

INSTALLATION GUIDE

Freightliner Cascadia Interior Light Kit

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. 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 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. 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 first?

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 document 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 vehicle. This is particularly the case with led strip mounting locations, 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).

MOUNTING SURFACE CONSIDERATIONS. How and where you mount your LED strips will for the most part determine the longevity of your lighting system. If you mount the LED strips to smooth, clean, continuous, straight, flat surfaces as we recommend, you can expect your lighting system to last for many years. If however you try to save installation time by bending the strips around corners/curves, mounting them on uneven/split surfaces, mounting them to rusty/dirty/greasy surfaces or mounting them in locations where they're likely to be damaged, chances are high the LED strips won't last very long (and failures under these circumstances are not covered under warranty).

TIME REQUIRED. Installation of this light kit typically takes 3 to 5 hours depending on whether it's single color or multi-color, single zone or dual zone as well as your familiarity with the construction of the interior of the truck. Multi-color installations tend to take longer because the LED controller needs to be wired into the system.

CAB AREA LIGHTS. For the CAB area there are three LED strips which form a "U" shape. One long strip (63" w/5' power lead) across the front of the cab and then one on each side (21.75" w/5' power lead, one on driver's sides, one on passenger's side); all *strips shining downward*. See diagram below. We also include photos of these three LED strips. Because these LED strips are in plain view, we prefer to install the aluminum channel with diffuser to the bottom of truck's overhead storage using rivets and then, install the three LED strips into those aluminum channels. The plastic diffuser snaps into the channel once the LED strip is mounted. It makes for a professional and clean looking installation. Plus, for the long LED strip, the aluminum channel spans a seam in the truck's overhead storage bin making for a smooth, flat mountable surface for the LED strip which protects the strip from damage. We prefer to

rivet the aluminum channel to the bottom of the plastic storage bins but you could also use 3M VHB tape or similar to secure the aluminum channels to the truck. Each LED strip has its own power lead. The power lead for the two side LED strips run up around the back of the storage bin (in front of the curtain). The power lead for the longer LED strip needs to have a hole drilled through the bottom of the storage bin (plastic) AND the top of the storage bin. We use an 8" drill bit to do this. All power leads connect to the power lead feeder cable (which connects to the controller or switch/power source inside the driver's side closet) on top of the storage bins.

SLEEPER AREA LIGHTS. For the SLEEPER area there are four LED strips total. Two on each side of the truck (12" and 21.75" each with a 5' power lead). These LED strips mount directly to the top of the storage bins on each side of *the truck shining upward*. They can be mounted directly to the plastic; no aluminum channel required. The power leads for the LED strips on the passenger's side of the truck will need to be connected to the power source/controller which is in the driver's side closet. You have two options here. First option is to run the power lead feeder cable through the headliner over top and down to the driver's side closet. This is our preferred option for DUAL ZONE lighting however can be a little tricky to do. The second option is to run those two power leads forward toward the front of the truck where they connect up with the power leads from the CAB lights. This only works well if you're using one lighting zone where both the CAB and SLEEPER lights are running on the same lighting zone. If you're doing a DUAL ZONE installation, you can still run the power leads forward however you'll need to run a second power lead feeder cable forward from the driver's closet where the dual zone LED controller will be mounted that will meet up with the two power leads for the passenger's side Sleeper LED strips.

POWER, SWITCHING, CONTROLLER. We mount the LED CONTROLLER in the driver's side closet. This is where all of the power leads from the LED strips connect together. For 12vdc power, you have two or three options. If the truck has an inverter, you can usually pull 12vdc power directly from the 12vdc inputs coming from the batteries to the inverter. The inverter is usually mounted underneath the bed which makes access easy from the driver's side closet. If the truck doesn't have an inverter, our next choice is to connect directly to the truck's batteries. To do this we drill a hole in the floor and access the battery box that way. Of course, all connections must be fused as close to the power source as we can get it. The last option is to pull 12vdc power from one of the existing cigarette lighter outlets built in to the truck. *To be clear, we do not recommend this option but we know folks do it.* The reason is that this lighting system will pull 3-4 amps of power. Most cigarette lighter outlets are rated at 5amp. If you wire these LED lights to an existing cigarette lighter outlet, that circuit will in most cases be maxed out; you can't use it for anything else. Lots of guys don't pay attention to this of course and wonder why they're blowing fuses all the time. Not only is this annoying but constantly over-loading an electrical circuit can be dangerous; risk of fire. If you're installing single color LEDs, you'll need to mount a switch of some type. If you're using a hard wired toggle on/off switch, we'll typically mount it on the outside of the driver's closet wall facing the rear of the truck where the other switches are located. If you're using a wireless on/off/dimming switch, the control component itself will mount inside that closet (just like the LED CONTROLLER in a multi-color install would be) and use the wireless remote to operate the lights from anywhere in the truck.

