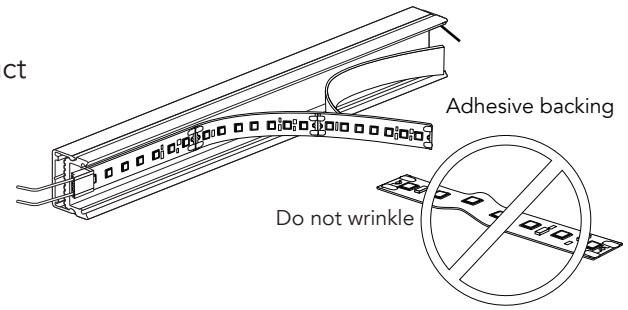
- After measuring length of mounting channel, carefully cut the light strip to desired length.
- Make sure to ONLY cut along the dashed lines provided. These dashed lines divide two sets of positive and negative connection points.



INSTALLATION IN CHANNELS (CONTINUED)

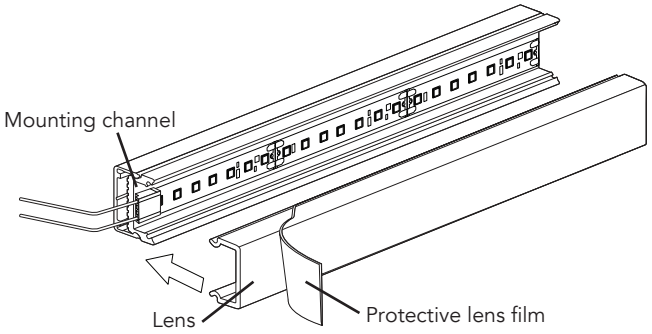
4

- Remove adhesive backing starting at one end of XFL product
- Remove backing slowly while adhering XFL product to mounting channel, making sure not to wrinkle XFL product.
- After removing backing and adhering XFL product to mounting channel, press firmly to ensure proper adhesion.



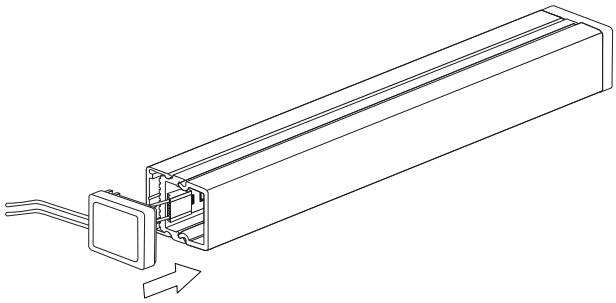
5

- Attach the snap-in lens to the channel to protect XFL product and diffuse lighting.
- Remove protective film from surface of diffuser lens.



6

- Thread wires through or underneath end cap
- Press end-caps firmly into place at either end of channel



RE-SEALING IP67 XFL

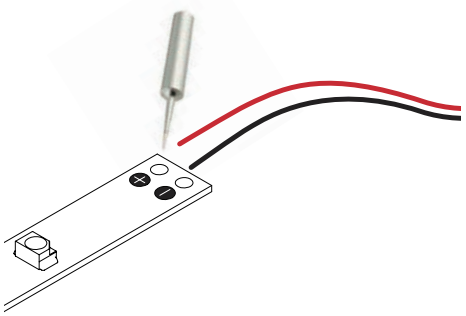
1

- After measuring mounting location, carefully cut the light strip to desired length.
- Make sure to ONLY cut along the dashed lines provided. These dashed lines divide two sets of positive and negative connection points.

RE-SEALING IP67 XFL (CONTINUED)

2

- Solder the lead wires to the tape light, keeping the correct polarity.
- For these procedures, it is recommended that basic wiring techniques are followed.



3

- Fill the end cap halfway with a non-acidic neutral silicone sealant, such as Loctite Superflex SI 5050CL, Dow Corning 737 or Momentive RTV-11.
- If sealing the wired side of the LED tape, place a small puddle of sealant where the wires connect to the strip.

4

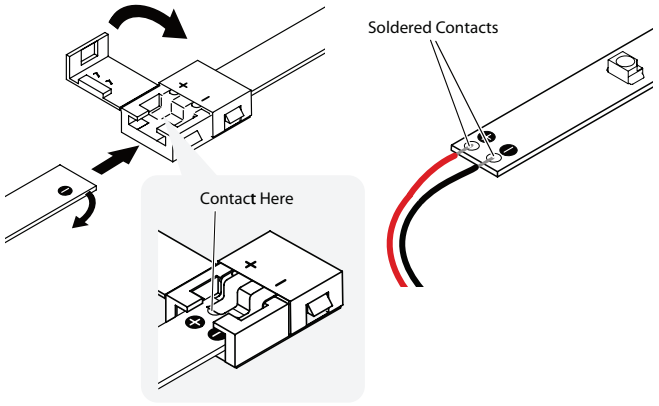
- Insert the end cap on the end of the strip until the back wall of the end cap is touching the end of the strip.

