



**FEDERAL SIGNAL**  
Safety and Security Systems

# Model FireRay®

## Utility lightheads



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## *Installation and Service Instructions*



**FEDERAL SIGNAL**

Safety and Security Systems

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## **Safety Message to Installers**

### **⚠ WARNING**

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

- To properly install this light, you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- DO NOT install equipment or route wiring or cord 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.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- Locate the light control so the VEHICLE and CONTROL can be operated safely under all driving conditions.
- Do not attempt to activate or deactivate light control while driving in a hazardous situation.
- This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.
- Frequently inspect the light to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

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

## **Overview of the FireRay**

The Federal Signal utility lighthoods is a self-contained, high intensity, LED light designed for mounting to the exterior of a vehicle. All models are available in a variety of colors and have an internal flasher Model FireRay are designed for operation on 12 Vdc.

## **Unpacking the FireRay**

After unpacking the light, inspect it for damage that may have occurred in transit. If the unit has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of damage.

## **Kit Contents List**

**Table 1 Kit Contents List**

Qty.	Description	Part No.
2	#8x1" S.S. SCREW	7011242-16
2	PLASTIC SCREW GROMMET	7065073

## Installing the FireRay

### **⚠ WARNING**

**INSTALL IN RECOMMENDED AREAS:** *When installing equipment inside airbag equipped vehicles, the installer MUST ensure that the equipment is installed ONLY in areas recommended by the vehicle manufacturer.*

**Failure to observe this warning reduces the effectiveness of the airbag, damage the airbag, or potentially damage or dislodge the equipment, causing serious injury or death to you or others.**

**NOTE:** For maximum coverage and effectiveness, mount the light assembly in a horizontal orientation (see Figure1).

Before proceeding with installation, determine the approximate location of the light assembly and plan all cable/wire routing.

To install the FireRay, proceed as follows:

1. See Figure 1. Position the FireRay utility lighthoods assembly on the desired mounting surface. Ensure that the unit is level side to side. Using the dimensions provided in Figure2, scribe the two mounting hole locations and a wiring routing hole location on the mounting surface.

### **NOTICE**

**DAMAGE TO LIGHT:** *When installing the FireRay utility light on a vehicle, you MUST use the manufacturer's supplied mounting gasket, screws, and screw grommets. Do not use an impact drill or an electric screw gun when installing the light. Torque the mounting screws to the manufacturer's recommended specification of 7.8~11.3IN-LBS.*

**Failure to observe these precautions damages the utility light and void any warranty claims for the light.**

### **⚠ WARNING**

**DRILLING PRECAUTIONS:** *Before drilling holes in ANY part of a vehicle, be sure that both sides of the mounting surface are clear of parts that could be damaged; such as brake lines, fuel lines, electrical wiring or other vital parts.*

2. Drill two 1/4" (0.250") mounting holes and a wire routing hole 1" (1.00") at the previously scribed locations.
3. Install the two supplied plastic screw grommets into the two 1/4" mounting holes.

**NOTE:** When removing the FireRay utility lights, inspect the mounting grommets for wear and replace them as needed.

**NOTICE**

**DRILLING PRECAUTIONS:** *All drilled holes should be free of burrs and sharp edges. Grommet (user supplied) all wire routing holes and/or sealed to avoid wire and/or vehicle damage.*

4. The FireRay utility light assembly has two, three or four 7.8" long lead wires, which exit out the back of the unit, for making electrical connections.
5. Complete the electrical connections as described in the Electrical Connections section.
6. See Figure 1. Align the utility lighthoods warning light assembly with the previously inserted plastic screw grommets and secure with the provided #8 x 1" S.S. screws.

## **Electrical Connections**

The FireRay utility lighthoods assembly operates on 12 Vdc. Two, three or four 7.8" long lead wires are supplied for making electrical connections to the FireRay utility lighthoods assembly. Ensure that all wires are properly connected and insulated appropriately.

To make electrical connections, proceed as follows:

1. Using 20-gauge (minimum) wire, connect the red (+) lead and/or white (+) lead to the positive power source terminal and the black (-) lead to the negative power source terminal.

