

INSTALLATION INSTRUCTIONS

**FOOD TRAILER ROOF PERIMETER
LED LIGHT KIT**



RULE THE NITE™

BOOGHEY LIGHTS®

Family Owned Motorsports Lighting Since 1989

800.847.1359

www.BoogeyLights.com

Thank you for purchasing genuine Boogey Lights® LED Lighting products! We know you're anxious to get started but we strongly recommend taking time to read through these instructions. You'll likely save yourself some grief and aggravation if you do. For additional installation support refer to www.BoogeyLights.com or give us a call at 800.847.1359 for assistance.

ABOUT THIS GUIDE

Installation of this led light kit takes 6 to 8 hours depending on whether or not you're mounting the aluminum channels first. Also depends on where you mount the LED controller and power converter inside the trailer. There are six different mounting locations in this kit and all of the power leads need to be carefully run up and over the side to the roof. The power leads need to be secured to the roof using zip tie mounts (3m tape + screwed in). We recommend putting some butyl tape too over every zip tie mount. A ¾" to 1" hole will need to be drilled in the roof to allow the power lead cables to enter the trailer and connect to the LED controller. The front three LED strips are wired to ZONE 1 on the LED controller. The rear three LED strips are wired to ZONE 2 on the LED Controller.

In putting together this installation guide we assume the installer has access to and has a basic understanding of using the tools needed to complete this installation. We also assume the following:

- The installer understands 12vdc electricity, making electrical connections using crimp on connectors, the importance of having a fuse in the circuit at the battery location and polarity.
- How to access the batteries, remove / connect battery connections, how to make electrical connections (e.g. crimping) and the importance of making sure all electrical connections are sealed properly (e.g. no water intrusion).
- How to run cabling such that the power leads and related wiring are secured in a way as to not create a hazard when pulling the trailer.
- Capable of getting on top of the trailer (or at least up to the top of the trailer) to safely run the power lead connections on top of the roof and then a hole in the roof where the LED controller and power supply will be located inside the trailer.

TOOLS & SUPPLIES YOU MAY NEED

Ladder, power drill, hole saw drill bit (¾" to 1") , wire cutters, wire strippers, crimping tool, electrical tape, rubbing alcohol, shop rags, extra zip ties, silicone sealant.

If you're installing our mini T12 aluminum channels (and then mounting your LED strips to that channel) you're also going to need either rivets (+ rivet gun) or sheet metal screws (+ screw gun). The length of the rivets/screws depends on the construction of your food trailer but generally, 1/2 " to 5/8" rivets/screws will work. We prefer large flange pop rivets over screws. If you opt for screws, make sure they're either flat head or round head (not hex or pan head).

BEFORE YOU START

We suggest you carefully review the following before you begin:

1. It's simply not possible to provide detailed instructions for all installation scenarios. The information in this manual is intended to be used as a guide. You may need to vary your installation based on your unique situation. This is particularly the case with electrical wiring and LED placement.
2. Make sure you have ample area in which to work and that the area is protected from rain or cold temperatures. The 3M adhesive tape works best if applied when the air temperature is above 40 degrees (and of course is DRY).
3. Make sure you know where your electrical connections will terminate. For this kit we've included a 20 amp 120vac to 12vdc power converter since most food trailers have 120vac power available. We also include some 3M Quick-Lock to mount the controller to the wall however it's ultimately up to you as to where you want to install it.

The LED power leads coming from the LED controller will need to exit the food trailer, usually through the roof (be sure to seal that hole). The 12vdc power will need to connect to the 120vac power supply which then plugs into an available 120vac outlet. If you have 12vdc power available, you can bypass the 120vac power converter however if you do, make sure that 12vdc circuit is capable of supporting a 20 amp max draw. It's important this be done properly. If you are unfamiliar with 12vdc power, we strongly suggest you ask someone who is familiar with it to assist you in this process.

We also include some LED power lead feeder cable that can be used to extend the power leads for the LEDs coming out of the LED Controller to the LED strips. See diagram of suggested wiring layout.

4. Bench test your setup. We know this takes a few extra minutes but we **STRONGLY** suggest you bench test your lights AND your controller on a table before doing anything further. While we test every light strip and controller before shipping, bench testing your lights will eliminate the possibility of any problems with the lights or controller before mounting. Also, the process of bench testing gives you an opportunity to understand the wiring system without interference from other wires, connectors and cables. You can use any 12vdc battery to do this (e.g. car battery, motorcycle battery, lawn tractor battery or 12vdc power supply). Bench testing takes an extra 10 or 15 minutes. You can also use a common 9vdc battery to test your lights if you don't have a 12vdc bench testing power source available (the lights won't be as bright). It's simple to do and can potentially save you hours of time and frustration down the road. Please take our advice. Bench test your LEDs AND controller before mounting.

