

RV LED Dome Light Replacement Process Document

The below is the process I used to replace the LED dome lights in my 2020 Keystone Bullet travel trailer. This process corresponds to the YouTube video: <https://youtu.be/-N0zPG1D2qE>. Please watch this video for visual understanding of the process. Also, the lights I used are on my Amazon storefront if you are interested, however, they have not been tested long-term: <https://amzn.to/4j5bVcl>

Disclaimer: Please be aware that this process includes changing out electrical fixtures. If you are uncomfortable working with fixtures or electrical issues, please contact a mobile RV tech or your local RV dealer to do the work. Working with electrical issues can be dangerous to you and your RV if not done safely and correctly.

Below is the step-by-step process I used. While you may have a different RV, most of these steps should apply to your situation with LED dome lights. Here are the tools and supplies you will need to do this job:

- Phillips screwdriver
- Scissors
- Needle nose pliers
- Wire stripper/crimping tool
- Headlight/flashlight
- New light fixtures
- Butt connectors (18-22 red)
- Electrical tape
- Tape/clamp (to ensure wires don't retract into the ceiling)

Pre-installation steps:

First is to diagnose to what degree you have an issue with your current LED dome lights. Unscrew the lenses from the LED light fixtures and testing them. If you find light diodes not working or flickering, it is likely time to replace the fixtures.

Next, you will need to decide on a new light fixture. After researching, I settled on a replacement fixture from Amazon with more diodes and a toggle for different light temperatures.

Heat-shrink butt connectors require a heat gun but beware using near ceiling material. Non-heat-shrink butt connectors with electrical tape are used in this process. Wire nuts are used by manufacturers but not generally recommended for mobile applications.

This method does not splice the wiring above the ceiling where the RV's 12-volt wiring was of a larger gauge.

Part 1 is to prepare new lights:

1. Open the new light and place lense-side down on a towel.

RV LED Dome Light Replacement Process Document

2. Remove the wire sheathing to the black and white 12-volt wires on the new light.
3. Place both white and black wires into individual red butt connectors.
4. Using the crimping tool, crimp each wire into each butt connector.
5. Test the crimp with a slight tug on the wire to ensure the crimp is tight.
6. Repeat this process for all new replacement lights

Part 2 is to remove the existing light fixture:

7. Turn the power off to the light fixture by turning the power off at the local switch or by pulling the fuse to the circuit that powers the light.
8. Remove the light fixture lens, usually by twisting it off the fixture.
9. Remove the light fixture from the ceiling by using your Phillips screwdriver and removing the fixtures screws.
10. Gently pull the light fixture away from the ceiling until 4-5" of wire is exposed.
11. Apply a clamp or tape to the wires coming from the ceiling at the ceiling opening to prevent wires from retracting into the ceiling.

Part 3 is to remove the existing light and attach the new light fixture to the existing wiring:

12. Use the stripper/crimping tool and cut both white and black wires close to the existing light fixture.
13. Strip the casing from the white and black wires coming from the ceiling using the wire stripping tool. Strip the wire to expose 3/8 – 1/2" of raw wire visible.
14. Remove the lens from the new light fixture and hold the new light fixture up to the ceiling where the two 12-volt stripped wires are, and insert the white ceiling wire into the matching butt connector on the new light fixture—white wire to white wire.
15. Use the crimping tool and crimp the ceiling wire into the butt connector.
16. Repeat the crimping process with the black wire, inserting the black ceiling wire into the corresponding black wire butt connector from the light fixture.
17. Test that the crimps for both white and black ceiling wires are tight. A slight tug on the wires should suffice.
18. Attach electrical tape in a spiral direction around both butt connectors, ensuring some of the electrical tape is sticking to both wires and covering the butt connectors fully.
19. Remove the wire clamp or tape from the ceiling wires and push the newly connected butt connectors and wires into the ceiling opening while positioning the new light fixture to its original position.
20. Attach the new light to the ceiling using the original screws
21. Turn on 12-volt power to the light fixture to test that the light is working
22. Set the desired color temperature of the light, put the lens on the new light, and celebrate a job well done!