

We have developed this series of field installation guidelines to assist you in correctly installing fixtures and transformers, ensuring customer satisfaction and trouble-free service. If you have any questions, please call your local distributor or the FX TechLine at 800-733-2823 before proceeding. Follow all NEC guidelines and local electrical codes. For further information, see our website: [www.FXL.com](http://www.FXL.com)



### TYPICAL INSTALLATION:

SEE PLAN LEGEND FOR WATTAGE, BEAM SPREAD AND ACCESSORIES

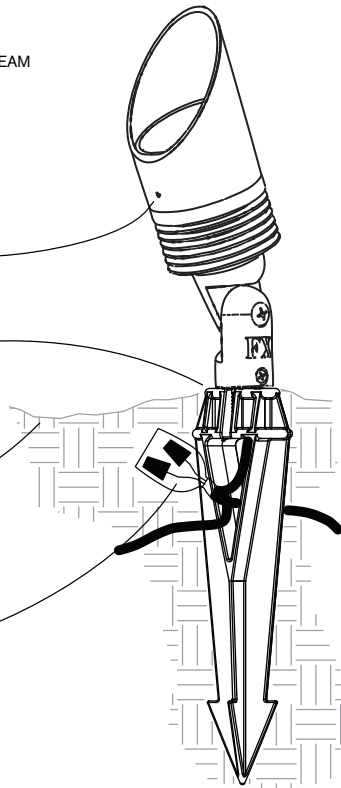
AIM FIXTURE A MINIMUM OF 10° OFF VERTICAL TO ALLOW WATER AND DIRT TO DRAIN OFF LENS CAP

FX SUPERSPIKE MOUNT

FINISHED GRADE

LOW VOLTAGE CABLE WITH FX LITESPLICE

LEAVE 18" MIN. LOOP COILED BELOW FIXTURE FOR SERVICE



### INSTALLATION GUIDELINES:

#### DO NOT EXCEED 15 VOLTS IN THIS FIXTURE

The LEDs in this product function ideally when the incoming voltage is between 10–15 volts. Voltages outside of this range may damage the LEDs, shorten their life, and cause unsatisfactory performance. **The use of improper voltage voids the product warranty. Only use a UL 1838 approved power supply such as the FX Luminaire PX transformer series.**

The LED board in this product is designed to offer years of use without replacement. Should you have a need to replace the LED board, please contact your local FX distributor for a board replacement and the necessary instructions.

**RISK OF FIRE WARNING: DO NOT USE FX FIXTURES WITH ANY STYLE OF TRANSFORMER THAT EXCEEDS 15 VOLTS ON THE SECONDARY.**

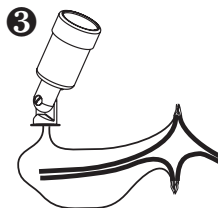
### WHY USE THE LITESPLICE?

Without a waterproof splice connection, any system will develop voltage loss and low grade shorts. Below is our proven method of ensuring you and your client years of trouble-free high performance from the FX System.

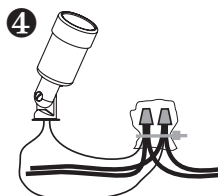
**FX does NOT recommend the use of Quick Clip style connectors or pre-filled wirenuts because they are not waterproof and can rot out creating resistance and shorts.**

**1**  
Begin with a 14, 12, or 10 gauge direct burial low voltage cable mainline. (Use stranded 12 gauge THHN 120 V style wire for conduit runs such as wall lights or trellis lights.)

**2**  
Cut the mainline cable in half and strip back 3/4" of the insulation from each side to expose the multi-strand copper conductor.



Join one of the fixture's conductors to each side of the mainline as shown in the diagram. Since there is no polarity in low voltage, it doesn't matter which side is which when joining the conductors together. Install a wirenut on each side. Now is the time to test the individual circuits (cables) for voltage drop. If you followed the Circuiting Guidelines included with the FX MultiTap Transformer, you should be able to provide each fixture with between 10–15 volts with all lamps installed and operating. Test now before you install the SpliceGel because it is easier to insert the VoltMeter's probes inside the wirenuts to get a reading.



Pump about two squeezes of SpliceGel into a baggie, and insert both wirenut connections into it. Push out the air, and work the Gel into the bottom of the wirenut assuring a waterproof connection. Install the cable tie as shown and cinch down to complete connection. The Gel will become hard in about 3 days. We recommend leaving 12–18" of slack at each fixture to allow for relocation or if you need to splice in additional cables in the future. Since this is a permanent splice solution, you will need to cut it off and start from scratch to add cables to the splice.

