RULE THE NITE™

BOOGEY LIGHTS®

Family Owned Motorsports Lighting Since 1989!

INSTALLATION GUIDE

UNDER-GLOW LED LIGHT KIT

For RVs, Trailers and Campers

IMPORTANT! No two installation scenarios are the exact 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 and lighting coverage goals. Our light kits provide the essential components needed for a high-quality, functioning LED light 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 – usually less expensive. We urge you to review this information before starting your install to make sure you have the proper materials available.

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?

PRODUCTS COVERED

This installation guide applies to these Boogey Lights® RV Under-Glow LED Light Kits:

1. **Basic RV Under-Glow LED Light Kit:** An entry-level kit with two LED strips for each side of the RV. Details: https://www.boogeylights.com/basic-under-glow-led-light-kit-for-rvs/
2. **"Easy-Order" Full-Perimeter RV Under-Glow Light Kit:** A popular kit designed for easy ordering, providing full-perimeter lighting for most RVs. Details: https://www.boogeylights.com/rv-under-glow-led-light-kit/
3. **Build Your Own RV LED Under-Glow Kit (BYOK):** A custom kit where you provide measurements for a precise fit and finish the way you want it. Details: https://www.boogeylights.com/build-your-own-rv-under-glow-led-light-kit/

For the Basic RV Under-Glow light kit, focus on the general installation steps. For the Easy-Order or BYOK kits, refer to the "Full-Perimeter Installation Considerations" section for additional details specific to full-perimeter setups.

This is a guide, not a step-by-step manual, as installation variables (e.g., RV design, user preferences) vary. We assume installers have the appropriate skills for 12VDC electrical systems and general installation knowledge. If unsure, we urge you to seek assistance from a qualified professional.

Important Notes and Alerts

- 12VDC Power Knowledge Required: You must understand 12VDC wiring, including proper fuse sizing, polarity, measuring voltage, measuring amperage, wire gauge selection, and sealing electrical connections. Incorrect wiring can damage components or cause fires. If unfamiliar, consult a professional.
- Bench Testing: Before installation, bench test the LED controller (if purchased) and each LED strip to ensure functionality. This takes 15-20 minutes but prevents issues later. Trust us on this one.
- Surface Preparation: LED strips must be mounted on a clean, smooth, flat, continuous, rigid surface. Improper mounting (e.g., on rusty, greasy, uneven surfaces, bending around corners, spanning multiple surfaces, etc) will greatly reduce longevity which is not covered under warranty.
- Installation Supplies: Our light kits include the essential lighting and command/control components, but additional items (e.g., wiring, mounting hardware, connectors, etc) may be needed based on your RV and quality goals. Review suggested items at: https://www.boogeylights.com/other-items-you-might-need/.
- Work Environment: Install in a dry area with temperatures above 40°F for optimal 3M adhesive performance.

GENERAL INSTALLATION

1. Preparation

Work Area: Ensure a spacious, dry workspace protected from rain or cold. A shop creeper is recommended for under-RV work on a smooth surface.

Understand Your Kit:

- Basic Under-Glow Kit: Includes at least two 16' LED strips, typically mounted 12-18" in from each side of the RV for optimal glow effect. You can add more strips if you want.
- Easy-Order/BYOK Kits: The Easy-Order kit includes a cut sheet specific to your RV's make and model, detailing LED strip placement for full-perimeter lighting. Refer to this cut sheet for placement.

Bench Test: Test the LED controller, applicable switches and LED strips to confirm they work. Test each strip one at a time. Also, connect each strip to the controller and verify functionality. Details on how to do this can be found here: https://docs.boogeylights.net/?wpdmdl=1305 . **Do not skip this step!**

2. Selecting the LED Controller Mounting Location

Recommended Location: We strongly suggest mounting the LED controller in the house battery compartment for a clean, safe installation. This avoids interference with other RV systems and simplifies wiring.

