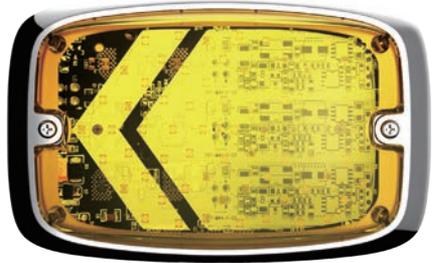




FEDERAL SIGNAL
Safety and Security Systems

FireRay® Utility Light



Installation and Maintenance Instructions

25500385

Rev. B0 0820

Printed in U.S.A

© Copyright 2016-2020 Federal Signal Corporation

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



FEDERAL SIGNAL

Safety and Security Systems

2645 Federal Signal Drive
University Park, Illinois 60484

www.fedsig.com

Customer Support

Police/Fire-EMS: 800-264-3578 • +1 708 534-3400

Work Truck: 800-824-0254 • +1 708 534-3400

Technical Support 800-433-9132 • +1 708 534-3400

All trademarks are property of their respective owners.

Contents

Safety Message to Installers and Service Personnel.....	4
Safety Message to Operators.....	5
Overview of the FireRay Utility Light.....	6
Unpacking the Product.....	6
Installing the FireRay.....	6
Making Electrical Connections.....	11
Maintaining the Light Head.....	14
Getting Technical Support.....	15
Getting Repair Service.....	15

Figures

Figure 1 Mounting holes.....	7
Figure 2 Exploded view - no bezel.....	9
Figure 3 Exploded view - with bezel.....	9
Figure 4 Base.....	10
Figure 5 Light Orientation.....	13

Tables

Table 1 Kit contents.....	6
Table 2 Brake signal patterns.....	11
Table 3 Turn arrow patterns.....	12

Safety Message to Installers and Service Personnel

Safety Message to Installers and Service Personnel

▲ 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. 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 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, ensure 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.

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 to drive cautiously.
- 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.

Installing the FireRay

Overview of the FireRay Utility Light

The Federal Signal utility light heads 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 Product

After unpacking the light, inspect it for damage that may have occurred in transit. If it has been damaged, 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. If installing a permanent mounted beacon, ensure that the parts listed in Table 1 are included in the package.

Table 1 Kit contents

Qty	Description	Part No.
2	#8 x 1-inch Stainless Steel 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.

WARNING

AIRBAG DEPLOYMENT: Do not install equipment or route wiring in the deployment path of an airbag. Failure to observe this warning will reduce the effectiveness of the airbag or potentially dislodge the equipment, causing serious injury or death.

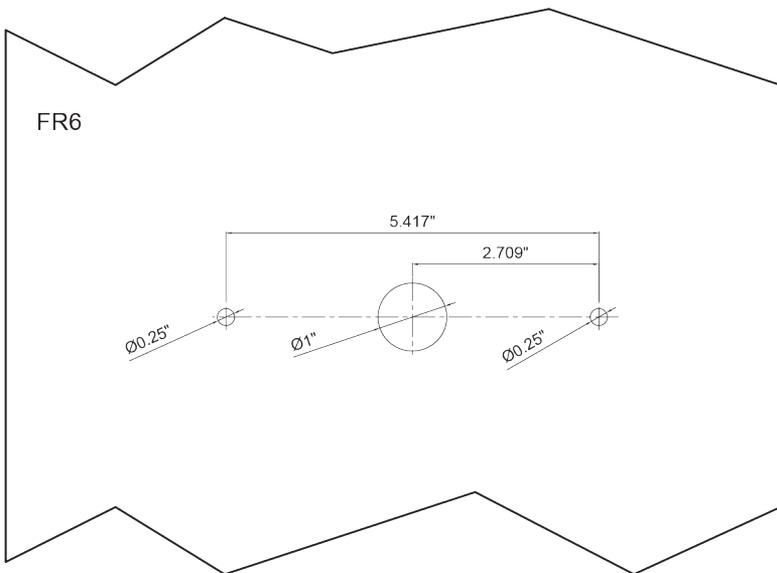
NOTE: For maximum coverage and effectiveness, mount the light assembly in a horizontal orientation (see Figure 1).

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

To install the FireRay:

1. Position the light assembly on the desired mounting surface. Ensure that the unit is level side to side.
2. Using the dimensions provided in Figure 2, scribe the two mounting hole locations and a wiring routing hole location on the mounting surface.

Figure 1 Mounting holes



NOTICE

DAMAGE TO LIGHT: When installing the 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 7.8-11.3 in-lb. Failure to observe these precautions damages the light and void any warranty claims for the light.

NOTICE

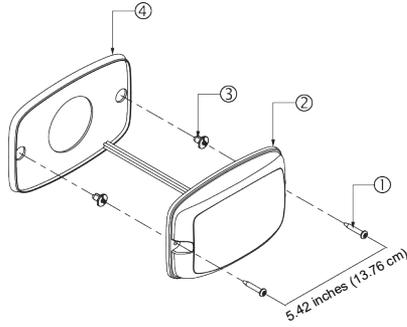
DRILLING PRECAUTIONS: When drilling holes, check the area you are drilling into to ensure that you do not damage vehicle components while drilling. All drilled holes should be de-burred, and all sharp edges should be smoothed. All wire routings going through drilled holes should be protected by a grommet or convolute/split loom tubing.