LOW PROFILE LED STRIPS. This light kit uses our LOW PROFILE LED series. Our Low Profile LED strips can be cut every 3 LEDs if needed to fit. Details on how to do this are below.

CUTTING YOUR LEDS

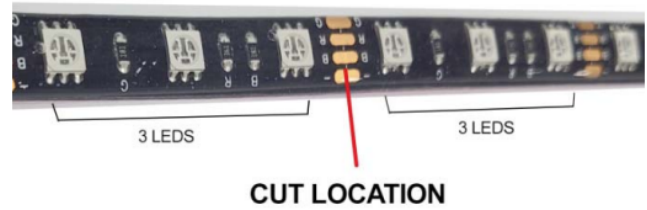
If you need to cut your LED strip you can do so as long as you cut in the proper location – which is every three LEDs as shown in the photo. Cutting incorrectly could damage your lights and is not covered by the warranty. If you cut the strip, be sure to seal the cut end. You can also use silicone found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

MOUNTING THE LED STRIPS

Once you have your LED strips cut (if necessary) and you know where you are going to attach them, follow these steps:

- 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 30-60 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 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

HI-INTENSITY SURFACE MOUNTED LED STRIPS



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.

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

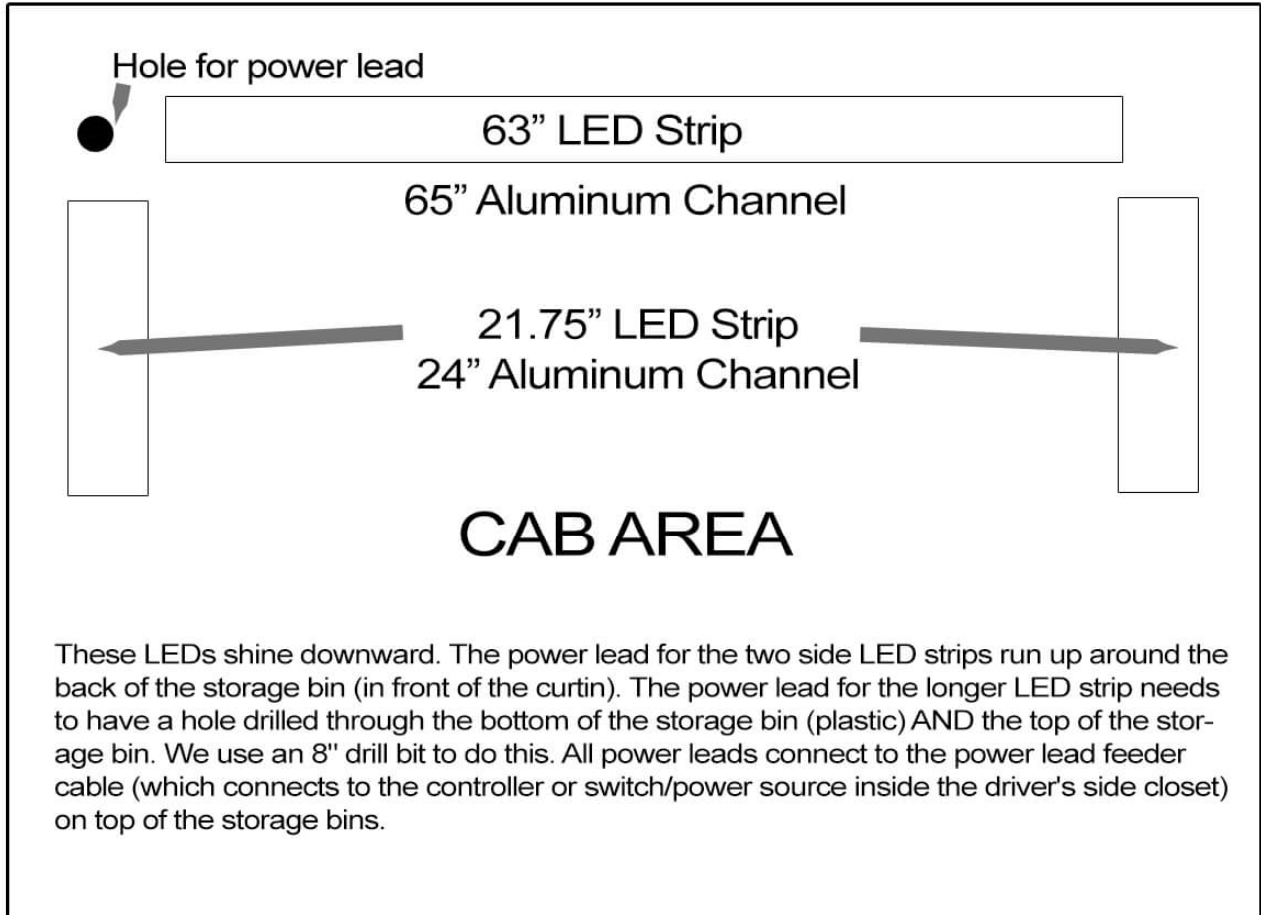


Do NOT bend the LED strip on a horizontal plane.