Alternative Locations:

- Ensure the controller is not submerged in water (it's water-resistant, not waterproof).
- Provide adequate airflow to prevent overheating, especially for larger systems.
- Use appropriately sized cables (e.g., 4AWG - 10AWG) to minimize voltage drop if extending power from the battery. Use online voltage drop calculators to select the correct gauge.
- Test RF (wireless remote) and Bluetooth (app) signal reception before permanent mounting. GEN2 controllers include a magnetic whip antenna for improved RF range.
- Travel Trailers: If the battery box is on the front tongue, extend power (using 6AWG or 8AWG cable) to a ventilated storage area inside the trailer for the controller.

3. Mounting Surface Preparation

Surface Requirements: LED strips must be mounted on a clean, smooth, flat, continuous, rigid surface free of oil, grease, rust, or dirt. Avoid mounting across multiple surfaces, around curves, or on flexible surfaces such as coroplast, as these will cause pre-mature failure which are not covered under warranty.

Coroplast Warning: If your RV has a coroplast bottom, ensure it's flat and rigid. Bulging coroplast (e.g., from water-soaked insulation) can cause LED strip failure not covered under warranty. Watch our video: https://www.boogeylights.com/video-got-coroplast/.

Building a Mounting Surface: For RVs without suitable mounting surfaces, use 1.5” aluminum, plastic flat stock (or aluminum/plastic angle for rigidity) riveted (or screwed) to the RV. Mount LED strips to this surface. Watch our video: https://www.boogeylights.com/video-creating-a-smooth-mounting-surface/.

4. Mounting the LED Strips

Placement:

- Basic Kit: Mount two 16’ strips 8-18” in from each side, parallel to each other, with power leads close to the controller or connection point.
- Easy-Order/BYOK Kits: Refer to the cut sheet for specific strip placement. Measure your RV’s perimeter to match strips to locations. General wiring diagrams for motorhomes and fifth-wheel trailers are provided at the end of this guide.

Cutting (Low-Profile Strips Only): Cut strips only at designated points (every three LEDs) to avoid damage. Seal cut ends with silicone. Cut before mounting. Heavy Duty LED strips (e.g., for wheel wells) cannot be cut.

Mounting Process:

- Clean the surface with isopropyl alcohol (50/50 with water) and let dry completely. For greasy surfaces, use acetone first, then alcohol, to remove residue.
- Apply 3M Adhesion Promoter (included) to the mounting surface and let dry for 30-60 seconds. Porous surfaces may need two coats.
- Peel off the red backing tape from the LED strip carefully, avoiding contact with other surfaces.
- Press the strip firmly but gently onto the prepared surface in a straight line, unrolling as you go. Do not stretch, twist, tug on the strip or span multiple mounting surfaces.
- Secure power leads with zip tie mounts and zip ties, using 3M Adhesion Promoter for adhesion. Add screws or rivets for extra support if needed. Do not allow the power lead end where it attaches to the LED strip to dangle or move. It must be secure. If not, that power lead will move/vibrate as the vehicle moves down the road and eventually damage the PCB of the LED strip causing the LED strip to fail (not covered under warranty).

5. Electrical Connections

Power Source: Connect to the RV’s house batteries (not engine or starter batteries for motorhomes). Ensure the power source is 12VDC, not 120VAC. For vehicles that have multiple 6VDC batteries in series, confirm correct wiring is 12vdc or consult a professional.

Wire Colors: Boogey Lights® products use 12VDC wiring (BLACK = negative, RED = positive). Verify polarity with a voltmeter if tapping into existing circuits. Incorrect polarity or 120VAC connection will damage components and void the warranty. See wiring documentation for the LED strip / controller wiring appropriate for your kit.

Optional LED Control Center: Mount in the battery compartment and connect all power leads to labeled terminal blocks for simplified wiring. Example image at the end of this guide.

Fuse and Switch: Our LED controllers include a built-in blade fuse at the controller. Be sure to add another fuse at the power source. For long-term storage, remove the fuse or install a separate on/off switch (not included) rated for the amperage.