5

- Allow 24hrs for the silicone sealant to fully cure.

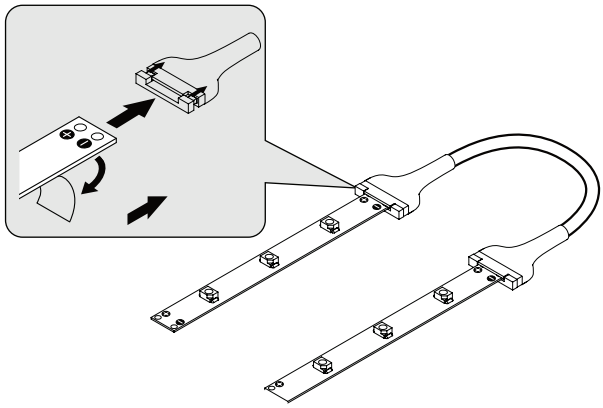
USING SOLDERLESS CONNECTORS

- There are multiple options for connecting XFL. The procedure at right illustrates how to connect strips using solderless strip-to-wire connectors.
- Strip-to-wire and strip-to-strip connectors are available for all XFL products. Compatible connectors must be selected for specific XFL product type.
- Though solderless connections are generally easier to use than soldering contacts, in some circumstances, soldering contacts may be necessary. For procedures such as soldering and splicing, it is recommended that basic wiring techniques are followed.



USING STRIP INTERCONNECTS

- Another option for quick, easy and flexible connection between LED light strips is the light strip interconnect, shown at right.
- Interconnects are a useful option in applications where you want to easily join light strips over separated surfaces.



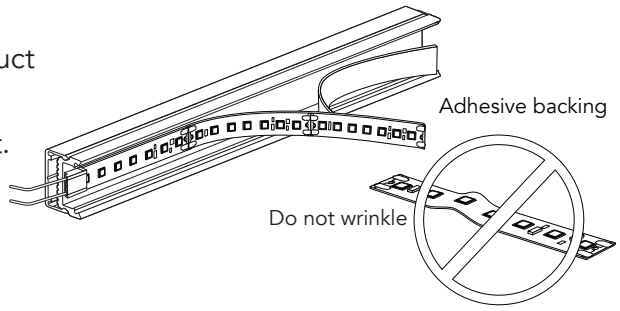
MOUNTING OPTIONS

- If surface is electrically conductive, isolation between soldering points and mounting surface is necessary.
- Do not install LED tape in a location with direct exposure to the sun or where the operating or storage temperature is outside the listed temperature range of the product.
- Although XFL products can be installed in curved and irregular spaces, avoid sharp bends or bending on the solder joints as you could damage the light strip. If an LED is inadvertently damaged and fails to light, the remaining LEDs will continue to operate.

USING MOUNTING CLIPS

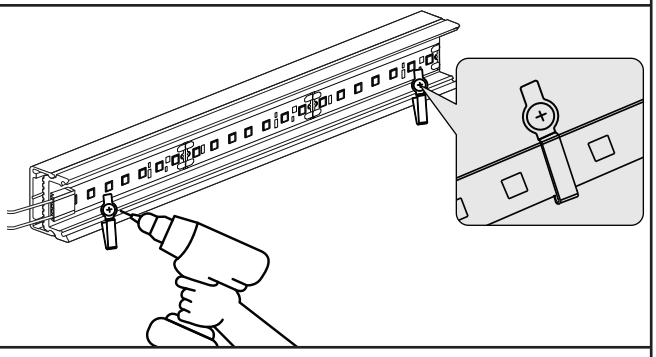
1

- Remove adhesive backing starting at one end of XFL product
- Remove backing slowly while adhering XFL product to mounting channel, making sure not to wrinkle XFL product.
- After removing backing and adhering XFL product to mounting channel, press firmly to ensure proper adhesion.