BTW ... Did we mention we suggest bench testing your LEDs and controller before installing? You would be surprised at how many people don't take our advice on this step.

WHAT'S INCLUDED

In addition to the LED light strips and power leads, this kit includes some additional items you'll need. Here's a quick review of those items and why we include them. Some of the photos at the end of this guide reference these items too.

- 18AWG or 20AWG Feeder Cable – 4 Conductor. Use this cable to extend the LED power leads to the LED controller. See the top view diagram included later on in this document.
- 3M Adhesion Primer. Used to prep the surface before attaching the LED strips AND the 3M quick-lock tape. *Always, always, always* use this adhesion primer with 3M adhesive products if you want the bond to hold. This includes zip tie mounts.
- 3M Quick Lock Reclosable Tape. This is a heavy duty “Velcro like” product. Used to mount the LED controller and power converter to the wall. Be sure to apply 3M Adhesion Primer to the mounting surface and the back of the LED controller.
- Split Wire Loom / ¼”. All power leads need to be protected from the elements and chaffing. Wrap them in this first.
- Split Wire Loom / ½” . We include the ½” split wire loom to be used when you're connecting multiple power leads together. Helps protect that connection.
- Butyl Tape. We use butyl tape to seal the hole in the roof as well as help secure the power leads to the roof. We also use it in a few places on this installation to help hold power lead wires in place. Butyl will only work if you apply it to a clean surface so make sure you first clean the surface with rubbing alcohol.
- Zip Ties. We include some zip ties which you'll need to secure the LED power leads to the trailer's roof.
- Crimp On Wire Connectors. These are used to secure the wire connectors at the LED Controller as well as making all power lead connectors to the feeder cable. We recommend wrapping each connector after it's crimped with electrical tape and then split-loom to protect it from water intrusion.

NOTE: Every installation varies a little so you may need to purchase additional items (or more of them such as zip ties) for your install.

CUTTING YOUR LEDS- If you need to cut your LED strip you can do so as long as you cut in the proper location – which is every three LEDs as shown in the below photo. Cutting incorrectly could damage your lights and is not covered by the warranty. If you cut the strip, be sure to use the included heat shrink tubing to seal the cut end. You can also use silicone found at your local hardware or RV store. If you do need to cut your LED strip, we strongly suggest doing so BEFORE you mount the strip.



Cut Locations

Follow these steps for mounting your LED strips:

- The area where you are mounting the LEDs has to be clean: free of all dirt, oil or anything that might affect the LED from sticking. You only get one opportunity to mount the LEDs so it's critical the area be prepared properly.
- Use rubbing alcohol to clean the area where you are going to mount the LED strip. Be sure to let the alcohol dry completely before proceeding to the next step. (Note: Do not use acetone or similar cleaner).
- Next, use the 3M Adhesion Promoter supplied with your kit to "paint" on the promoter where you are going to mount the LED strip. **This is an important step. Do not bypass.** Allow the promoter to dry for 60-90 seconds.
- Peel off the red backing tape that protects the 3M adhesive tape on your LED strip. Be careful not to let the tape touch anything. The 3M backing tape on these LED strips are one-use only. They cannot be reused.

Do NOT bend the LED strip in a radius of less than 2 inches.



Do NOT bend the LED strip on a horizontal plane.



Carefully push the LED strip to the area you have prepared. You will want to apply only enough pressure to the strip to make sure it is firmly mounted. *You only get one opportunity to do this.* Once the LED strip touches a properly prepared surface that has been promoted, that LED strip will be very difficult to remove. Moreover, if you do remove the LED strip, the strip cannot be used again without adding another layer of 3M adhesive tape to the back.

DO NOT press too hard as too much pressure can damage the LEDs and connecting wires in the strip. Also, do not pull, stretch or twist the LED strip. Too much tension on the strip will also damage the LEDs such that some of the LEDs in the strip will not illuminate. The strip must be mounted flat against a single continuous mounting surface, in a straight line. Really important that the ENTIRE STRIP be stuck to the mounting surface and that you NOT attempt to span across multiple mounting surfaces.