Amperage Draw: As a point of reference, a 16' long RGB LED strip (300 LEDs) draws ~3.5 amps at full brightness (white). We include a link to our amperage data at the end of this guide. Ensure your power source can sustain the load. Overloading may cause dimming. Refer to: https://www.boogeylights.com/trouble-shooting-guide/ (issues #6 and #8).

6. Power Lead Routing

Route power leads to avoid falling, melting (e.g., near exhaust), or entanglement with moving parts (e.g., wheels, drive shaft). Use existing wiring channels or zip tie mounts with 3M Adhesion Promoter. Rivet or screw mounts for heavy loads if needed. IMPORTANT! Do not let power leads that connect to the LED strip 'dangle'. Secure the power lead so it cannot move.

7. Controller Operation

GEN2 Controller: Operates via RF remote (pre-paired) or Bluetooth app. If unpaired, press the controller's pairing button (green light flashes), then press the RF remote button within 30 seconds. Up to three remotes can be paired. See controller documentation for detailed operating instructions. Link at the end of this guide.

Optional 120VAC Converter: If used, ensure access to 120VAC power and extend wiring as needed with appropriately sized cables.

8. Wiring Plan Examples

Every RV Class requires a different layout and of course every RV is a little different than the other so it's not possible to provide a detailed layout for every possible RV Class, Length and feature configuration. Page 11 of this installation guide contains five wiring plan examples for motorhomes, Fifth Wheels and Travel Trailers. The number and lengths of the LED strips shown in the diagrams are not important as they will be different. Do not get hung up on this. The diagrams are for illustration only. They convey the general idea of how to wire the under-glow system.

Full-Perimeter Installation Considerations

Cut Sheet: For Easy-Order kits, refer to the included cut sheet for LED strip placement specific to your RV. For BYOK kits, we assume you know what you purchased and the layout that matches. See layout and wiring diagrams at the end of this document which can be used as a guide.

Feeder Cable: For most kits we include feeder cable which simplifies wiring by bundling LED strips (e.g., behind rear axles or front axle for motorhomes) to the controller. Do not exceed 900 LEDs per feeder cable (each 16' strip = 300 LEDs). See wiring diagram instructions included with your kit for details on which wires go where. Our wiring instructions are very detailed. Important to read this information before proceeding.

Single Zone vs. Dual Zone LED Controller:

- Single Zone: All LED strips connect to one controller. Simple setup; adjust placement or cut strips as needed. See Single Zone sample wiring layout at the end of this document.
- Dual Zone: Divide LEDs into Zone 1 and Zone 2 (e.g., driver's side vs. passenger/front/rear, or split down the middle). Mark power leads to avoid confusion as to which power lead goes to which zone. See Dual Zone sample wiring layout at the end of this document.

Wheel Well LEDs (Optional):

- Placement: Mount Heavy Duty LED strips vertically, offset toward the RV's outer wall to minimize direct visibility and maximize glow. We suggest dry-mounting with painter's tape and lighting the strip with a 12vdc power supply to test placement before permanent mounting.
- Mounting: Ensure a clean, smooth surface. Scrape off undercoating if needed and seal exposed metal with butyl tape or silicone. Add screws/rivets at strip ends for extra security if space allows.
- Wiring: Extend 36" power leads with feeder cable using twisted copper wires with heat shrink, butt connectors, or crimp connectors. Connect to feeder cable as shown in the layout diagram to match your controller or system configuration.

Additional Resources

- How to Videos: https://www.boogeylights.com/how-to-videos/
- Coroplast considerations: https://www.boogeylights.com/video-got-coroplast/
- Wiring Plan Examples: https://docs.boogeylights.net/?wpdmdl=1352
- Building a mounting surface: https://www.boogeylights.com/video-creating-a-smooth-mounting-surface/
- 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

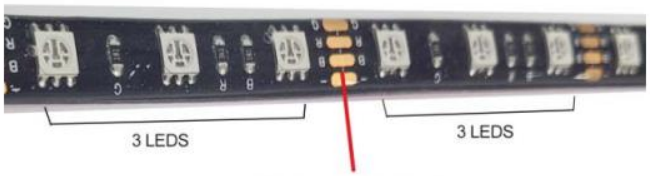
The Boogey Lights® warranty requires an original sales receipt from Boogey Lights or an authorized dealer. It covers product replacement only, not labor or other costs. Register your purchase at: https://www.boogeylights.com/warranty-registration/. Full details: https://www.boogeylights.com/warranty/.