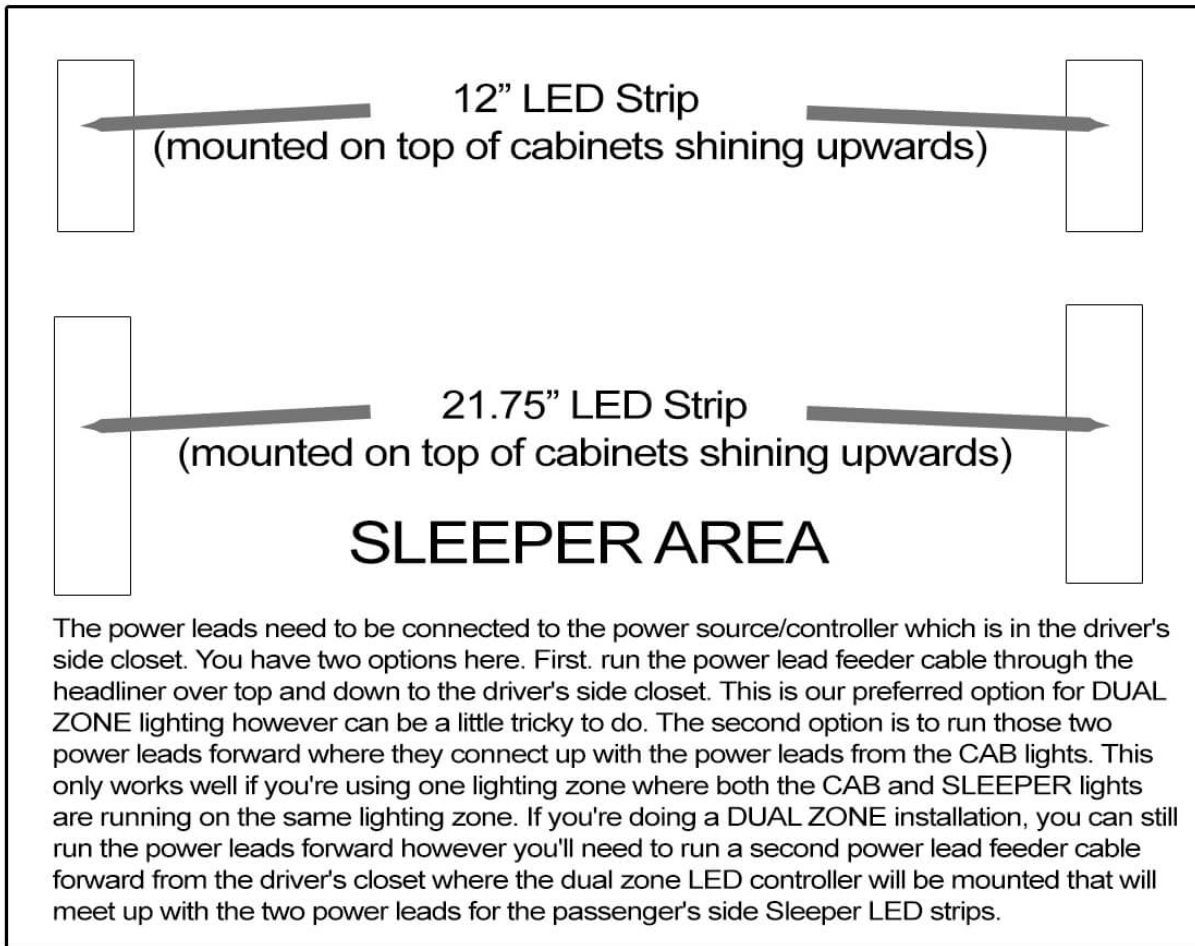


NOT attempt to span across multiple mounting surfaces.

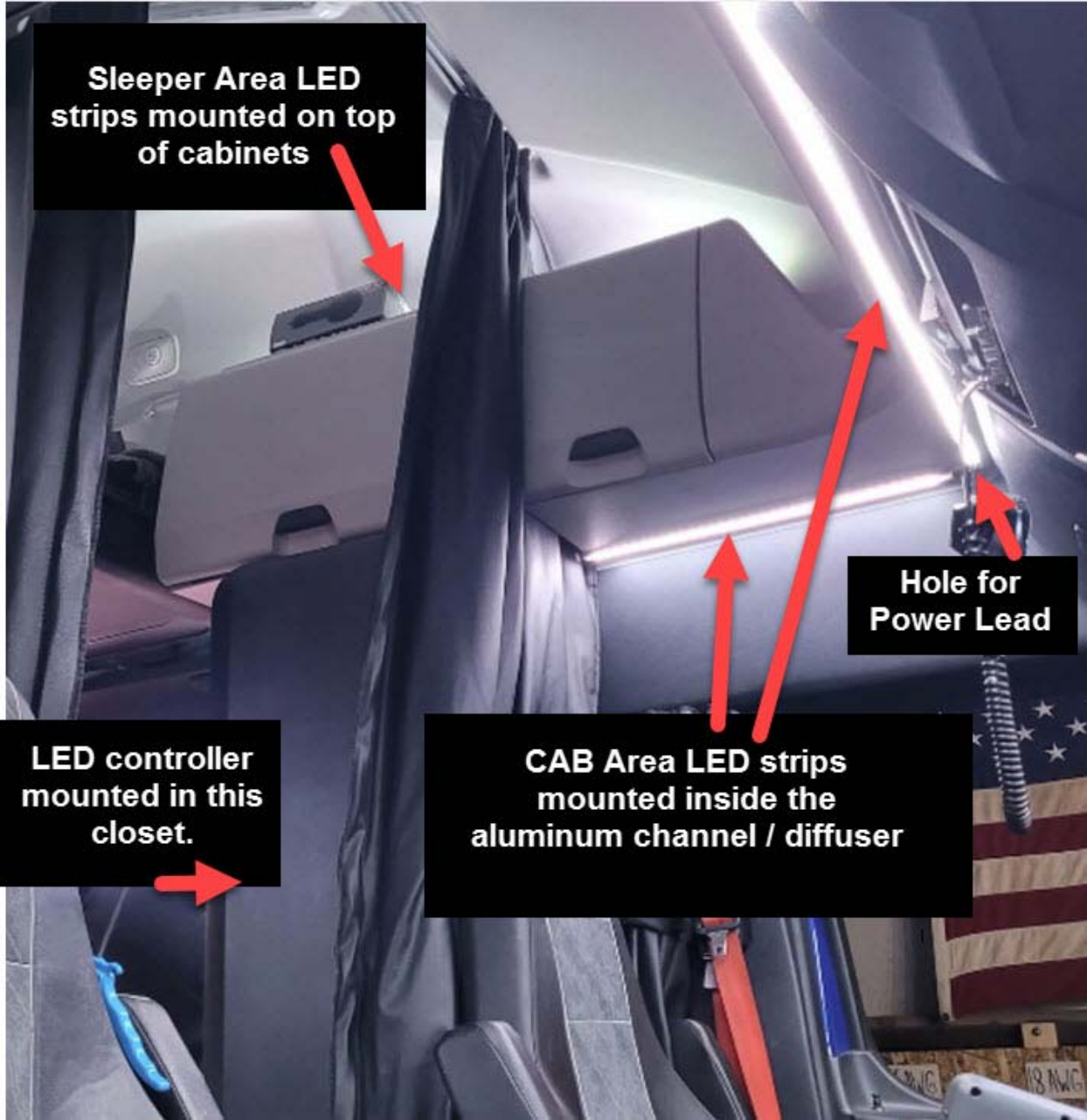
- Secure all power leads. Do not leave the power lead cable hanging. Doing so will place too much stress on the LED strip itself causing it to fall off or fail where the power lead connects to the LED strip. Be sure to wrap all power leads in split loom to avoid chaffing.