MOUNTING ALUMINUM CHANNELS

If you purchased the optional aluminum channels with diffusers, we recommend riveting the aluminum channels to the trailer instead of screwing. The reason is the rivets will provide a smooth surface for the LED strip to lay on top of. Depending upon your trailer's build structure, you can usually use a 1/2" or 5/8" long rivet (1/4" diameter). We recommend a large flange pop rivet for the extra holding power. If you're going to use screws, make sure you're using either flat heads or round heads. Do not use hex or pan head screws. The reason is the sharp edges of the hex/pan head screws can work their way through the bottom of the LED strip and into the PCB which will cause the LED strip to short out.

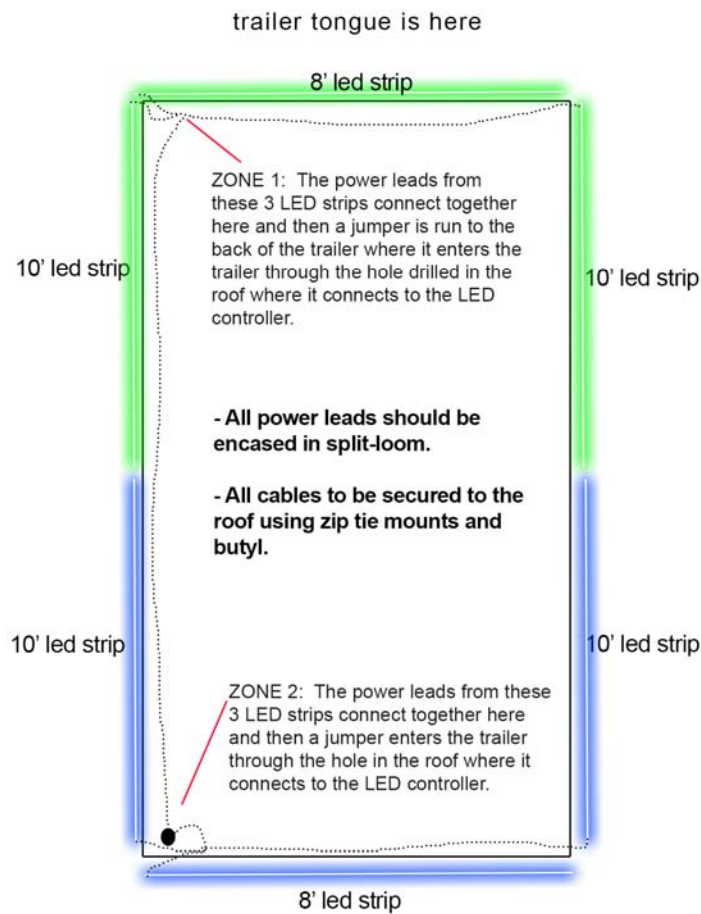
LED PLACEMENT

We recommend mounting the LED strips (and the channels if purchased) as high up on the trailer side as you can; ideally flush with the roof or as close as you can get it. It's important though that the mounting surface be smooth, clean and one continuous flat surface. Do not attempt to span gaps with the LED strip. See the photos and diagrams below for placement on an 8' x 20' food trailer.



Here's a view looking down on top of the trailer. We use feeder cable to connect the front three LED strips to the rear. Use the included crimp on cap connectors to make your power lead connections. It's important all exposed power lead cables be encased in wire split-loom. Our kit includes ¼" split loom for this purpose. Also, be sure to anchor all cables down to the roof. We have included Butyl tape and zip tie mounts for this purpose. First put the zip tie mounts down (use 3M adhesion primer first – or even better – rivet or screw them into the roof) and then once the cable is secured to the zip tie mount, place Butyl tape on top of it. Wind resistance against the cables as the trailer moves down the road will tend to pull the cables up so it's important to make sure it's anchored securely. Plus, if you did use a rivet or screw to hold down the zip tie mount, the butyl tape will seal that hole.

