RULE THE NITE™
BOOGEY LIGHTS
Family Owned Motorsports Lighting Since 1989!

INSTALLATION GUIDE

CARGO / UTILITY TRAILER
INTERIOR LIGHT KIT INSTALL GUIDE

IMPORTANT! No two installation scenarios are the same. Accent lighting is highly subjective. Not everyone shares the same lighting or installation quality goals. Some folks are OK with twisting wires together, others want to solder and heat shrink them. Some folks are OK with running wires where they may be seen or unprotected to save money/time, others want a tidy, clean install so they wrap plastic split-loom around all exposed cables. Some folks are OK with mounting their LED strips to whatever surface they can find, others want to take the time necessary to build out appropriate mounting surfaces to provide the best lighting effect on their vehicle and maximize the longevity of their lighting system. The point is it's not possible to provide all the materials necessary for all installation scenarios on all types of vehicles to meet everyone's quality goals. Our light kits provide the essential components needed for a high-quality, functioning lighting system. Installation of our light kit to your specific vehicle will however likely require additional items to make it look, fit and work the way you want. This is particularly the case with electrical wiring, switching functionality and mounting surfaces for the LED strips. We have created a list of additional items you may need. Here's the link: **https://www.boogeylights.com/other-items-you-might-need/** . While we offer them for sale you can also find these items locally. We urge you to review this information before starting your install.

BENCH TEST YOUR LIGHTING COMPONENTS FIRST!

We know this takes a few extra minutes, but we STRONGLY suggest you bench test your lights AND your controller / switches on a table before doing anything further. Test all of them. 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. It also lets you know everything is working properly. 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 good 12vdc battery to do this (e.g. car battery, motorcycle battery, lawn tractor battery or 12vdc power supply capable of supporting a 5 amp load). If you're not sure how to do this, we have prepared a document explaining the process here: https://docs.boogeylights.net/?wpdmdl=1305 . Bench testing takes an extra 10 or 15 minutes. It's simple to do and can potentially save you hours of time and frustration down the road.

Did we mention the importance of bench testing every LED strip and controller before installing?

BEFORE YOU START

THIS IS A GUIDE. NOT A HOW-TO. It's simply not possible to provide detailed instructions for all installation scenarios. Far too many variables. The information in this manual is intended to be used as a guide. It is not a detailed step-by-step how-to installation manual. We do not spell out every single step along the way. We cover the essential steps related to installing this kit. Beyond that we assume the installer has the skills, knowledge and tools necessary to do the work using the information we provide as a guide. You may need to vary your installation and/or make adjustments based on your truck. This is particularly the case with electrical wire routing, electrical connections, electrical load sizing and switching. If you're unsure about how to do the installation – particularly the electrical components – we urge you to seek assistance from someone who has those skills.

YOU MUST HAVE AN UNDERSTANDING OF 12V POWER. An essential skill with installation of any Boogey Lights LED products is knowing how to correctly wire the product to a 12vdc circuit. This includes understanding the importance of having a properly sized fuse at the power source, polarity, how to properly seal an electrical connection, using properly sized wire gauge for the load, measuring voltage and measuring the additional amperage draw you're adding. If you are uncertain or unfamiliar with any of these concepts, we urge you to ask someone who has the knowledge to assist you. Electricity is unforgiving.

WORK AREA. 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 and 3M adhesion promoter works best if applied when the air temperature is above 40 degrees (and of course is DRY).

KNOW YOUR AMPERAGE DRAW. Pay attention to the number of LEDs you are lighting and the total amps you will be drawing. We manufacture a number of LED Controllers of varying capacities. If you over-load the LED controller, it will either not work at all or the lights will dim in a short period of time. Amperage data for all our LED products are on each product page. You can also download it directly here: https://docs.boogeylights.net/?wpdmdl=1137

MULTI-COLOR INSTALLATIONS. If you purchased a multi-color LED controller, we have included a wiring diagram. Please refer to that wiring diagram to make your connections. Multi-Color (aka RGB) LEDs use four conductor power lead cable. Black = 12vdc (-) Ground, Red = 12vdc + (red leds), Green = 12vdc+ (green leds), Blue = 12vdc+ (blue leds).

SINGLE- COLOR INSTALLATIONS. Single color LEDs do not require an LED controller to operate. They do however require a switch somewhere in the circuit to turn them off/on. There are a number of ways to do this but regardless of how you decide to switch your single color LEDs, you need to be mindful of the amperage adding these LEDs will draw. A single 16' LED strip containing 300 LEDs will pull about 3.3 amps on full bright white. Make sure the circuit you're using is capable of handling that additional amperage. For single color LEDs, the wiring is simple: RED power lead is connected to 12vdc + and the BLACK power lead is connected to 12vdc - .