NOTE: The two photos below show us using Aluminum Flat bar. You do not have to use aluminum. It's just one example. You can also use plastic flat bar or even plastic L channel. The important takeaway here is to understand the concept of mounting the LED strips to a single smooth, flat, rigid surface.

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

Do NOT bend the LED strip on a horizontal plane.

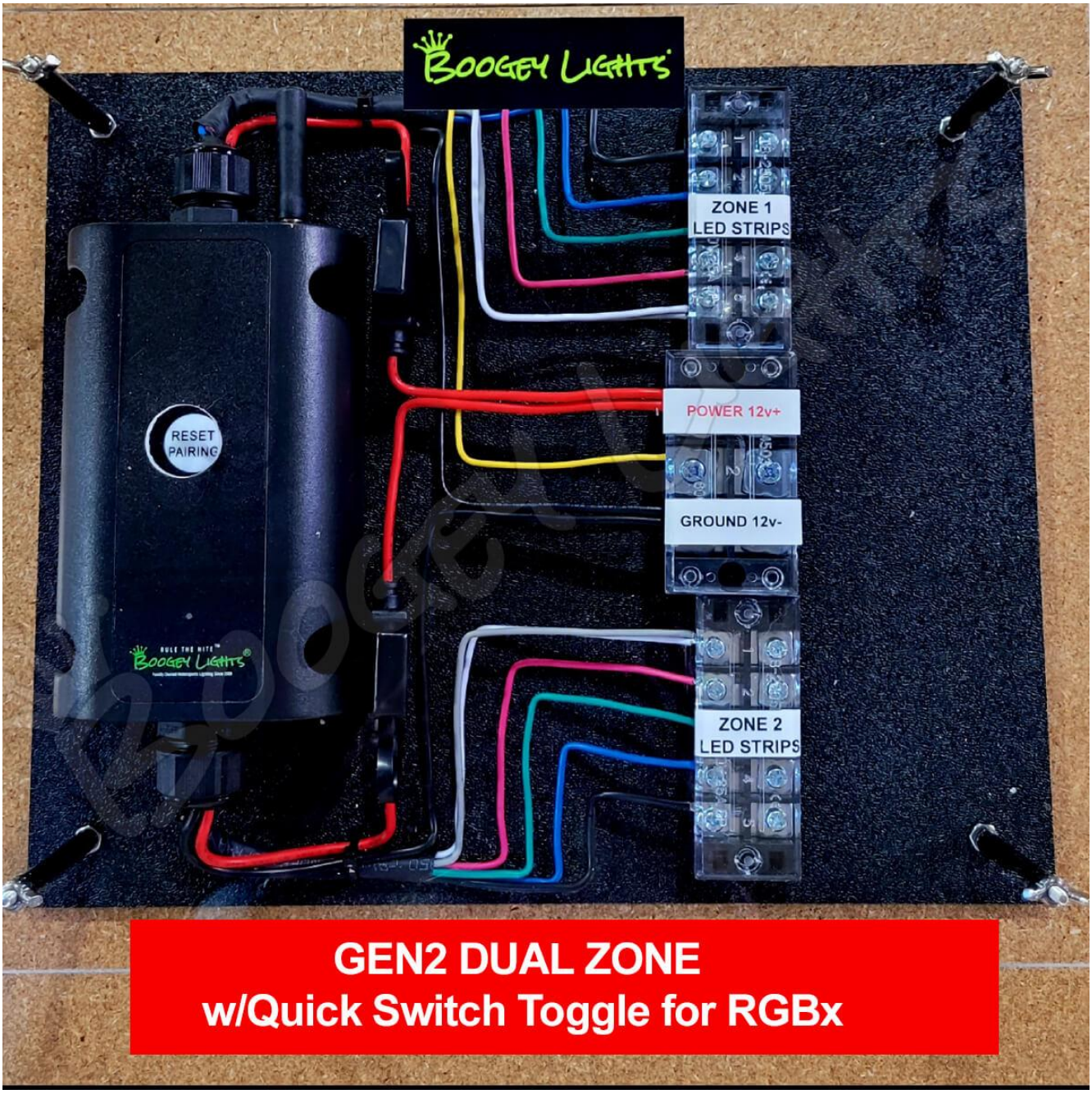
HI-INTENSITY SURFACE MOUNTED LED STRIPS



CUT LOCATION

The LED strip can be cut one time on the copper solder pad where indicated; between the cluster of 3 LEDs. Important to cut in the center of the copper pads. Once cut, the end must be sealed using silicon, liquid electrical tape or even heat shrink to stop water intrusion from damaging the strip.

Example of the Optional LED Control Center



WIRING PLAN EXAMPLES

For RV, Camper, Trailer Under-Glow Light Systems

Every RV Class requires a different layout and of course every RV is a little different than the other so it's not possible to provide a detailed layout for every possible RV Class, Length and feature configuration. Below are some examples of layouts and wiring plans. The lengths of the LED strips shown in the diagrams below are NOT important as they will be different. Do not get hung up on this. **The diagrams are for illustration only.