3. Drill two 1/4-inch mounting holes and a 1-inch wire routing hole at the previously scribed locations.
4. Install the two supplied plastic screw grommets into the two 1/4-inch mounting holes.

NOTE: When removing the light, inspect the mounting grommets for wear and replace them as needed.

5. Complete the electrical connections as described in the Making Electrical Connections section. The FireRay warning light assembly has two, three or four 7.8-inch long lead wires that exit the back of the unit for making electrical connections.
6. Align the utility light heads warning light assembly with the previously inserted plastic screw grommets and secure with the provided #8 x 1 inch stainless steel screws.

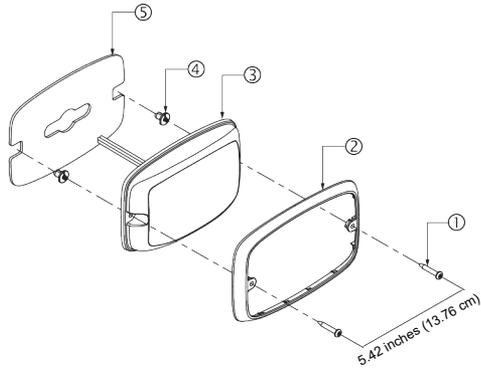
Figure 2 Exploded view - no bezel



LEGEND

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

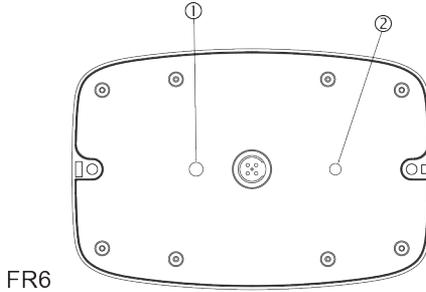
Figure 3 Exploded view - with bezel



LEGEND

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

Figure 4 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 DEL 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 TABLERO DE CIRCUITO IMPRESO EN CADALADO.
3. VISTA INFERIOR – EMPAQUETADURA DE MONTAJE RETIRADA PARA MAYOR CLARIDAD

Making Electrical Connections

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

⚠ WARNING

EXPLOSION HAZARD: To avoid a battery explosion, always disconnect the negative battery cable first and reconnect it last. Avoid causing a spark when connecting near or to the battery. The gases produced by a battery can cause a battery explosion that could result in vehicle damage and serious injury.

To make electrical connections, 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.

For Brake-Tail-Turn Lamp

- Red: To +Vdc for Brake Signal or Turn Signal (Suggested Fuse Rating at 1 A)
- White: To +Vdc for Tail Signal (Suggested Fuse Rating 1 A)
- Black: To -Chassis Ground
- Yellow: For Synchronization, Brake Signal Pattern

Connect yellow wires of all light heads together for synchronization. All light heads should be set at the same pattern.

For Brake Signal Pattern Change, momentarily apply +Vdc to the yellow wire once for the next pattern, or quickly three times to set to Flash Pattern #1

Table 2 Brake signal patterns

FP#	Brake Signal Pattern
1	Blink to Steady
2	Steady

Making Electrical Connections

NOTE: This unit may not be factory set at FP#1

For Turn Arrow Lamp

- Red: To +Vdc for Turn Signal (Suggested Fuse Rating 1 A)
- Black: To -Chassis Ground
- Yellow: For Synchronization, Turn Arrow Pattern

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

For Turn Arrow Pattern, momentarily apply +Vdc to the yellow wire once for the next pattern, or quickly three times to set to Flash Pattern #1

Table 3 Turn arrow patterns

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

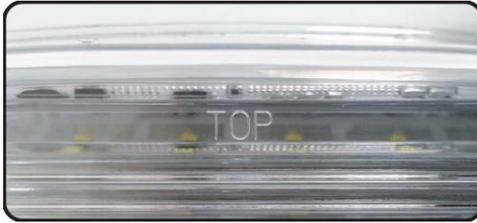
NOTE: 1. This unit may not be factory set at FP#1. Only FP#7 Steady meets specification FMVSS108.

For Reverse Lamp

- Red: To +Vdc (Suggested Fuse Rating 2 A)
- Black: To -Chassis Ground

IMPORTANT: Ensure that the “TOP” marking is oriented upward during installation.

Figure 5 Light Orientation



Maintaining the Light Head

Maintaining the Light Head

⚠ WARNING

CLEANING POLYCARBONATE DOMES AND LENSES: **Crazing (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 reflectors, mirror, or lenses reduce 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

Phone: 1-800-443-9132

Fax: 1-800-343-9706

Email: empserviceinfo@fedsig.com

Ordering Replacement Parts

To order replacement parts, call Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT) or contact your nearest distributor.

Table 4 Replacement Parts

Description	Part Number
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

Getting Repair Service

Getting Repair Service

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

Any units returned to returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization (RMA). Obtain an RMA from a Local Distributor or Manufacturer's Representative. Provided a brief explanation of the service requested or the nature of the malfunction.

Address all communications to the following address.

Federal Signal Corporation
Service Department
2645 Federal Signal Drive
University Park IL 60484-3167



FEDERAL SIGNAL

Safety and Security Systems

2645 Federal Signal Drive
University Park, Illinois 60484

www.fedsig.com

Customer Support

Police/Fire-EMS:

Work Truck:

Technical Support

800-264-3578 • +1 708 534-3400

800-824-0254 • +1 708 534-3400

800-433-9132 • +1 708 534-3400