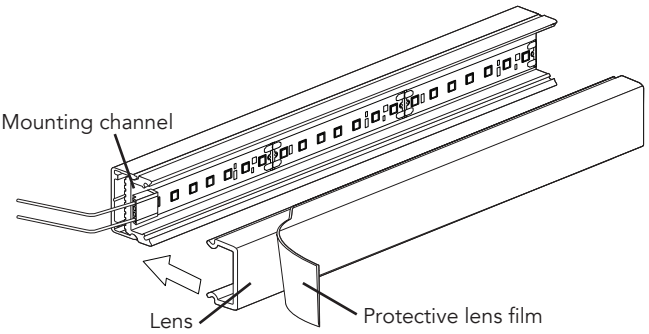
2

- Use electric drill and/or screwdriver to install mounting clips as shown.
- Using mounting clips in addition to the XFL adhesive is optional, but may be needed depending on the specific mounting location as well as installer's judgment.



3

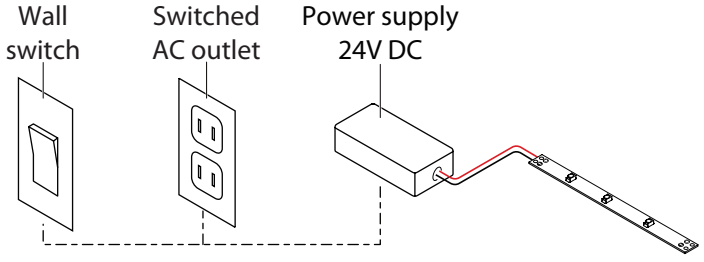
- After attaching mounting clips, attach the snap-in lens to the channel to protect XFL product and diffuse the light.
- Remove protective film from surface of diffuser lens.



WIRING AND CONNECTION OPTIONS

1

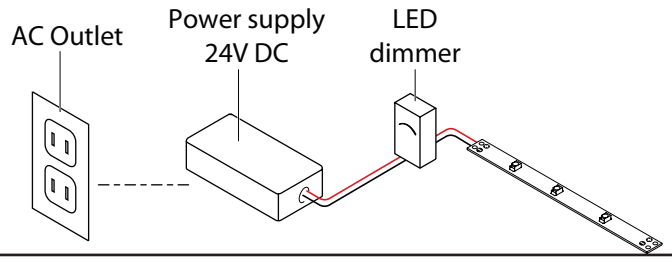
- Light strip power (off / on) can be controlled using a wall-mounted switch.



WIRING AND CONNECTION OPTIONS (CONTINUED)

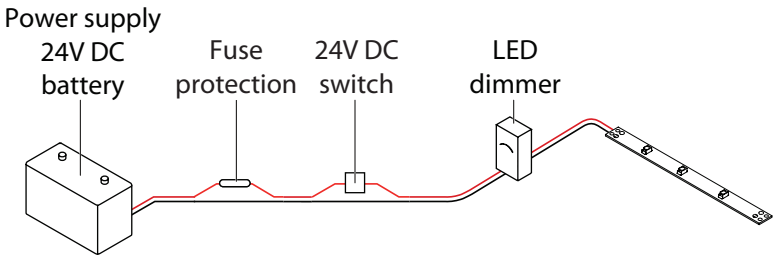
2

- Light strip brightness can be controlled using an LED dimmer switch.



3

- Light strip can be powered directly by a 24V battery in the absence of an AC outlet.

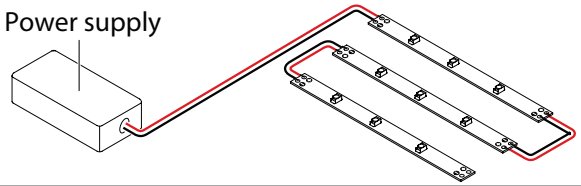


* Note: Consult your Xicato Sales Rep. for Bluetooth Mesh capabilities.

LAYOUT OPTIONS

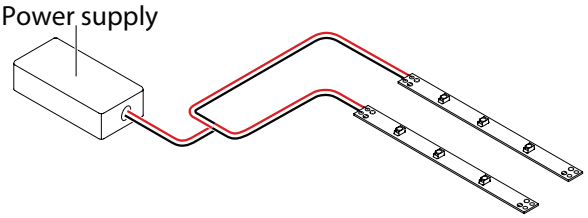
1

- Light strips are powered in a continuous "Straight" run.
- Strips that are furthest from the power supply are more likely to exhibit voltage drop.



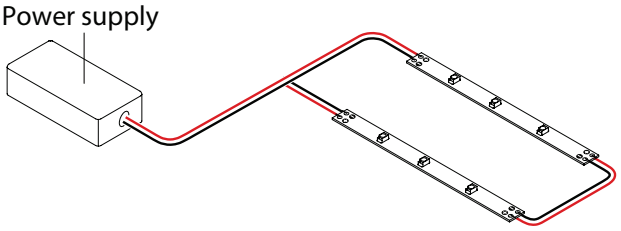
2

- Light strips are powered from a spliced "Centerfeed" connection.
- This type of layout tends to produce more consistent brightness and color between strips.



