

Safety Message to Installers and Operators of Warning Lights

⚠ WARNING

People's lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product and the original product. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install the lighting system, you must have a good understanding of automotive systems, along with proficiency in the installation and use of safety warning equipment.
- This product contains high intensity LED devices. To prevent permanent eye damage, DO NOT stare into the light beam at close range.
- If mounted into a signal lens housing, the LED color and the VEHICLE lens color must match. Either use a clear lens or match the color of the LED with the lens. Using an LED colored differently than the lens color will greatly reduce the light output and reduce the effectiveness of the light for emergency signaling purposes.
- This product is intended for supplemental warning and for use in conjunction with an approved primary warning light system.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- Do not install equipment or route wiring in the deployment path of an airbag.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- A light system is a high current device. For it to function properly, a separate ground connection must be made. If practical, it should be connected to the negative battery terminal. At a minimum, it may be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light system is used.
- Locate the light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.
- After the installation test the warning light system for proper operation.
- Although your warning system is operating properly, it may not be completely effective. People may not see or heed your warning signal. You must recognize this fact and continue driving cautiously.
- Also, situations may occur which obstruct your warning signal when natural or man-made objects are between your vehicle and others, such as when raising your hood or trunk lid. If these situations occur, be especially careful.
- At the start of your shift ensure that the light is securely attached and operating properly
- The mounting system should be periodically inspected to ensure that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining or reinstalling the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

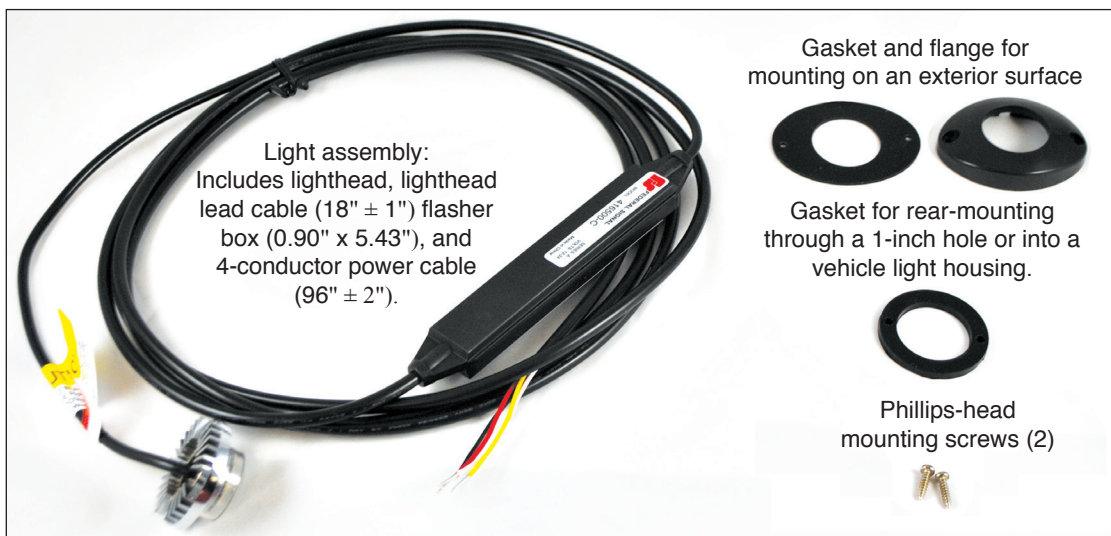
Introduction

The LED Corner Lighthouse (416500-XX) is designed to fit a variety of applications. It may be mounted on an exterior surface, into vehicle light housings, or rear-mounted through a 1-inch hole. The LEDs use polycarbonate lenses for maximum light output and a zinc base for heat sinking. The LED, which is supplied with mounting hardware, includes a flasher wired into the cabling. The LED Corner System has an operating temperature range of -30 °C to +65 °C.

Unpacking the Kit

After unpacking the product, inspect it for damage that may have occurred in transit. If the product has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of damage. Carefully check all envelopes, shipping labels, and tags before removing or destroying them. Ensure that the parts in Figure 1 are contained in the packing carton.

