FEDERAL SIGNAL
Safety and Security Systems

Model QuadraFlare®

Warning Lights

Installation and Service Instructions

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⚠ **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 QuadraFlare

The Federal Signal QuadraFlare Warning Light 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. The internal flasher has 26 selectable flash patterns. All units are designed to work with Federal Signal flashers. However, before they can operate with a Federal Signal flasher, put internal flashers into pattern 20 or 21. Refer to the particular flasher instructions for proper wiring. Additionally, all units have a Dim Mode (low power) that allows the user to reduce the light brightness for nighttime use. Model QuadraFlare Warning Light is designed for operation on 12 Vdc at 2.0 A. The models can have one side switched off while the opposite side continues to operate.

NOTE: All units should NOT be considered for steady burn applications.

Unpacking the QuadraFlare

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.
4	#6 x 2.0" Screw, S.S	7000A404-32
4	Rivet nut, Rubber, #6-32	70900417

Installing the QuadraFlare

⚠ 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 Figure 1).

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

To install the QuadraFlare, proceed as follows:

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

NOTICE

DAMAGE TO LIGHT: **When installing the QuadraFlare light on a vehicle, you MUST use the manufacturer's supplied 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 12 in-lb +/-10 percent.**

Failure to observe these precautions damages the 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 four 1/4" (0.250") mounting holes and a wire routing hole 1" (1.00") at the previously scribed locations.

3. Install the four supplied rubber rivet nuts into the four 1/4" mounting holes.

NOTE: When removing the QuadraFlare Warning 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 QuadraFlare Warning Light assembly has five 12" 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 QuadraFlare Warning Light assembly with the previously inserted rubber rivet nuts and secure with the provided #6 x 2.0" S.S. screws.

NOTE: QuadraFlare models have identifiable color-coded sticker dots located on the backside of the light assembly. The color-coded sticker dots correspond to the LED color on the PC board. Note these dots prior to any final assembly mounting, to obtain proper light assembly orientation.

Looking at the back of the unit with the vent hole on your right, the top of the light is controlled with the red wire and the bottom is controlled with the white wire (see Figure 3). If the light has one side with red LED's, the red wire controls that side and the white controls the other side (amber, blue, white, green, or red).

Wiring the QuadraFlare

The Model QuadraFlare Warning Light assembly operates on 12 Vdc. Five 12-inch long lead wires are supplied for making electrical connections to the QuadraFlare Warning Light assembly. Ensure that all wires are properly connected and insulated appropriately.

To make electrical connections, proceed as follows:

1. Using 18-gauge (minimum) wire, connect the red (+) lead to the positive power source terminal and the black (–) lead to the negative power source terminal.

2. On the QuadraFlare, connect the white (+) lead to the same positive power source terminal as the red (+) lead to operate or switch to power up independently of each other.

3. On all models, the violet wire (low power, dimming) is connected to +12 V power source. Removing the power restores the unit back to full power.

4. Apply power and test the QuadraFlare Warning Light assembly for proper operation.

Selecting a Flash Pattern

The QuadraFlare has 26 selectable flash patterns with Pattern 1 as the default. See Table 3 for a description of each pattern and the order in which it is stored in memory.

To select flash patterns, proceed as follows:

1. Remove and retain the four #6 x 2.0" S.S. mounting screws.

2. Apply power to the light.

3. Briefly touch the program wire (yellow) to +12 Vdc.

    NOTE: Holding the pattern wire (yellow) to +12 Vdc for 5 to 9 seconds returns you back to default flash pattern 1. Holding the pattern wire (yellow) to +12 Vdc for 10 seconds or more brings you to default flash pattern 2.

4.   When the pattern you want appears, let it run for 15 seconds to store it in memory.

5.   Secure the entire QuadraFlare Warning Light assembly to the mounting surface with the previously retained screws.

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.

Cleaning the QuadraFlare

⚠ 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 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 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
www.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 Drive
University Park, IL 60484-3167

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.

