



INSTALLATION GUIDE

VOLVO VNL GEN4 UNDERCAB LED 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. 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 12vdc battery to do this (e.g. car battery, motorcycle battery, lawn tractor battery or 12vdc power supply). If you're not sure how to bench test, download this pdf: <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 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.

MOUNTING SURFACE. 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

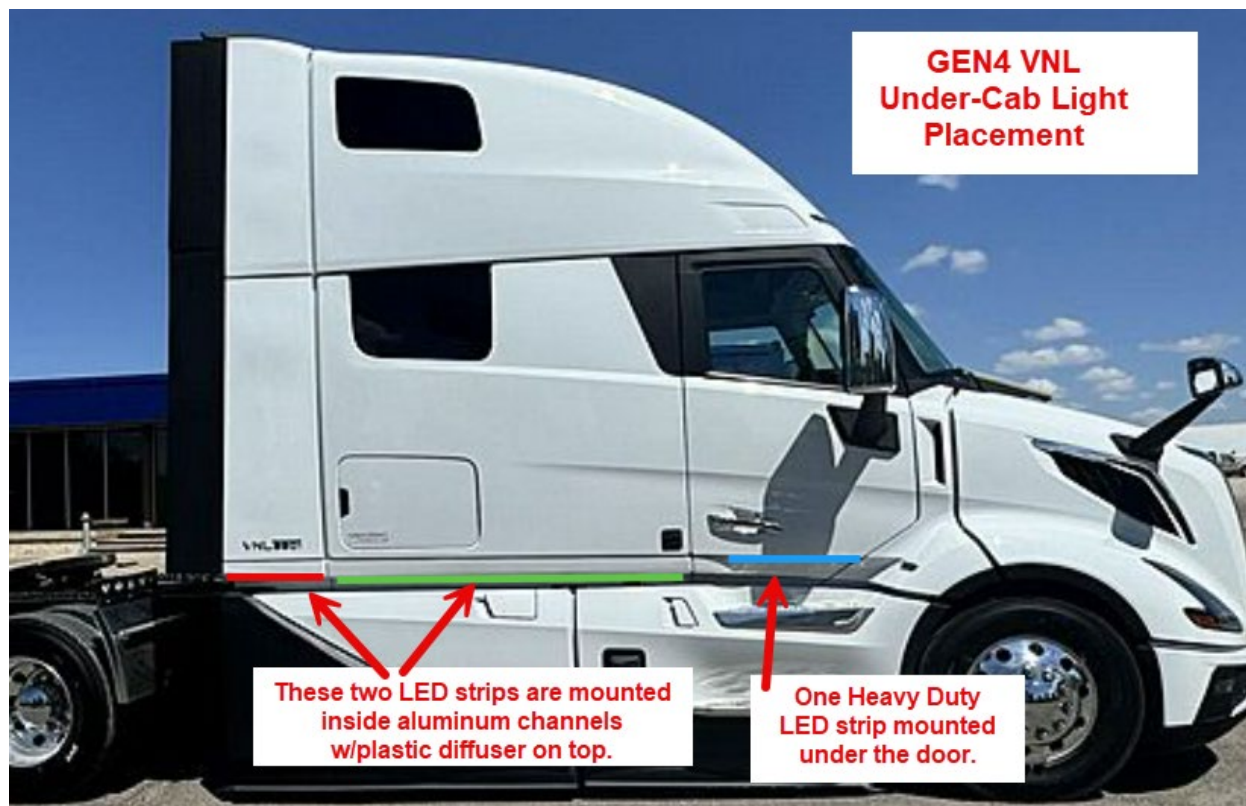
SECURE THE POWER LEADS. Make sure the power lead wire that connects to one end of the LED strip is firmly secured to the boat. Do not allow that power lead to move or flex at the point where it attaches to the LED strip. If you do, it will fail prematurely and is not covered under warranty.

POWER LEADS. All of the power leads coming from the LED strips will need to be routed back to your power source/switch/controller which is usually mounted near the battery bank. We typically will mount the led controller in the driver's side storage box (aka 'jockey box'). If you're installing this kit along with another one of our light kits, you can usually merge the wiring together. It's important these power lead be secured (especially at the point where the power lead attaches to the LED strip) and wrapped in split loom to prevent chafing.

Installation Time. Installation of this led light kit takes 2 to 3 hours depending on whether or not you're adding this light kit to an existing installation or installing this kit as a stand-alone. Also, the type of lighting and switching you're using will impact the installation time too.