Figure 1 Kit contents



Installing the LED into a Vehicle Light Housing

To install the lighthouse:

1. Remove the vehicle's reflector assembly according to the directions in the vehicle manufacturer's service manual.

NOTICE

LED LIGHTHEAD DAMAGE—Mounting the Corner LED near a headlamp or other bulbs may cause permanent damage. Mount the Corner LED as far away as possible from other bulbs.

2. Because vehicle reflectors may vary, choose a mounting location so that the lighthouse is oriented to achieve the optimum lighting effect. The flat mounting location should have an area 1-1/2 inch in diameter for sealing.
3. Use the round mounting gasket as a template to mark the center of the three holes.

NOTICE

DRILLING PRECAUTIONS—Before drilling holes, check the area into which you plan to drill to ensure you do not damage vehicle components while drilling. All drilled holes should be de-burred and all sharp edges should be smoothed. All wires going through drilled holes should be protected by a grommet or convolute/split-loom tubing.

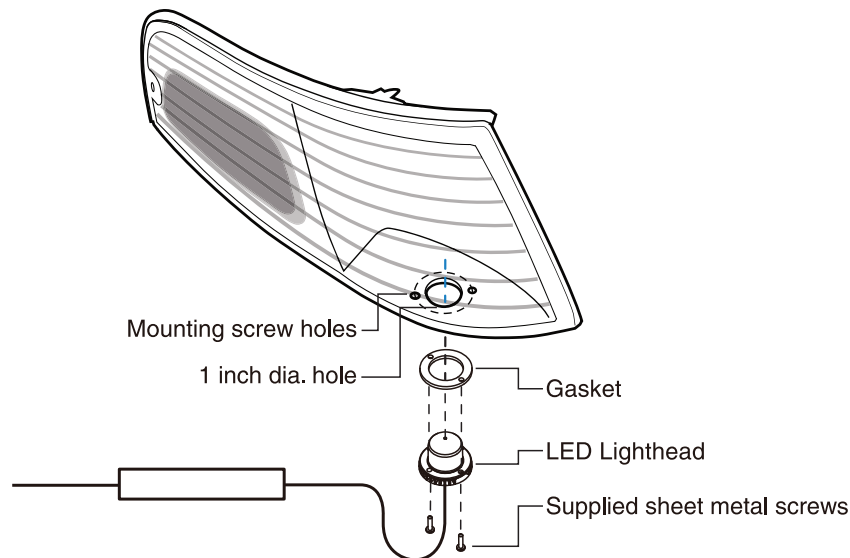
4. Drill the 1-inch hole, then use a #32 drill bit to drill the two 0.116-inch mounting holes. Deburr the holes and thoroughly clean the housings to remove all chips.
5. The mounting surface must be clean and dry for the mounting gasket to adhere properly. If necessary, use isopropyl rubbing alcohol and water to clean the mounting surface.
6. Apply the gasket to the LED lighthead and insert the lighthead into the housing with the mounting holes properly oriented.

NOTICE

TIGHTEN SCREWS PROPERLY—To avoid damage to the lighthead, do not overtighten the screws.

7. Insert and tighten the #6 screws using care not to tilt the LED lighthead.
8. To protect against moisture, seal the perimeter of the LED lighthead with RTV.
9. Reinstall the vehicle's reflector assembly and repeat the installation on the other side of the vehicle.