Model QuadraFlare

Replacement Parts

Table 2 Replacement Parts

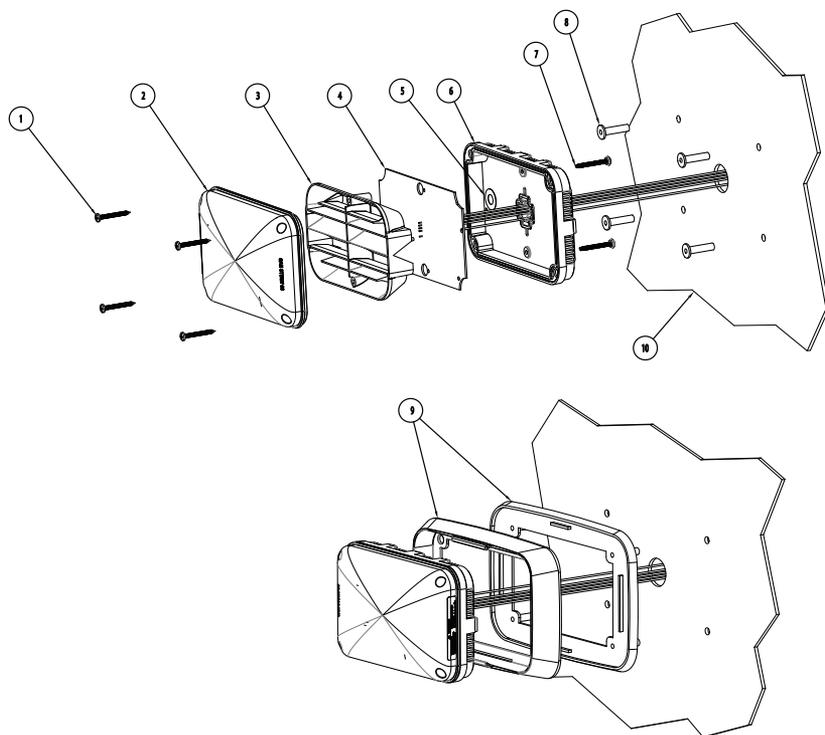| Description	QL43	QL64	QL73	QL97
Mounting Screws, #6 x 1-1/2"	7000A404-26	7000A404-26	7000A404-26	7000A404-26
Rubber Rivet Nut, #6-32	70900417	70900417	70900417	70900417
Lens, Fluted, Red	801201253	801200950	801201545	801201443
Lens, Fluted, Amber	801201253-01	801200950-01	801201545-01	801201443-01
Lens, Fluted, Clear	801201253-02	801200950-02	801201545-02	801201443-02
Lens, Fluted, Blue	801201253-03	801200950-03	801201545-03	801201443-03
Lens, Fluted, Green	801201253-04	801200950-04	801201545-04	801201443-04
Lens, Fluted, Red DOT	801201252	N/A	801201544	N/A
Lens, Fluted, Amber DOT	801201252-01	N/A	801201544-01	N/A
Lens, Fluted, Clear DOT	801201252-02	N/A	801201544-02	N/A
Lens, Fluted, Blue DOT	801201252-03	N/A	801201544-03	N/A
Lens, Fluted, Green DOT	801201252-04	N/A	801201544-04	N/A
Lens, Smooth, Red	N/A	801200983	N/A	801201444
Lens, Smooth, Amber	N/A	801200983-01	N/A	801201444-01
Lens, Smooth, Clear	N/A	801200983-02	N/A	801201444-02
Lens, Smooth, Blue	N/A	801200983-03	N/A	801201444-03
Lens, Smooth, Green	N/A	801200983-04	N/A	801201444-04
Optional Chrome Bezel w/Gasket	QL43MC	QL64MC	QL73MC	QL97MC

N/A indicates not available.

The following 26 patterns are available in all QuadraFlare models. Patterns that are marked with an asterisk are NFPA Lower compliant.

Table 3 QuadraFlare Models

Number	Flash Pattern
1*	DoubleFlash 150 — Simultaneous (default flash pattern 1)
2	DoubleFlash 150 — Alternating Horizontal
3*	Fedpulse 75 — Simultaneous
4	Fedpulse 75 — Alternating Horizontal
5*	DoubleFlash 75 — Simultaneous
6	DoubleFlash 75— Alternating Horizontal
7*	QuadFlash 75 — Simultaneous
8	QuadFlash 75 — Alternating Horizontal
9	SingleFlash 375 — Alternating Horizontal
10	SingleFlash 375 — Simultaneous
11	SingleFlash 150 — Alternating Horizontal
12*	SingleFlash 150 — Simultaneous
13	SingleFlash 75 — Alternating Horizontal
14*	SingleFlash 75 — Simultaneous
15	VariFlash — Alternating Horizontal
16	VariFlash — Simultaneous
17	SteadyPulse 75
18	Alternating Random Flash
19	Alternating/Simultaneous Random Flash
20	3 Flashes Steady (default flash pattern 2)
21	Steady Brake
22	FedPulse 75 — Alternating Vertical
23	QuadFlash 75 — Alternating Vertical
24	Fedpulse 75— Alternating X
25	QuadFlash 75 — Alternating X
26	Top Steady/Bottom 110 FPM