## **Operation**

### **WIRING:**

#### **FOR BRAKE-TAIL-TURN LAMP**

RED: To +VDC for Brake Signal or Turn Signal

(Suggested Fuse Rating @1A)

WHITE: To +VDC for Tail Signal (Suggested Fuse Rating @1A)

BLACK: To -Chassis Ground

YELLOW: For Synchronization, Brake Signal Pattern

Connect YELLOW wires of all lighthoods together for synchronization(all lighthoods should be set at the same pattern)

For Brake Signal Pattern Change, momentarily apply +VDC to YELLOW wire:

- once for next pattern
- quick three times to Flash Pattern #1

FP#	Brake Signal Pattern
1	Blink to Steady
2	Steady

Note: This unit may not factory set at FP#1

#### **FOR TURN ARROW LAMP**

RED: To +VDC for Turn Signal(Suggested Fuse Rating @1A)

BLACK: To -Chassis Ground

YELLOW: For Synchronization, Turn Arrow Pattern

Connect YELLOW wires of all lighthoods together for synchronization(all lighthoods should be set at the same pattern)

For Turn Arrow Pattern, momentarily apply +VDC to YELLOW wire:

- once for next pattern
- quick three times to Flash Pattern #1

FP#	Turn Arrow Pattern		
1	Solid(Fast)	5	Single
2	Solid(Slow)	6	Single-Steady
3	Solid-Steady(Fast)	7	Steady
4	Solid-Steady(Slow)		

Note: 1. This unit may not factory set at FP#1

2. Only FP#7 Steady meets specification FMVSS108



## FOR REVERSE LAMP

RED wire: To +VDC(Suggested Fuse Rating: FR6@2A)

BLACK wire: To -Chassis Ground

### IMPORTANT:

Ensure that the " TOP " marking is oriented upward during installation.



## Safety Message to Operators

### **⚠ WARNING**

*Peoples' lives depend on your safe use of our products. Listed below are some important safety instructions and precautions you should follow:*

- *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: raising your hood or trunk lid. If these situations occur, be especially careful.*
- *This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.*
- *At the start of your shift, you should ensure that the light is securely attached and operating properly.*

Failure to follow these safety precautions may result in property damage, serious injury, or death to you, to passengers, or to others.

**Retain and refer to this message.**

## **Maintenance**

### **⚠ WARNING**

***CLEANING POLYCARBONATE DOMES AND LENSES: Cracking (fine cracks) of lenses causes reduced effectiveness of the light. Do not use cleaning agents (which causes crazing) such as strong detergents, solvents, or petroleum products. If crazing of lenses does occur, reliability of light for emergency signaling purposes may be reduced until lenses are replaced.***

### **NOTICE**

***CLEANING POLYCARBONATE DOMES AND LENSES: To extend the life of this device, periodic cleaning is necessary. Clean the lens/dome with a mild, non-abrasive, neutral-pH cleaning agent and a soft, clean cloth. Rinse the device thoroughly to ensure that no cleaning agent residue remains. To avoid water spots, dry the device with a soft clean cloth.***

***Failure to follow this precaution can cause crazing or cracking of the lens/dome and voids the warranty claims for the light.***

**NOTE:** Scratched or dull reflector, mirrors or lenses reduces the effectiveness of the lighting system. Use a mild, non-abrasive, neutral-pH cleaning agent and a soft, clean cloth, when cleaning the lighting system. Replace any optical components that may have been scratched or crazed during system installation. The use of strong, non-neutral-pH cleaners voids the warranty.

## **Getting Technical Support**

For technical support, please contact:

Federal Signal Corporation

Service Department

Phone: 1-800-433-9132

Fax: 1-800-343-9706

Email: [empserviceinfo@fedsig.com](mailto:empserviceinfo@fedsig.com)

## **Getting Repair Service**

The Federal Signal factory provides technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization (RMA). Obtain a RMA from a local Distributor or Manufacturer's Representative.

Provide a brief explanation of the service requested, or the nature of the malfunction.

Address all communications and shipments to the following:

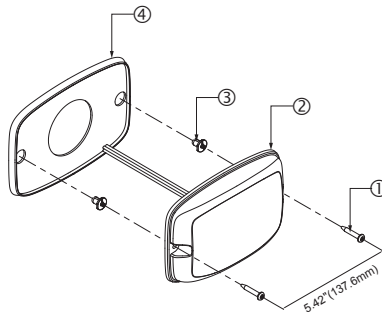
Federal Signal Corporation  
Service Department  
2645 Federal Signal Dr.  
University Park, IL 60484-3167

## **Replacement Parts**

**Table 2 Replacement Parts**

<b>Description</b>	<b>Part Number</b>
Mounting Screws	7011242-16
Screw Grommet	7065073
FR4 Series Flat Gasket	861502037
FR6 Series Flat Gasket	861502038
FR7 Series Flat Gasket	861502039
FR9 Series Flat Gasket	861502040
FR4 Series Molded Gasket	861502033
FR6 Series Molded Gasket	801502034
FR7 Series Molded Gasket	801502035
FR9 Series Molded Gasket	801502036
FR4 Series Chrome Trim Ring	861502029
FR6 Series Chrome Trim Ring	801502030
FR7 Series Chrome Trim Ring	801502031
FR9 Series Chrome Trim Ring	801502032