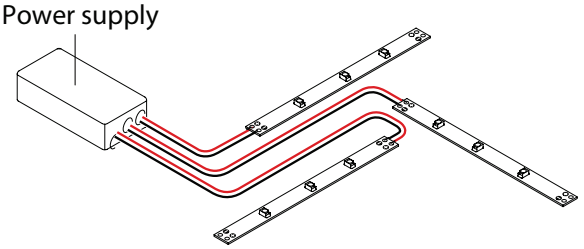
3

- Light strips are powered from a single looped "Loop-back" connection, which also produces more consistent results.
- Often used for room perimeter and cove applications.



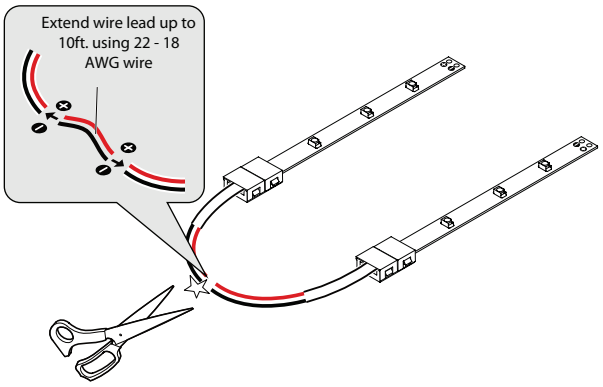
4

- In the "Array" option, light strip "legs" are individually powered.
- Total wattage should be determined so as not to overload power supply.



LENGTHENING WIRING

- For longer wiring needs between XFL products, another option is to splice in longer lengths of wiring between two solderless strip-to-wire connectors, as shown at right.
- Wiring lengths can be increased up to 10 ft (3.05 m), using 22-18 AWG wiring.



VOLTAGE DROP

- Voltage drop is the normal loss of voltage that occurs as power flows along a wired connection in low voltage systems.
- Risk of voltage drop increases as the length of a wired connection is increased.
- Wire length and thickness as well as total light wattage can influence the amount of voltage drop.

Recommended Maximum Wire Lengths - Power Supply to Light Strips

22 AWG Wire		18 AWG Wire	
Light Strip Length	**Max Wire Length**	**Light Strip Length**	**Max Wire Length**
48 ft (14.63 m)	10 ft (3.05 m)	48 ft (14.63 m)	20 ft (6.10 m)
36 ft (10.97 m)	8 ft (2.44 m)	36 ft (10.97 m)	16 ft (4.88 m)
24 ft (7.32 m)	6 ft (1.83 m)	24 ft (7.32 m)	12 ft (3.66 m)
12 ft (3.66 m)	4 ft (1.22 m)	12 ft (3.66 m)	8 ft (2.44 m)

TROUBLESHOOTING QUICK GUIDE

Problem	Likely Cause	Solution
XFL product does not light up.	Incorrect, inadequate or malfunctioning power supply.	Make sure power supply is turned on and receiving power.
		Use a multimeter to test and ensure that XFL product is receiving 24V DC power.
	Incorrect wiring.	Confirm correct polarity (+ to + and - to -) when joining tape lights as well as when connecting to the 24V DC power supply. Check at every connection point to ensure polarity is not reversed.
Only part of XFL product is lit. OR XFL product blinks on and off.	Incorrect wiring or insecure connections. Power supply is inadequate for the selected length of XFL product.	Check connections on unlit portion of XFL product.
		Ensure terminal screws or metal prongs of splice connectors are pierced through or contacting solder pads.
		Install a higher wattage power supply or reduce wattage by shortening length of XFL product being used.
	Overheated power supply. An overheated power supply will trip the internal auto-reset of the power supply repeatedly, turning the system on / off.	Reduce power supply load by shortening the lengths XFL product being used. Consider relocating power supply to a cooler location with increased air flow.
Inconsistent brightness along XFL product	Voltage drop from wires running between the power supply and XFL product.	Decrease the length of the 24V DC power feed wires or use thicker gauge wires between the 24V DC power supply and the XFL product.
	XFL product exceeds maximum recommended run length.	Use shorter lengths of XFL product.
XFL product overheats	Ambient temperature is above recommended rating.	Ensure installation environment is rated for XFL product.
	Voltage input is higher than recommended voltage.	Confirm that power supply output is 24V DC.

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For the most up-to-date data sheet, please visit xicato.com/support.

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