*Indicates NFPA lower compliance.
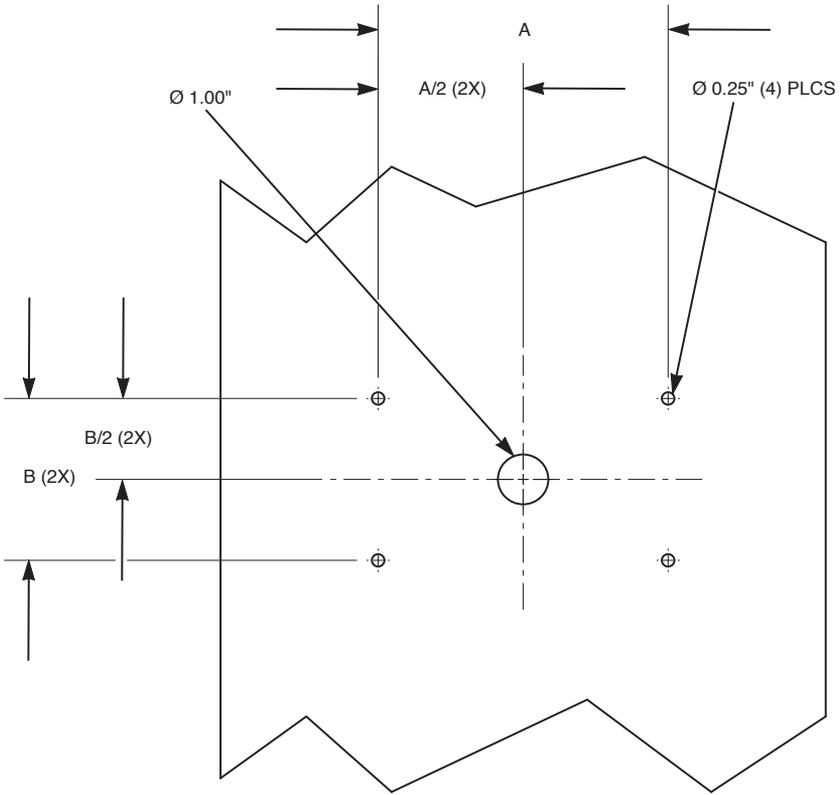
Figure 1 Exploded Assembly View

LEGEND

1. MOUNTING SCREW, #6 X 2.0", S.S.
2. LENS
3. REFLECTOR
4. LED PC BOARD ASSEMBLY
5. VENT
6. BASE
7. ASSEMBLY SCREWS (4)
8. SCREW GROMMET
9. BEZEL W/GASKET (OPTIONAL)
10. VEHICLE BODY

LEYENDA

1. TORNILLO DE MONTAJE, #6 x 2.0 pulg., A.I.
2. LENTE
3. REFLECTOR
4. CONJUNTO DE TABLERO DE CIRCUITO IMPRESO DE LED
5. VENTILACION
6. BASE
7. TORNILLOS DE MONTAJE
8. OJAL PARA TORNILLO (4)
9. BISEL CON EMPAQUETADURA (OPCIONAL)
10. CARROCERIA DEL VEHICULO
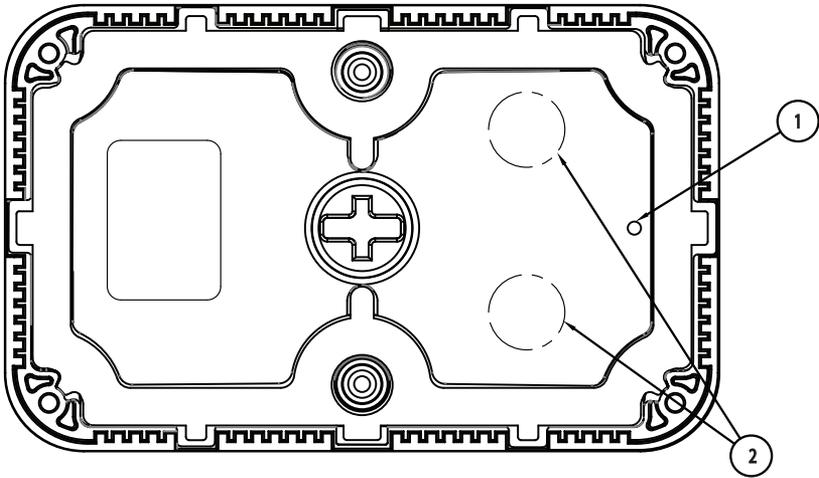
Figure 2 Mounting Hole Locations

290A5511-02

Table 4 Hole Patterns

Nominal size	A	A/2	B	B/2
4 x 3	4.200	2.100	2.375	1.188
6 x 4	5.750	2.875	3.250	1.625
7 x 3	6.562	3.281	2.375	1.188
9 x 7	7.250	3.625	5.250	2.625

Figure 3 QL64 Base

LEGEND

1.   VENT HOLE
2.   3/4" COLOR CODED STICKER DOTS
      TO BE APPLIED TO IDENTIFY THE
      CORRESPONDING PC BOARD
      ASSEMBLY LED COLOR ON EACH
      SIDE.

LEYENDA

1.   ORIFICIO DE VENTILACION
2.   LOS AUTOADHESIVOS EN FORMA DE
      PUNTOS CODIFICADOS POR COLRES
      DE 3/4 PULG. SE APLICARAN PARA
      IDENTIFICAR EL COLOR DEL LED
      CORRESPONDIENTE EN EL TABLERO
      DE CIRCUITO IMPRESO EN CADA
      LADO.

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