12vdc Power Considerations

Boogey Lights® are native 12vdc devices. They require 12vdc to power them. Be aware, however, that because our lights use larger and brighter LED diodes, they will consume more amperage than a traditional residential grade 12vdc LED. For example, a 16' long LED strip with 300 single color white tri-chip LEDs will pull about 3.25 amps on full brightness assuming 12.5vdc input. If the voltage input is 13.5vdc, that amperage draw jumps up to 3.8 amps. So, two of these LED strips would pull 6.5 amps to 7.6 amps. These numbers are for a 16' long setup. If your trailer is longer, those amperage numbers will increase. **Do not power these lights through the 4-, 5- or 7-way plug of your tow vehicle.** For most installations, you need an on-board battery to support the load.

Most cargo/utility trailers will have at least one 12vdc battery dedicated to powering the interior lights. For trailers that are 20' or longer, having two 12vdc batteries in parallel just for the trailer is typical. Also, having a way to charge those trailer batteries is important. Common ways include an on-board generator, shore power charger (e.g. battery tender) or the tow vehicle itself. In cases where the tow vehicles charge the trailer battery, a DC-to-DC charger must be used. This is a dedicated charger that takes power from your tow vehicle's alternator/battery and converts it to a controlled output for the trailer battery. It provides multi-stage charging (bulk, absorption, float) to prevent overcharging, boosts voltage if there's drop over long wires, and limits current to avoid straining the alternator. DC to DC chargers are widely available online. They're rated based on amperage. We recommend ETrailer.com but there are lots of other retailers who offer DC to DC chargers.

Regardless of how you charge the trailer battery, it's important when designing your lighting system, you take the amperage calculations into consideration not just in terms of the battery capacity needed to support the lighting system but also wiring, switching and charging. If you are uncertain or unfamiliar with these concepts, we urge you to ask someone who has the knowledge to assist you onsite. Electricity is unforgiving. Pulling too much amperage through an improperly sized circuit can result in melted wires or fire. You can view amperage data for all our lighting products by clicking on the **SPECS** navigation tab on the product page. You can also download the Amperage Data Chart here: https://docs.boogeylights.net/?wpdmdl=1137 .

Important Mounting and Placement Notes

While Boogey Lights low profile surface mounted LED strips are built tough for use outdoor on motorized vehicles, they have to be installed correctly if you want them to last. It's important to understand the limitations and make sure you are installing your lights accordingly. We urge you to review this document before starting your installation.

IMPORTANT FOR CARGO TRAILER INSTALLATIONS! We suggest mounting the LED strips in this kit to plastic or aluminum flat stock (or something similar) and then mounting that assembly to the trailer. Do not mount the LED strips directly to the trailer's existing surface. The reason is that many cargo trailers don't have finished interiors and those mounting surfaces are prone to flexing/movement as the trailer moves down the road. If you mount the LED strip directly to the existing surface, the LED strip is likely going to fail prematurely due to the flexing of that surface. Mounting the LED strip on another surface such as plastic flat bar and mounting the assembly to the trailer will isolate the LED strip and protect it from that flexing. The Aluminum Channel mounting option we offer is a great way to solve this problem or you can purchase plastic or aluminum flat bar locally. LED strips that fail when mounted directly to the trailer's inside surface are not covered under warranty.

A Smooth, Flat, Straight, Continuous and Rigid Surface is Absolutely Essential

It's super important to understand these low-profile surface mounted LED strips must be mounted to a smooth, flat, straight, continuous and rigid surface. Attempting to mount them on any other type of surface will almost certainly result in your LED lights failing sooner rather than later (none of which is covered under warranty). Here are some key points to keep in mind:

1. Spanning two mounting surfaces on a vehicle that moves, flexes and vibrates will absolutely not work. The LED strip will fail and they will do so sooner rather than later; we can almost guarantee it. We know the temptation is there because it's easy/fast to do BUT you're going to be disappointed if you do. If you have to span multiple surfaces, your options are to either build a mounting surface over those surfaces using plastic or aluminum or, installing multiple LED strips (one strip, one mounting surface).