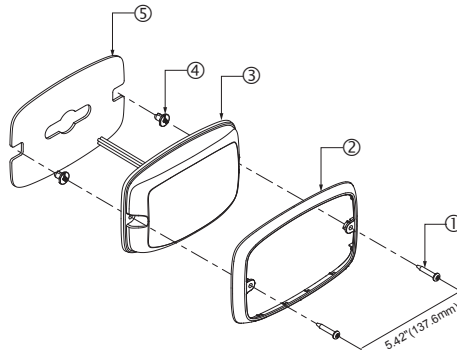
**Figure 1 Exploded Assembly View  
SURFACE MOUNT W/O FLANGE BEZEL**



**LEGEND**

- 1. MOUNTING SCREW
- 2. LIGHTHEAD
- 3. PLASTIC SCREW GROMMET
- 4. RUBBER MOUNTING PAD

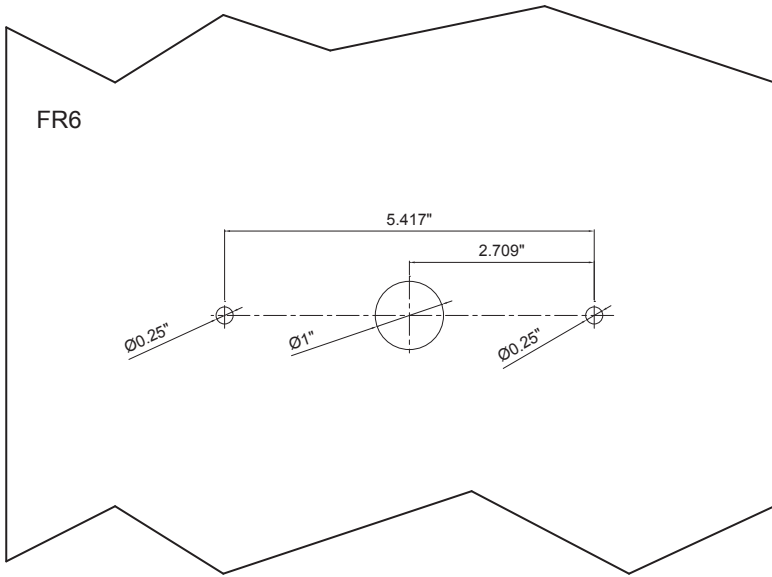
**SURFACE MOUNT W/ FLANGE BEZEL (OPTIONAL)**



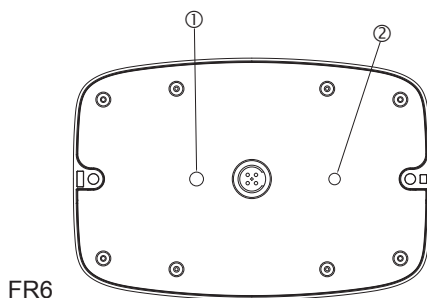
**LEGEND**

- 1. MOUNTING SCREW
- 2. BEZEL
- 3. LIGHTHEAD
- 4. PLASTIC SCREW GROMMET
- 5. MOUNTING FOAM PAD

Figure 2 Mounting Hole Locations



## Figure 3 FR-Series Base



### LEGEND

1. VENT HOLE
2. 0.2" COLOR CODED STICKER DOTS TO BE APPLIED TO IDENTIFY THE CORRESPONDING PC BOARD ASSEMBLY LED COLOR ON EACH SIDE.
3. BOTTOM VIEW - MOUNTING Foam REMOVED FOR CLARITY

### LÉGENDE

1. TROU D'ÉVENT
2. APPLIQUER DES ÉTIQUETTES EN FORME DE POINTS CODÉS COULEURS DE 0.2 PO POUR IDENTIFIER LES DÉL DE COULEUR DE LA CARTE DE CIRCUIT CORRESPONDANTE SUR CHAQUE CÔTÉ.
3. VUE DU DESSOUS – JOINT D'ÉTANCHÉITÉ DE MONTAGE ENLEVÉ POUR PLUS DE CLARTÉ

### LEYENDA

1. ORIFICIO DE VENTILACION
2. LOS AUTOADHESIVOS EN FORMA DE PUNTOS CODIFICADOS POR COLRES DE 0.2 PULG. SE APLICARAN PARA IDENTIFICAR EL COLOR DEL LED CORRESPONDIENTE EN EL TABLER DE CIRCUITO IMPRESO EN CADALADO.
3. VISTA INFERIOR – EMPAQUETADORA DE MONTAJE RETIRADA PARAMAYOR CLARIDAD





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