Not to scale. Illustration only to show placement / layout.



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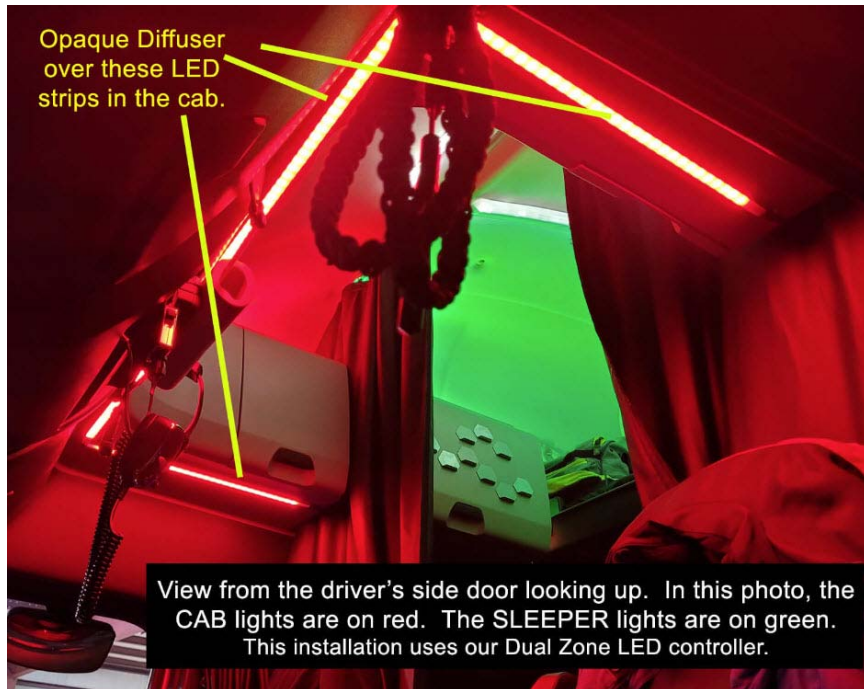


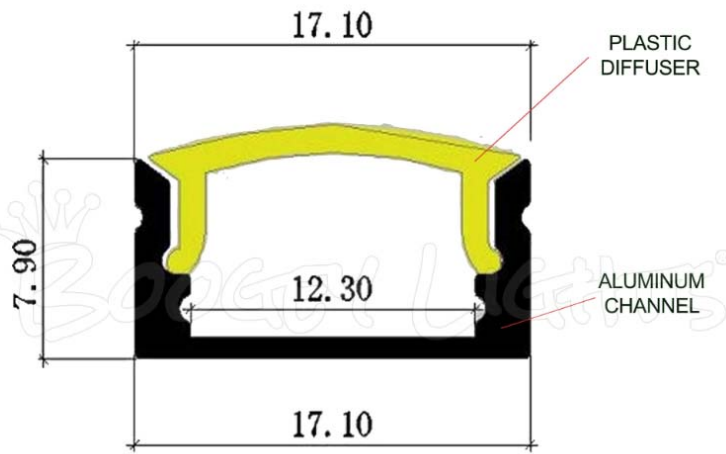
Sleeper Area LED strips mounted on top of cabinets

Hole for Power Lead

LED controller mounted in this closet.

CAB Area LED strips mounted inside the aluminum channel / diffuser





Measurements are in millimeters (mm).