** Each EASY-ORDER Full Perimeter RV Under-Glow LED light kit we ship has its own CUT SHEET which details the suggested LED strip layout for your specific RV. The important take away here is to understand the wiring plan concepts as it relates to using the supplied feeder cable to connect groups of LED strips based on their location on the RV. This is particularly important for large motor homes with both drive and steer axels.

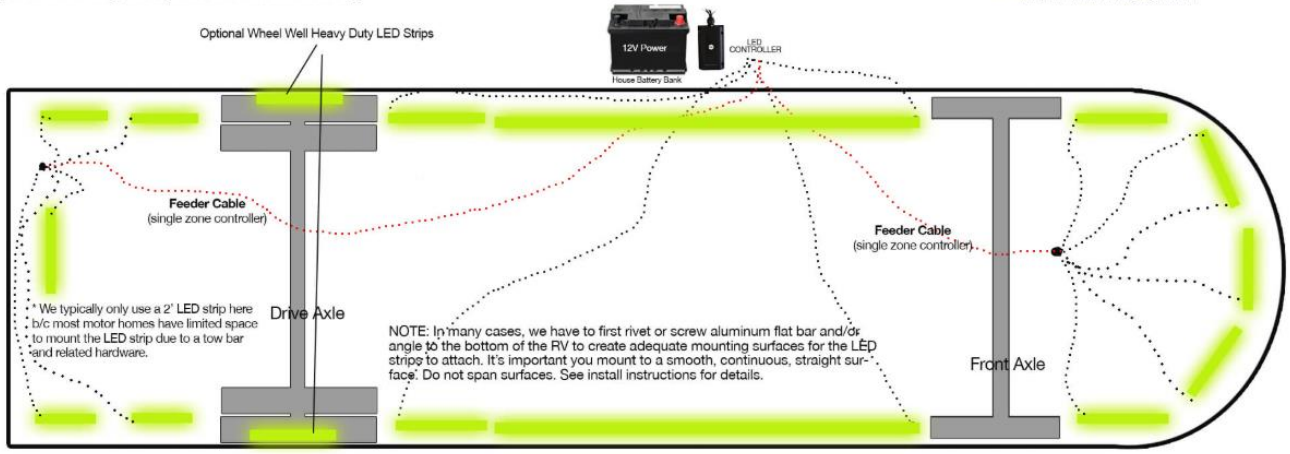
Motor Homes (all classes): Regardless of the length or class of the motor home, most motor home under-glow kits include 1 to 6 LED strips that mount under the front of the vehicle (in front of the steer axle) and 3 to 8 LED strips that mount behind the rear axle. The number and lengths vary based on the RV specs. All of the LED strips in front of the steer axle are wired to one feeder cable. All of the LED strips beyond the drive (or tag) axle are wired to one feeder cable. The LED controller is typically mounted in the middle of the vehicle between the steer and drive axles. The feeder cables the connect to the LED strips from the rear and the front meet in the middle at the controller or switching mechanism.