Mounting & Placement Locations

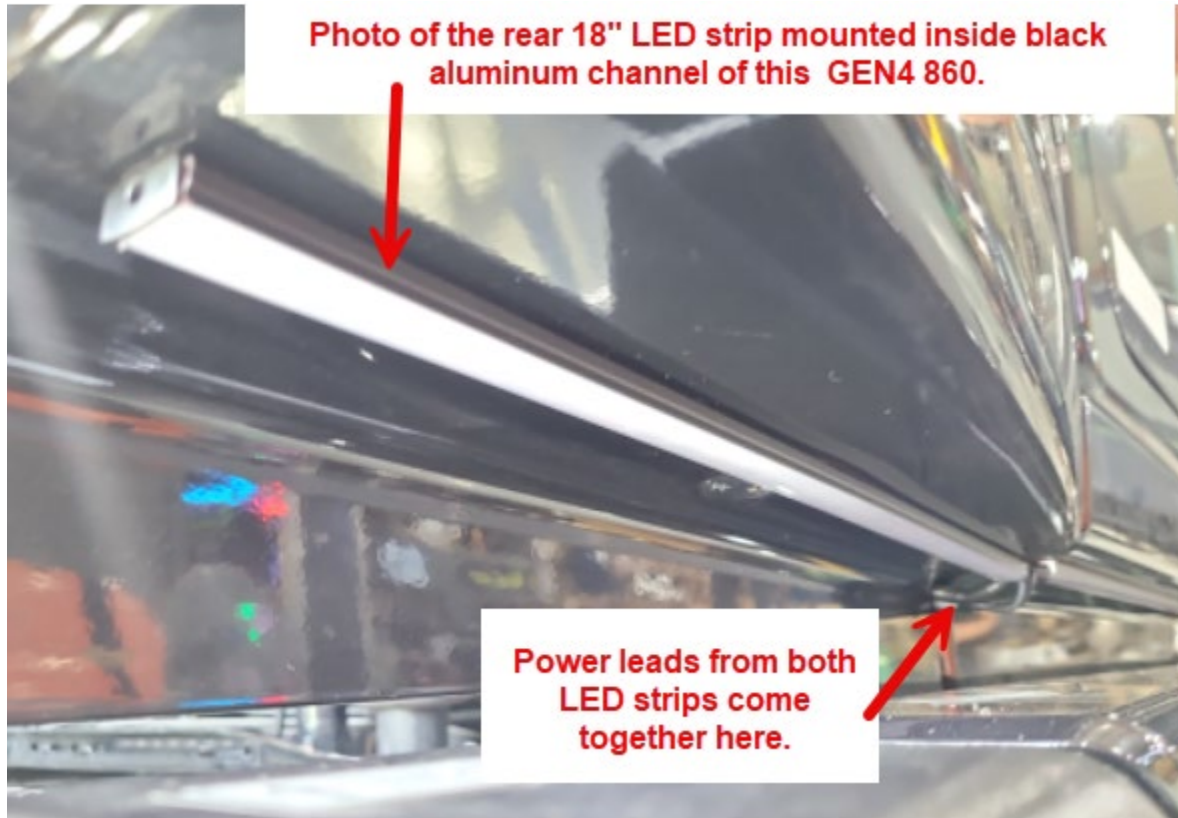
Unlike the previous GEN2 and GEN3 VNL trucks, the space between the cab and the skirts/frame rails does not have a suitable mounting surface for the LED strip such that it can't be seen. The newly redesigned body style of the GEN4 truck instead has a curved surface filling the previously open space between the cab and the skirts/frame rails. To solve this mounting problem our GEN4 Under Cab LED light kit includes Aluminum Channels with Plastic Diffusers. The Aluminum Channel is mounted to that curved surface between the cab and skirts/frame rails and then the low profile LED strip is mounted inside that channel with the plastic opaque diffuser snapping over top. It not only makes for a professional looking installation but the glow from the LED strip behind that opaque diffuser provides a subtle, "light-stick" kind of glow. For the area under the door, we secure one Heavy Duty LED strip to the bottom of the door itself which illuminates the undercab area plus the first step.



- RED Line = 18" Low Profile LED strip mounted inside aluminum channel w/diffuser on top.
- GREEN Line = 71" Low Profile LED strip mounted inside aluminum channel w/diffuser on top.
- BLUE Line = 22" Heavy Duty LED strip mounted to the bottom of the door shining downward.