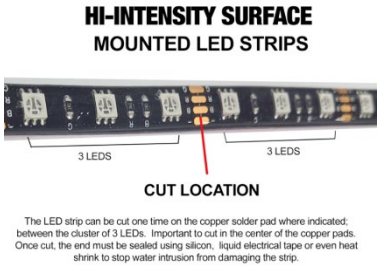
2. The LED strip cannot be mounted on top of or over things such as bolt heads, connectors, wires, gussets, spring hangers, etc. The strip must be mounted to a flat surface with nothing between the LED strip and the mounting surface. Also, the LED strip cannot span gaps in a mounting surface. The entire LED strip must make contact with the mounting surface. Depending on the size of the gap, you may be able to put down some butyl tape first to fill in that gap and then mount the LED over that but this only works for small gaps in a mounting surface such as holes or seams. If you don't have a smooth mounting surface, you can use some 1.5" wide plastic or aluminum flat stock available at just about any home store and we offer it for sale on our website too. Screw or rivet it to the vehicle . Then, mount the LED strip to that flat stock. It makes for a nice, clean installation. For ceiling mounted LEDs, we also offer mini-t12 aluminum channels (diffusers too) which make for a nice finished look.

3. When installing the LED strips it's important to simply unroll the LED strips and push them to the mounting surface as you go versus pulling on the LED strip and pushing the strip to the surface when it is tight. This is a super important concept to understand if you want your lights to last. The natural tendency is to pull tightly on the LED strip to keep it straight and level when mounting horizontally on a wall or ceiling due to gravity but doing so means the solder joints in the LED strip will be installed under maximum tension from day one. Mounting the strips this way doesn't allow any room for the solder joint to move, contract or expand as needed over time. LED strips installed this way will fail prematurely at that solder joint every time. Not a matter of if but when.

4. The LED strip must be mounted in a straight line. Do not attempt to bend the LED strip on a horizonal plane. Also, do not bend the LED strip in a radius of less than 2 inches. For example, installing these LED strips around a corner will not work long term. They will fail.

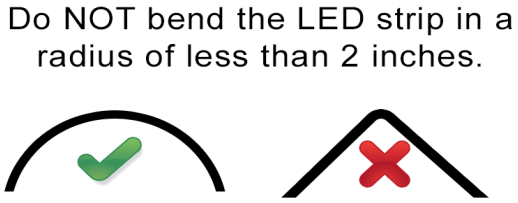
CUTTING YOUR LEDS

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 heat shrink tubing or silicon to seal the cut end. If you do need to cut your LED strip, we strongly suggest doing so BEFORE you mount the strip.



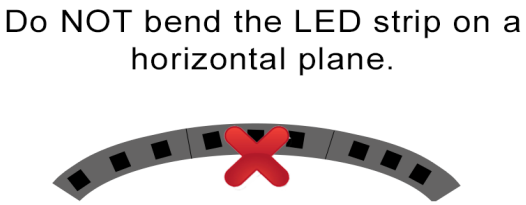
MOUNTING YOUR LED STRIPS

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 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.

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, twist or put tension on 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.

LED PLACEMENT- CARGO/UTILITY TRAILERS

The below diagrams show three different options for mounting and wiring placement two 10’ led strips on a 20’ to 24’ cargo trailer. The same principle applies if your trailer is longer using longer LED strips. Of course if you only have one LED strip on each side of the trailer (e.g. one 16’ LED strip vs two 10’ strips) then the power lead coming off the LED strip can either go towards the front or the rear. The direction you choose is usually determined by where your power source and/or switch is located.

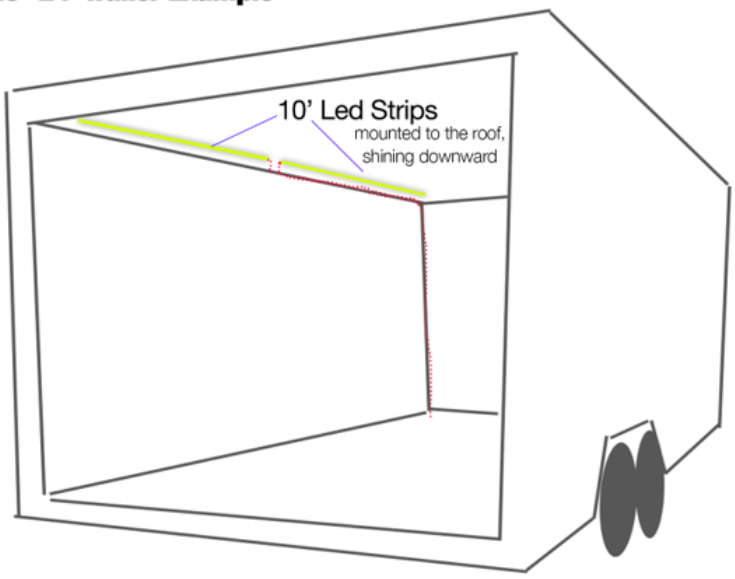
Option One: On each side of the trailer there are two 10' LED strips mounted to the ceiling about 12" from the side wall. The two power lead ends (the red-dashed line) come together in the middle (splice into one single cable OR continue as two separate cables) and then follow the roof line forward to the front wall where the power lead then drops down in the corner through the floor where it will connect to the LED controller, switch or power supply.