Fifth Wheel & Travel Trailers: On fifth wheel and travel trailers, the under-glow kits include 3 to 6 LED strips that mount at the rear of the trailer behind the last axle. Those rear LED strips are wired to one single feeder cable. That feeder cable connects to the LED controller or switching mechanism in the battery bay which is usually forward of the axles. The front of the trailer will have anywhere from 4 to 8 LED strips mounted to the bottom of the trailer. Those LED strips are either connected directly to the LED controller or wired to feeder cable which connects to the LED controller.

All of this information – including the wiring plan diagrams – can be found on the product page in the INSTALL section. Here's the link: https://www.boogeylights.com/rv-under-glow-led-light-kit/

UNDER-GLOW FULL PERIMETER LAYOUT | MOTOR HOME

(not to scale. for general placement demonstration only)



All power leads must run back to the Boogey Lights LED controller mounted at or near the 12vdc power source. We always recommend using the house batteries as the power source. **IMPORTANT! LED strips can not "daisy chain" from one strip to the next.** NOTE: LED Strips can be cut every third LED if you need shorter lengths.

Single Zone LED Controller: One feeder cable (shown above in red) runs to the front. One feeder cable runs to the back.
Dual Zone LED Controller: Two feeder cables run to the front; one for each zone. Two feeder cables run to the rear; one for each zone. With the dual zone configuration you'll need to mark the feeder cables so you know which is which. Connect the LED strips you want to work on Zone 1 to the feeder cable attached to Zone 1. Repeat the process for the LED strips for Zone 2.

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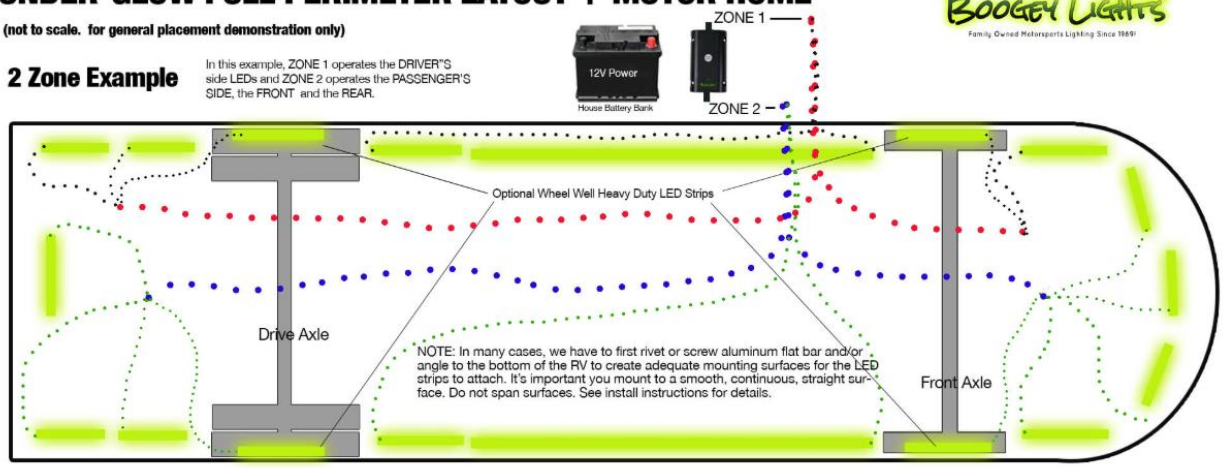
UNDER-GLOW FULL PERIMETER LAYOUT | MOTOR HOME

(not to scale. for general placement demonstration only)

2 Zone Example

In this example, ZONE 1 operates the DRIVER"S side LEDs and ZONE 2 operates the PASSENGER'S SIDE, the FRONT and the REAR.