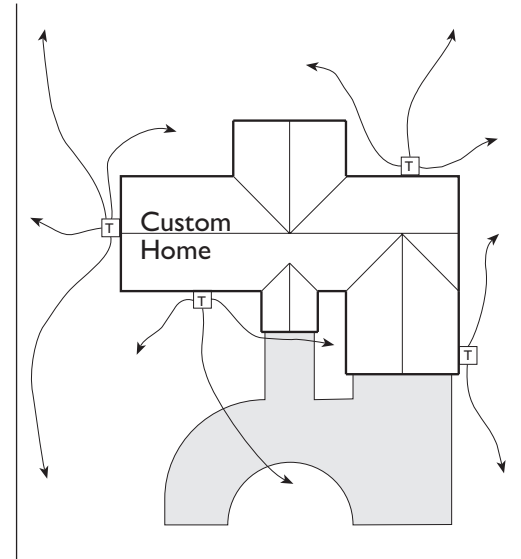
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## SINGLE TRANSFORMER

When using only one transformer, it is very important to center the transformer on the wattage load. If the project calls for 135 watts in both front and back yard, the PX-300 or PX-600 should be centered on the side of the house that will receive the most lighting. A common mistake is to locate the single transformer on the service side of the house or in the garage, which might result in excessively long cable runs to reach lighted areas. The primary goal in laying out low voltage systems is to minimize cable runs because of voltage drop.

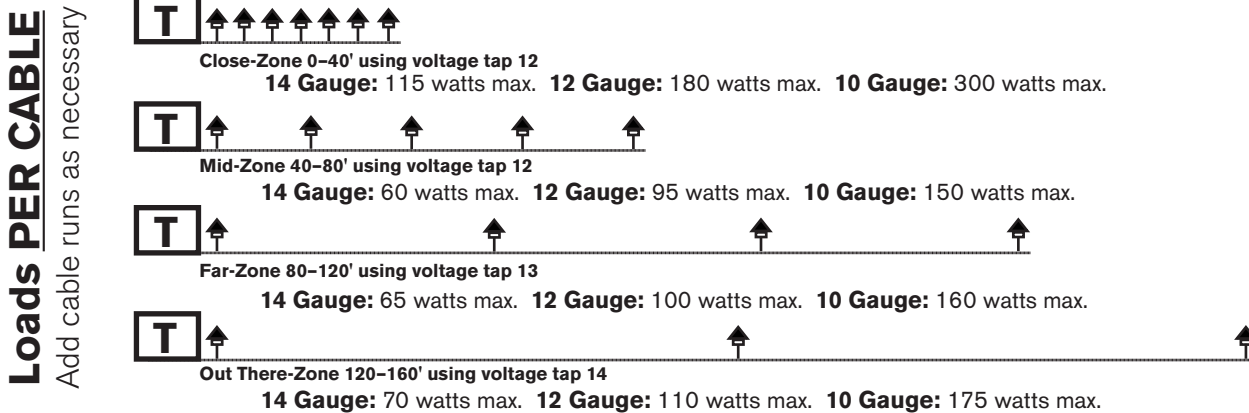
## MULTIPLE TRANSFORMERS

A common mistake in laying out multiple transformer circuits is to group several transformers in one location because of utility or visual considerations only. As with any low voltage layout, the prime directive should be to locate the transformers as close to the fixtures as possible in order to minimize cable runs. The other multi-transformer layout consideration is "use zoning". Having several transformers allows the client to selectively control light in separate areas. This approach is similar to irrigation design in that the goal is to individually control areas that have similar needs. In lighting, a recreation area has different lighting needs than does a front entry. Therefore, the lights that serve these different lighting use areas need to be on separate transformers and switch controls.



Sample diagram of home with transformer and lamp placement

## CIRCUITING GUIDELINES



For maximum efficiency, input voltage to LED fixtures should be between 10 and 15 volts.

## LED LIFE

- LED manufacturers define useful life based on the estimated time at which LED light output will depreciate to 70% of its initial rating.
- On board driver converts alternating currents between 10 and 15 volts to the correct direct current. Voltage should be measured at each fixture when all of the LEDs on the circuit are operating.
- The on board driver also acts as a voltage regulator, automatically adjusting the outgoing voltage based on ambient temperature to assure LEDs last through their estimated useful life.
- Voltage can be regulated by adjusting circuit load/run by using FX PotenzaX Transformers.
- To determine circuit voltage, use a digital voltmeter.