



INSTALLATION GUIDE

VOLVO VNL GEN4 AIR VENT 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 | Planning Your Install

All the LED strips in this kit are built on our low profile hi-intensity surface mounted LED strips. The air vent lights have a total of 6 mounting locations (3 on each side) on the inside of the air vent which is accessed by removing the air vent covers. For power, if you are adding this light kit to an existing kit (e.g. Under-Glow kit), you'll connect the power leads from these led strips to your existing under-glow installation. If this is a stand alone light kit, you'll need access to the driver's side steps to access the batteries. Also, if you're installing an LED controller, the LED controller can be mounted in either the driver's side storage box or the passenger's. We prefer to use the driver's side as it is closest to the battery bank. While either location will work, be aware if you mount the controller in the passenger's side, you'll need to extend the positive battery cable a little further than if you mounted the controller in the driver's side storage. The 12vdc + power going to the LED Controller should connect directly to the 12vdc+ terminal on your truck's battery bank. You can connect the ground wire on the LED controller to any metal part of the chassis. Regardless of which side bay you use, you will need to drill a hole in the floor of that box to connect power to the battery box, led wires and antenna.

We recommend planning out your install on paper first. Be sure to wrap all power leads in split-loom which is also included and then secure them to the truck using zip ties.

INSTALLATION

- You'll need to remove the air intake vent covers on each side of the hood. There are two pieces per side. A piece of trim and then the grill itself (see photo). The trim has to be removed first. Then, the vent itself. They are held in by a combination of clips and screws. Care must be taken so you don't break the plastic vent cover with using too much force.
- Each Hood Vent light is comprised of three surface mounted LED strips. One is 22" long, one is 16" long and one is 12". Each of these LED strips comes with a 5' power lead. See diagram of the layout for each of these below. There's also 2 pieces of 18" x 1.5" plastic flat bar – one for each vent. That plastic flat bar is secured to the inside of the vent on each side, bottom. We include 3M VHB tape to help secure this plastic to the vent but as you'll see in the photo, we added a couple of rivets too just to make sure it is secure. We also include some feeder cable with this kit. See photo below of suggested placement for each of these LED strips.
- The power leads coming from each LED strip should come together. This is where you connect the feeder cable that will exit the hood plenum and connect to power (or LED controller). The idea is to create that connection inside the hood air plenum such that only one single power lead exits the hood. In the GEN4 hood, there's an existing hole where we were able to pull the air vent power lead through (see photo). Use crimp on connectors to secure your power lead connectors.
- Before mounting the led strips, the surface inside the vent where the strips will be mounted must first be cleaned with alcohol and then prepped with the include 3M® adhesion primer. This is an important step.
- When you are ready to affix the LED strip to the inside surface of the vent intake, simply remove the red protective covering on the back of each LED strip and press firmly against the inside of the hood. We recommend doing the lower strip first. Then the upper. The tight quarters of the vent opening can make this process difficult so peel the red protective covering slowly as you go. It will give you

more control over where the strip is placed.

- Repeat the process for each strip on each side of the truck. The power lead will need to be routed back to your power source and wire tied along the way. The power lead coming from the passenger's side should be routed with the cable bundle at the base of the hood where the radiator is located. Wire tie the power lead to the existing cable bundle.
- If you purchased the RGB multi-color version, you'll need to connect the power leads to the Boogey Lights LED controller. If you purchased the single color version, you'll need to connect the power leads to an existing 12vdc switched circuit that is properly fused or install a 12vdc heavy duty relay that is triggered by your marker lights. Both power leads can be brought back to the battery compartment via the frame rails.

Photo of both left and right air vents + trim with screws and clips.



LAYOUT DIAGRAM

RED line = 22" LED strip shining inward.

BLUE line = 12" LED strip shining inward.

GREEN Line = 16" LED strip mounted on flat plastic shining upward.

While the lines are shown here on the outside of the truck hood, the led strips mount on the INSIDE of the truck hood in the locations as shown.

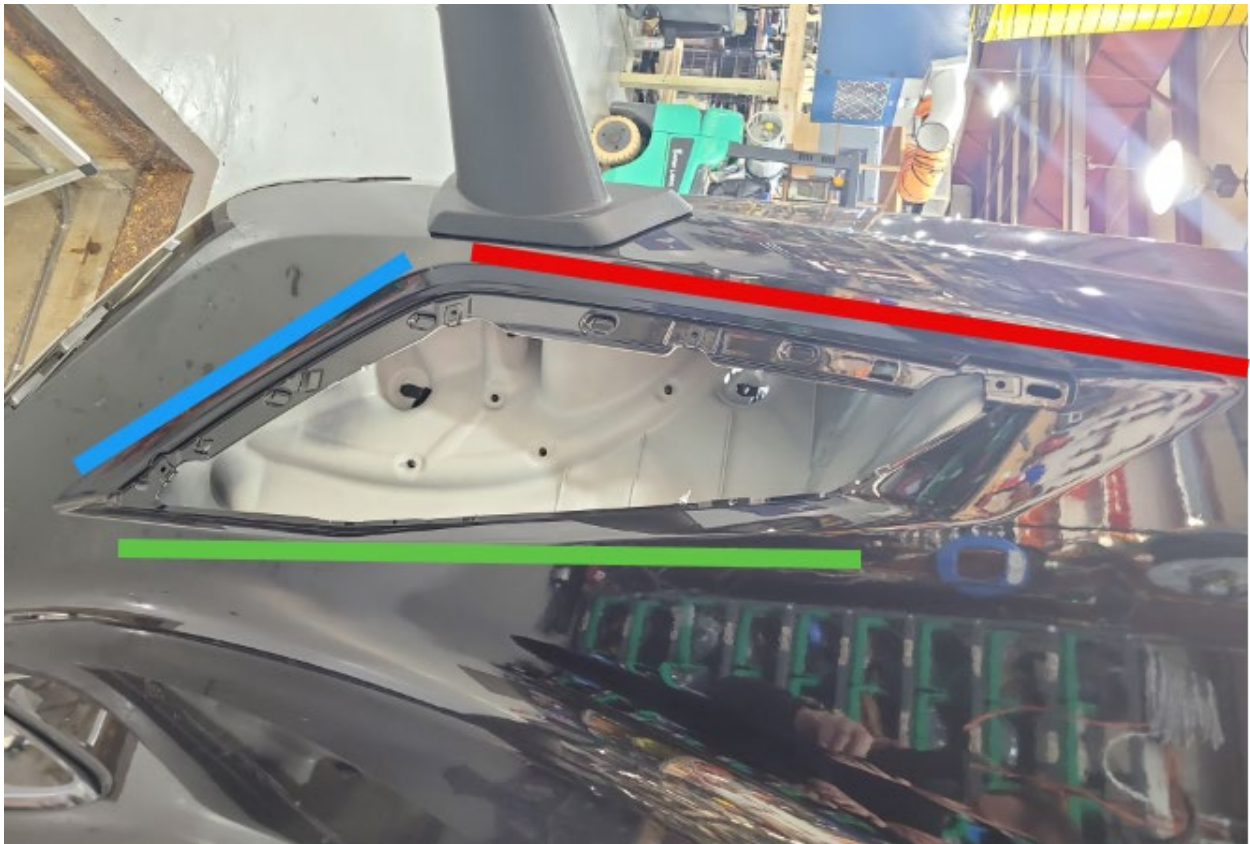




Photo taken from the passenger's side looking into the hood. This air vent light kit was wired with the grill light kit. You can see the wire from the air vent here.



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>
- 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/>.