All power leads must run back to the Boogey Lights LED controller mounted at or near the 12vdc power source. We always recommend using the house batteries as the power source. **IMPORTANT! LED strips can not "daisy chain" from one strip to the next.** NOTE: LED Strips can be cut every third LED if you need shorter lengths.

Single Zone LED Controller: One feeder cable runs to the front. One feeder cable runs to the back.
Dual Zone LED Controller: Two feeder cables run to the front; one for each zone (Red = Zone 1. Blue = Zone 2 in the diagram above). Two feeder cables run to the rear; one for each zone (Red = Zone 1. Blue = Zone 2). With the dual zone configuration you'll need to mark the feeder cables so you know which is which. Connect the LED strips you want to work on Zone 1 to the feeder cable attached to Zone 1. Repeat the process for the LED strips for Zone 2.

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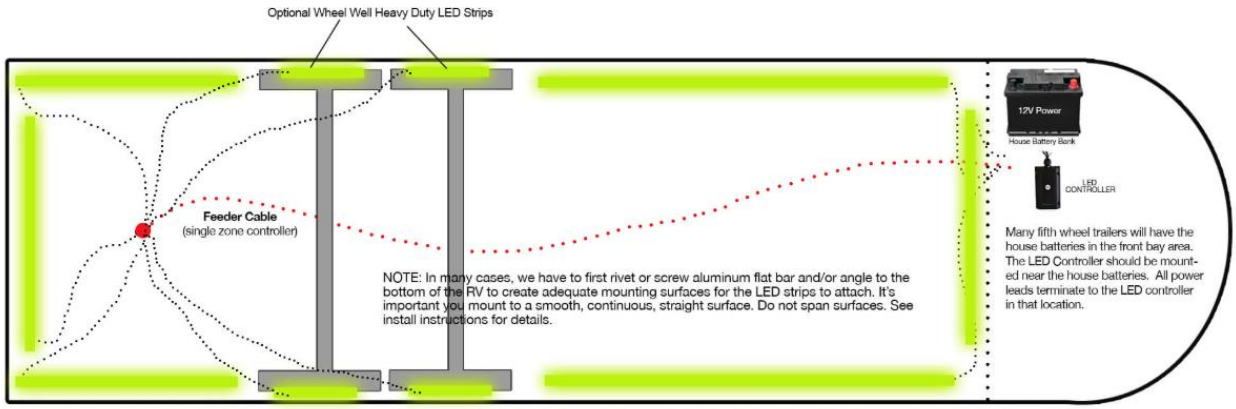
UNDER-GLOW FULL PERIMETER LAYOUT | FIFTH WHEEL TRAILER

(not to scale. for general placement demonstration only)

DOUBLE AXLE



All power leads must run back to the Boogey Lights LED controller mounted at or near the 12vdc power source. We always recommend using the house batteries as the power source. **IMPORTANT! LED strips can not "daisy chain" from one strip to the next.** NOTE: LED Strips can be cut every third LED if you need shorter lengths.

Single Zone LED Controller: One feeder cable (shown above in red) runs to the rear.
Dual Zone LED Controller: Two feeder cables run to the rear; one for each zone. With the dual zone configuration you'll need to mark the feeder cables so you know which is which. Connect the LED strips you want to work on Zone 1 to the feeder cable attached to Zone 1. Repeat the process for the LED strips for Zone 2.