Figure 2 Typical installation into vehicle light housing

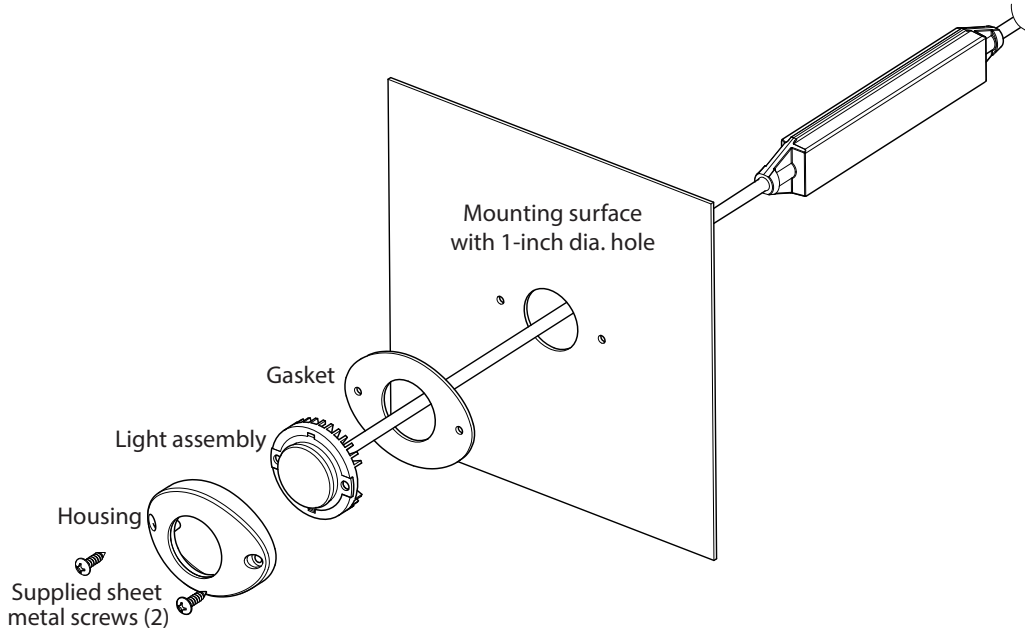


Installing the LED on an Exterior Surface

To install the lighthead:

1. Select a flat mounting surface on the exterior of the vehicle.
2. Use the oval mounting gasket as a template to mark center of the three holes.
3. Drill the 1-inch mounting hole and two holes for the 0.116" (#32) mounting screws. Deburr the holes.
4. The mounting surface must be clean and dry for the mounting gasket to adhere properly. If necessary, use isopropyl rubbing alcohol and water to clean the mounting surface.
5. See Figure 3 on page 4. With the lighthead and gasket on the outside of the vehicle, route the light cable and flasher box through the gasket and 1-inch hole.
6. Place the plastic flange over the lighthead. Align the two pegs on the reverse side of the flange with the holes on the metal heatsink. Ensure that the drainage hole faces down.
7. Secure the assembly with the two #6 screws.

Figure 3 Typical rear mount installation



Wiring the LED Lighthead

For instructions on wiring one kit in a vehicle, see Figure 4. For instructions on wiring two kits together, see Figure 5 on page 5.

WARNING

LIGHT HAZARDS—To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.

NOTICE

DO NOT CONNECT DIRECTLY TO 12 Vdc—Connecting these LED lightheads directly to 12 Vdc will cause the immediate failure of the LED lightheads.

NOTICE

DO NOT CONNECT TO A STROBE POWER SUPPLY—Connecting these LED lightheads to a strobe power supply will cause the immediate failure of the LED lightheads and may damage the strobe power supply.