view looking down on the trailer top

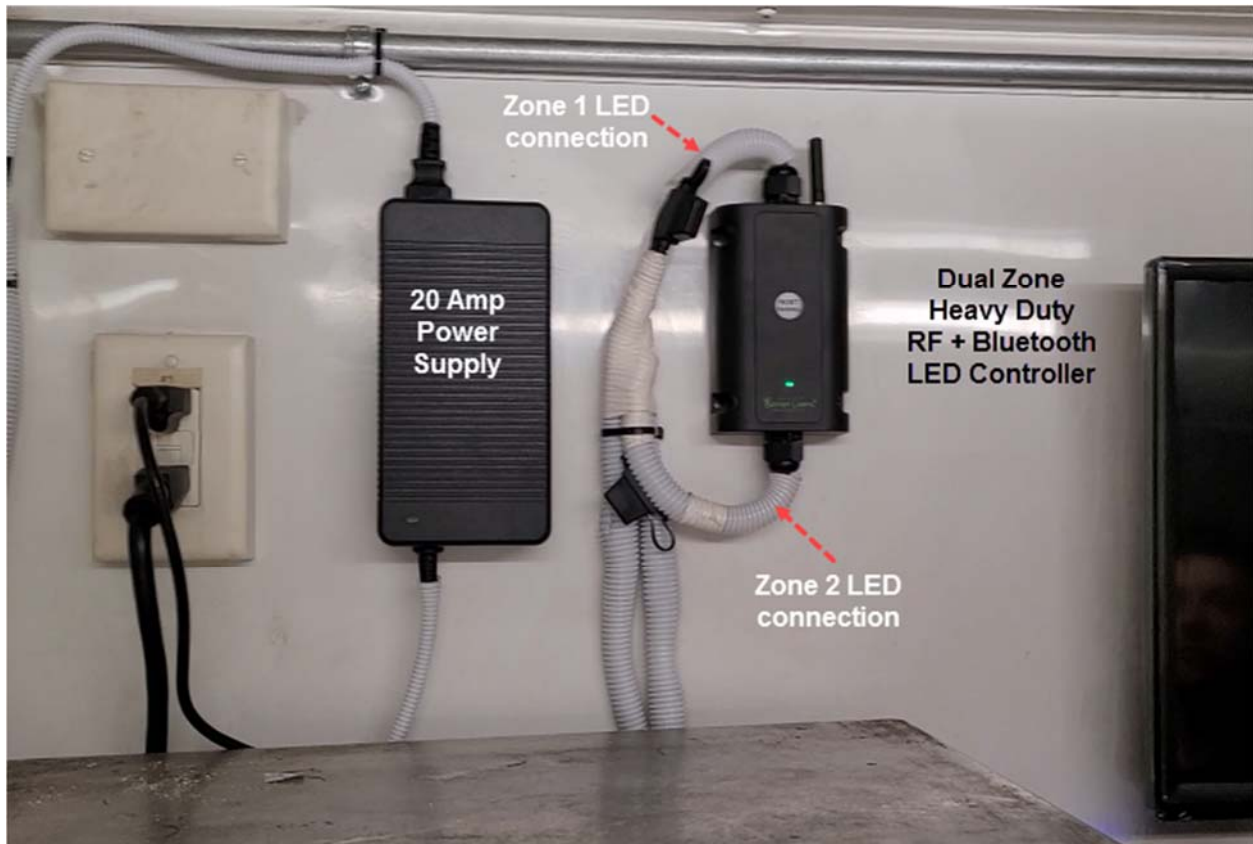


Example of an 8' x 20' Food Trailer

Here's a photo of a food trailer installation we recently did. This customer choose to have us install the mini T12 aluminum channels first, then mount the LED strips to the aluminum channel (with the plastic diffuser snapping in on top). Whether you use the aluminum channel or not the installation is the same in terms of the lighting configuration. We recommend wiring the front 3 LED strips to ZONE 1 and the rear 3 LED strips to ZONE 2. Doing so provides some interesting visual effects options to attract attention.



Here's a view of how we mounted our DUAL ZONE LED controller inside the food trailer. Both the LED controller and the power supply fasten to the wall using the included 3M Reclosable Fastening system. We recommend locating the controller and power supply somewhere you can get to it like shown in this photo. Note the location of the two 12vdc blade fuses (one for each lighting zone). They need to be accessible as well.



Remember to seal all holes you drill in the trailer. Use silicone sealant or similar for this.

Before closing/wrapping all electrical connections we strongly suggest testing the lighting system. Nothing is more frustrating than closing up all connections and making it look nice only to find out moments later something isn't working correctly. Don't ask us how we know.

QUESTIONS? If you have questions about the installation, give us a call at 800.847.1359. We'll be happy to talk through your installation over the phone.

DUAL ZONE, HEAVY DUTY COMBO CONTROLLER

Bluetooth + RF / Wiring Diagram

The Dual Zone Heavy Duty controller has TWO 12vdc, 20amp inputs. It's important to connect both of them to a 12vdc power source capable of handling the amperage. This controller can power a maximum of 1500 RGB LEDs per zone. Do not overload.

NOTE: If the distance from the LED Controller to the battery is more than 18", we strongly recommend adding another IN-LINE FUSE at the battery.