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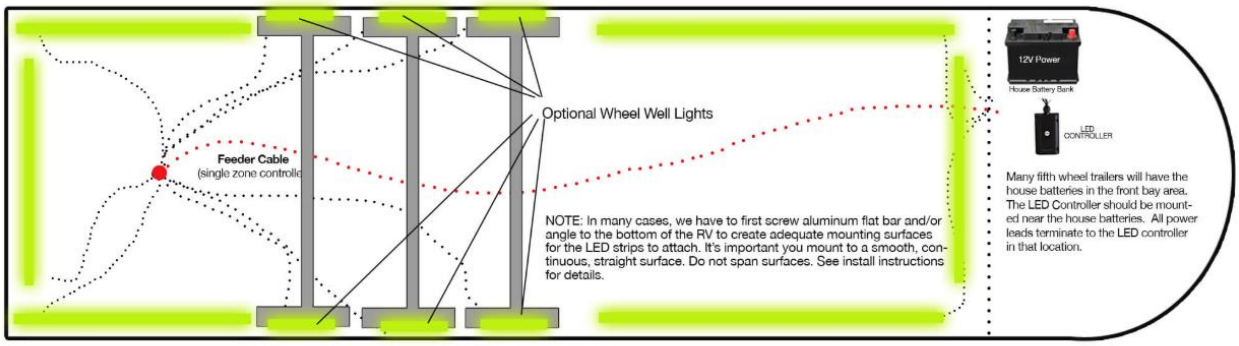
UNDER-GLOW FULL PERIMETER LAYOUT | FIFTH WHEEL TRAILER

(not to scale. for general placement demonstration only)

Triple Axel



All power leads must run back to the Boogey Lights LED controller mounted at or near the 12vdc power source. We always recommend using the house batteries as the power source. **IMPORTANT! LED strips can not "daisy chain" from one strip to the next.** NOTE: LED Strips can be cut every third LED if you need shorter lengths.

Single Zone LED Controller: One feeder cable (shown above in red) runs to the rear.
Dual Zone LED Controller: Two feeder cables run to the rear; one for each zone. With the dual zone configuration you'll need to mark the feeder cables so you know which is which. Connect the LED strips you want to work on Zone 1 to the feeder cable attached to Zone 1. Repeat the process for the LED strips for Zone 2.

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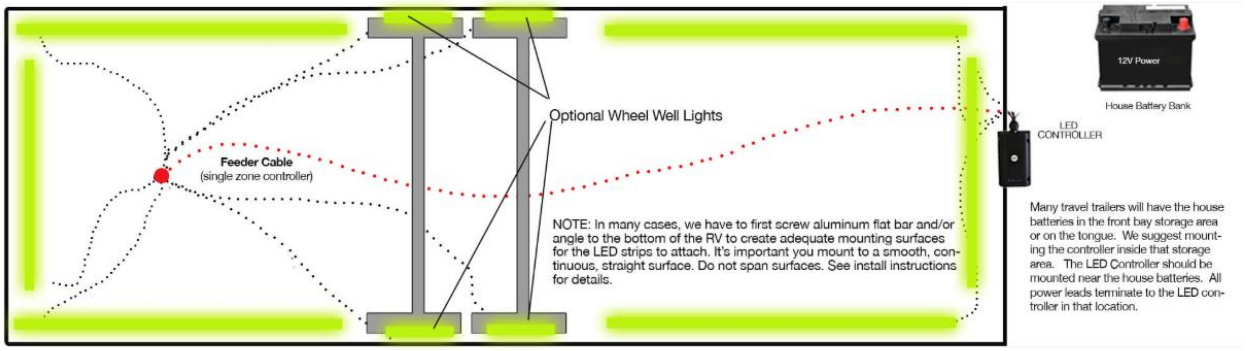
UNDER-GLOW FULL PERIMETER LAYOUT | TRAVEL TRAILER

(not to scale. for general placement demonstration only)

Double Axle

The wiring plan for a travel trailer is the same as a fifth wheel trailer. What can be different is the location of the house batteries. Some travel trailers have the battery stored on the tongue of the trailer vs in a storage compartment. The LED controller should be mounted inside the trailer regardless.



All power leads must run back to the Boogey Lights LED controller mounted at or near the 12vdc power source. We always recommend using the house batteries as the power source. **IMPORTANT! LED strips can not "daisy chain" from one strip to the next.** NOTE: LED Strips can be cut every third LED if you need shorter lengths.

Single Zone LED Controller: One feeder cable (shown above in red) runs to the rear.
Dual Zone LED Controller: Two feeder cables run to the rear; one for each zone. With the dual zone configuration you'll need to mark the feeder cables so you know which is which. Connect the LED strips you want to work on Zone 1 to the feeder cable attached to Zone 1. Repeat the process for the LED strips for Zone 2.

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