Figure 4 Wiring for one LED corner lighthead kit

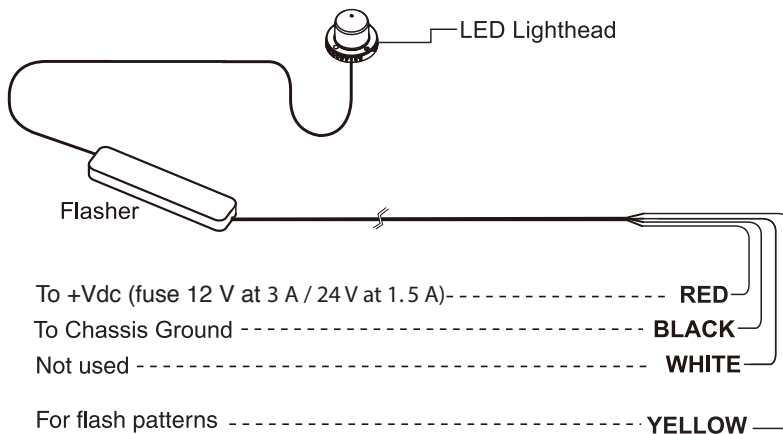
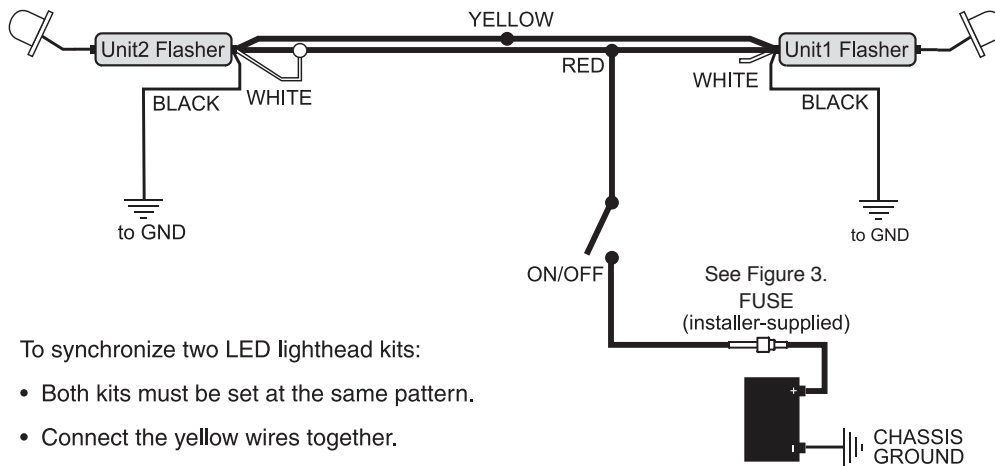


Figure 5 Wiring for two LED corner lighthouse kits

Note: In this configuration Unit1 alternates with Unit2.



To synchronize two LED lighthouse kits:

- Both kits must be set at the same pattern.
- Connect the yellow wires together.
- Connecting the WHITE wire from one of the flashers to +Vdc enables the patterns from Flasher 1 to alternate with the patterns from Flasher 2.

Selecting a Flash Pattern

See Table 1. To select a flash pattern, momentarily apply +Vdc to the YELLOW wire once for the next pattern. To reset, apply +Vdc quickly three times.

NOTE: The flasher might not be factory-set at Pattern 0.

Table 1 Flash patterns

Pattern Number	Flash Patterns
0	Random
1	Single (split)
2	Double (split)
3	Quad (split)
4	Quint (split)
5	Mega (split)
6	Ultra (split)
7	Single-Quad (split)
8	Single H/L (split)
9	Single (all)
10	Double (all)
11	Quad (all)
12	Quint (all)
13	Mega (all)
14	Ultra (all)
15	Single-Quad (all)
16	Single H/L (all)
17	Steady 2 (CA)
18	Steady 4 (all)

Getting Technical Support and Service

For technical support and service, please contact:

Service Department

Federal Signal Corporation

Phone: 1-800-433-9132

Fax: 1-800-343-9706

Email: empserviceinfo@fedsig.com

(7 AM to 5 PM, Monday through Friday, Central Time)

Returning a Product to Federal Signal

Before returning a product to Federal Signal, call 800-264-3578, 800-433-9132, or 800-824-0254 to obtain a Returned Merchandise Authorization number (RMA number) (7 AM to 5 PM, Monday through Friday, Central Time). To expedite the process please be prepared with the following information:

- Your Federal Signal customer or account number.
- The purchase order number under which the items were purchased.
- The shipping method.
- The model or part number of the product being returned.
- The quantity of products being returned.
- Drop ship information as needed.
- Any estimate required.

When you receive your RMA Number:

- Write the RMA number on the outside of the box of returned items.
- Reference the RMA number on your paperwork inside of the box.
- Write the RMA number down, so that you can easily check on status of the returned equipment.

Send all material with the issued RMA Number to:

Federal Signal Corporation

2645 Federal Signal Drive

University Park, IL 60484-3167

Attn: Service Department

RMA: # _____



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