Option Two: Another way to do this would be to mount both LED strips with their power lead ends facing forward. The front LED strip would immediately drop the corner. The rear LED strips would follow the roof line up to the corner and drop down. Either method will work.

Option Three: Both power leads meet in the middle (like our drawing shows below) but have them drop straight down to the floor instead of going forward following the roof line. In this scenario the power leads can be hidden with wall cable raceway. You could also us some corner duct wall cable raceway to hide the cables that run down the corner.

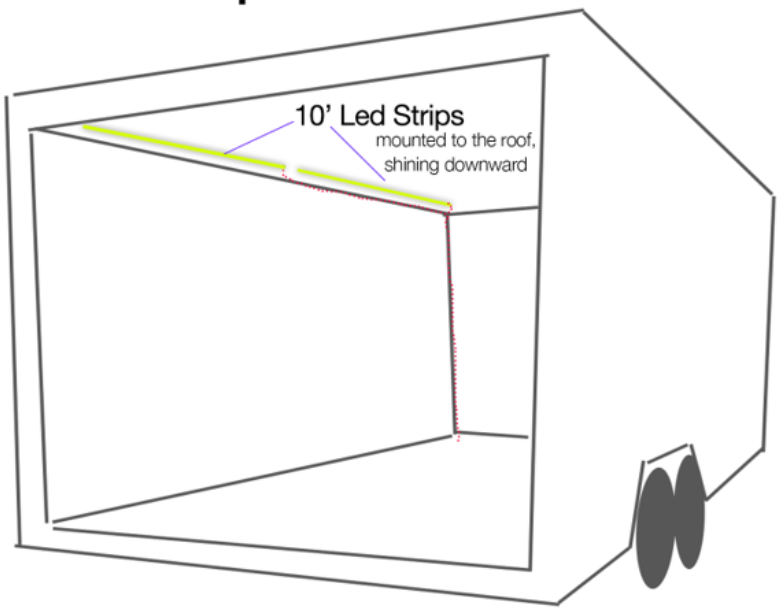
To fasten the power leads along the roof line, we like to use 3M VHB tape (be sure to use 3M Adhesion Primer first) or zip tie mounts. There are a number of options to secure the power lead wire to the roof line. Of course you would need to repeat the same process for the other side of the trailer.