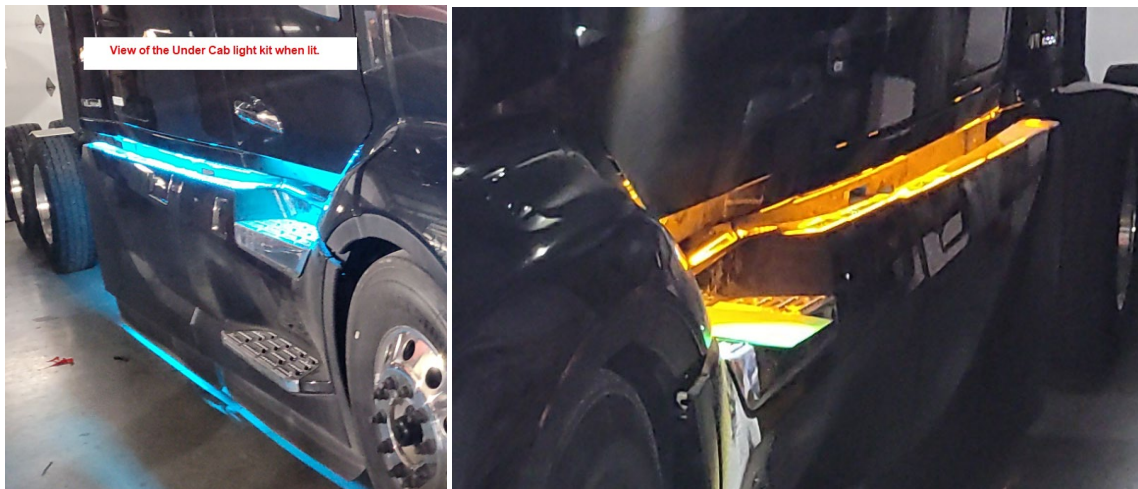
To secure the aluminum channels to the truck, we include 3M VHB tape + 3M Adhesion Primer (important to prep the surface first with 3M Adhesion Primer). The kit includes 2 - 78" aluminum channels (with diffusers) and 1 - 39" aluminum channel (with diffuser). You will need to cut these channels (and diffusers) to fit your truck. Note that the color of your truck as indicated when you placed the order will determine whether your kit includes standard aluminum or black aluminum channels. Typically, darker paint schemes will use black aluminum. They look better in the daylight.

The power leads for the two Low Profile LED strips mounted inside the aluminum channels (indicated on our diagram with the RED and GREEN lines) meet in the middle where the two truck surfaces come together. From there we combine them together and then run one power lead over to the LED controller which we like to mount in the driver's side jockey box.



While the above photo doesn't show it, it's super important to seal the ends of the aluminum channels with Lexel sealant (or similar). If water gets inside that channel and it can't dry out, the LED strip will fail sooner rather than later. These LED strips are not marine grade lights. They cannot be submerged in water. Strips that fail due to water immersion are not covered under warranty.

The Heavy Duty LED strip is mounted under the door (facing downward). The power lead from this LED strip runs on the inside of the door jamb (secured with butyl, VHB tape, RV roof sealant tape or cable clamps riveted to the door itself) and zip tied to the stock wiring harness where it can then be run up to the other two LED strips (mid truck) OR run to the driver's side storage/jockey box where it connects to the controller. We include feeder cable for this. The key here is making sure that power lead cable isn't being pinched by the door every time it opens/closes.



MOUNTING ALUMINUM CHANNELS

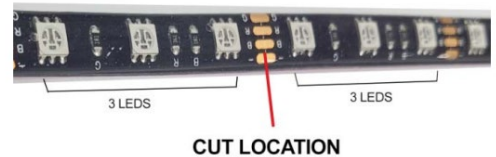
We include 3M VHB tape and 3M Adhesion Primer with this kit. It's important that both the mounting surface and the back of the aluminum channels be cleaned with rubbing alcohol first. The 3M VHB Tape is designed to make a more-or-less permanent bond between the aluminum channel and the surface to which it is attached. When properly prepared, 3M Tape can be affixed to polyethylene, polypropylene, ABS, PET/PBT blends, concrete, wood, glass, metal and painted metal surfaces. To make this bond you must however prepare the surface. You do this by first cleaning the surface with isopropyl alcohol (50/50 mixture with water) and then painting on 3M Promoter. **YOU CANNOT SKIP THIS STEP.** You'll need to do the same with the inside of the aluminum channel before securing the LED strip to it. The promoter acts as a primer that ensures maximum adhesion. Note that for maximum holding power, the application temperature needs to be **ABOVE 40(F)** degrees. Ideal application temperature range is 60-80 degrees Fahrenheit.

CUTTING YOUR LEDs

If you need to cut your LOW PROFILE 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 strip to your car.

NOTE: Heavy Duty LED strips CANNOT be cut. LOW PROFILE only.

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.

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.

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



- 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).

Do NOT bend the LED strip on a horizontal plane.



- 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 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 the ENTIRE STRIP be stuck to the mounting surface and that you NOT attempt to span across multiple mounting surfaces.

Additional Resources

- Product Page: <https://www.boogeylights.com/volvo-vnl-led-accent-light-kit/>
- How to Videos: <https://www.boogeylights.com/how-to-videos/>
- Troubleshooting: <https://www.boogeylights.com/trouble-shooting-guide/>
- Installation Resources: <https://www.boogeylights.com/installation-resources/>
- How to Bench Test: <https://docs.boogeylights.net/?wpdmdl=1305>
- Amperage Data: <https://docs.boogeylights.net/?wpdmdl=1137>
- Cutting Your LEDs: <https://docs.boogeylights.net/?wpdmdl=964>
- Using 3M VHB Tape + 3M Adhesion Primer: <https://docs.boogeylights.net/?wpdmdl=992>
- 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>

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/>.