20’-24’ Trailer Example



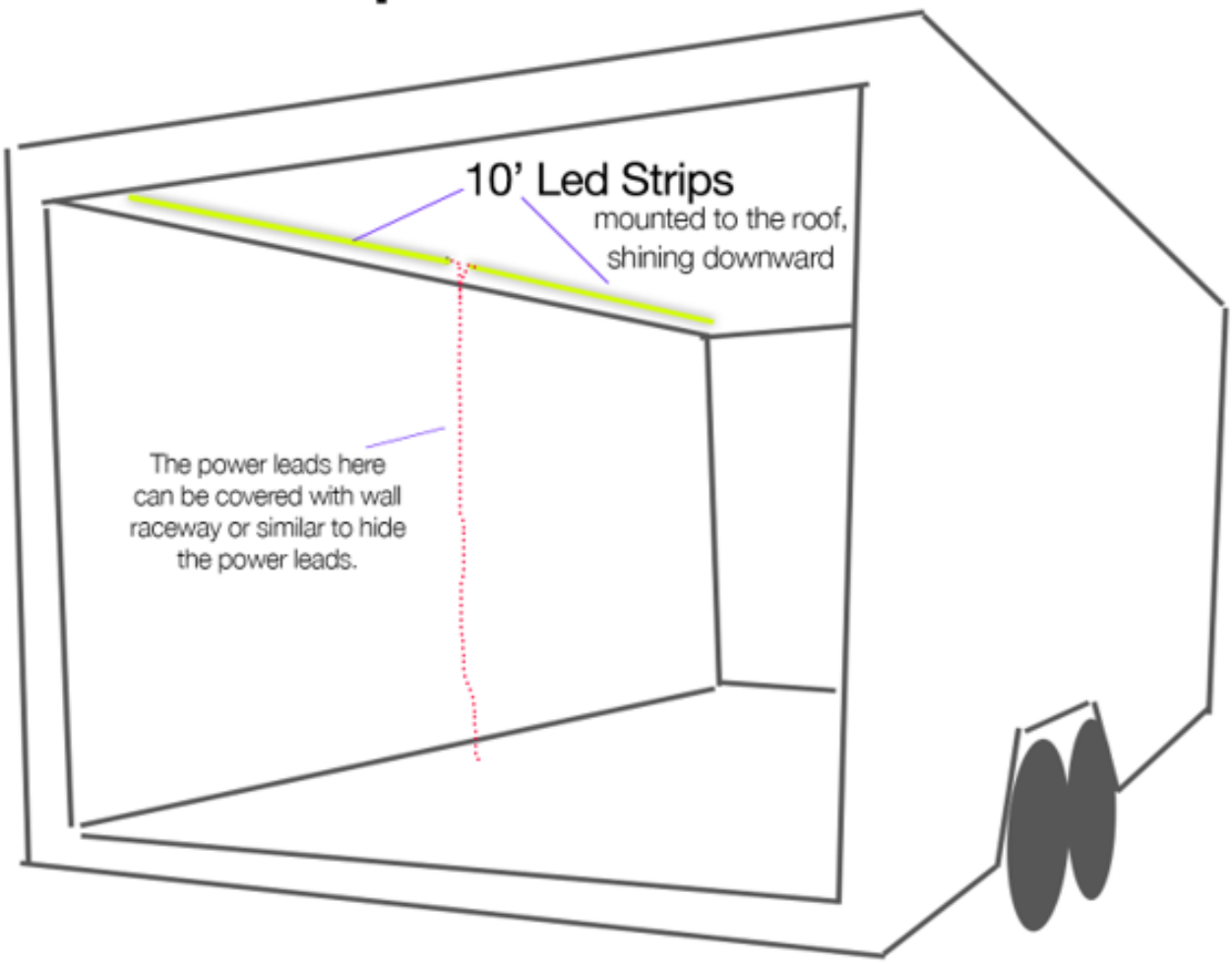
In this example, the power leads (red dashed line) from each LED strip follow the roof line forward to the corner and then down through the floor where they attach to the power source and/or LED controller.

20’-24’ Trailer Example 2



In this example, the power lead (red dashed line) from the rear mounted LED strip follows the roof line forward to the corner and then down through the floor while the forward LED strip power lead immediately drops down the corner and then through the floor where they both attach to the power source,switch and/or LED controller.

20’-24’ Trailer Example 3



In this example, the power leads (red dashed line) from both strips meet in the middle and then run down the wall and through the floor where they’ll connect to the LED controller, switch or power source.

Additional Resources

- Product Page: https://www.boogeylights.com/cargo-trailer-interior-light-kit/
- How to Videos: https://www.boogeylights.com/how-to-videos/
- Building a mounting surface: https://www.boogeylights.com/video-creating-a-smooth-mounting-surface/
- Using Aluminum Channels - https://docs.boogeylights.net/?wpdmdl=1351
- General installation: https://www.boogeylights.com/video-how-to-install-a-boogey-lights-multi-color-under-glow-led-light-kit/
- Troubleshooting: https://www.boogeylights.com/trouble-shooting-guide/
- Installation Resources: https://www.boogeylights.com/installation-resources/
- GEN2 LED Controller Wiring Diagrams + Operating Info: https://docs.boogeylights.net/?wpdmdl=1163
- GEN2 RF Wireless Remote Operating Info: https://docs.boogeylights.net/?wpdmdl=1164
- GEN2 Bluetooth APP Operating Info: https://docs.boogeylights.net/?wpdmdl=1169
- GEN2 Bluetooth APP Quick-Start: https://docs.boogeylights.net/?wpdmdl=1167
- Amperage Data: https://docs.boogeylights.net/?wpdmdl=1137

Support

- Phone: 800.847.1359 (M-F, 9-6 Eastern)
- Text: 859.955.8155
- Open a Support Ticket: https://www.boogeylights.com/email-us/
- Online: 24/7 resources at https://www.boogeylights.com/installation-resources/
- How to Make a Warranty Claim: https://www.boogeylights.com/make-a-warranty-claim/

Warranty

The Boogey Lights® warranty requires an original sales receipt from Boogey Lights or an authorized dealer. It covers product replacement only, not labor or other costs. Register your purchase at: https://www.boogeylights.com/warranty-registration/. Full details: https://www.boogeylights.com/warranty/.