

INSTRUCTION SHEET
FOR
Cuda TriOptic™ MODEL 352012F SERIES

SAFETY MESSAGE TO INSTALLERS AND USERS



People's lives depend on your safe 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 systems, along with proficiency in the installation and use of safety warning equipment.
- DO NOT install equipment or route wiring in the deployment path of an air bag.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- In order for the light 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 to be used.
- Locate 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.
- You should frequently inspect the light to ensure that it is operating properly and that it is securely attached to the vehicle.
- This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.
- The light should be frequently inspected 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.

A. GENERAL.

The Cuda TriOptic Model 352012F is a LED light head designed for use in conjunction with all Federal Signal switch controllers. This light head is designed for mounting on a vehicle's interior, exterior or on a motorcycle. The housing is comprised of an extruded aluminum profile with a front high-impact polycarbonate lens. The unit is supplied with mounting hardware and a five-foot cable. This unit has an operating temperature range of -30°C to $+65^{\circ}\text{C}$ (-22°F to $+149^{\circ}\text{F}$). It may be mounted in the horizontal, or vertical position with the cable exiting from the rear. The physical dimensions of this unit are 4.2-inches long, 1.5-inches wide by 2.4-inches high. End caps and the front lens cover are compression sealed to the extruded housing using gaskets. The unit also features stainless steel hex machine screws and keps nuts for the channels on the top, bottom and rear of the housing. The Cuda TriOptic is programmed with eight flash patterns selectable by a control lead without opening the device. The light head can also be user configured to be controlled by an external flashing device.

B. INSTALLATION.



This product is intended for supplemental warning and for use in conjunction with an approved primary warning light system. Consult local codes and regulations to determine if the power supply/ light head combination complies with the horizontal or vertical mount position desired in your application.



When installing equipment inside air bag equipped vehicles, the installer MUST ensure that the equipment is installed ONLY in areas recommended by the vehicle manufacturer. Failure to observe this warning will reduce the effectiveness of the air bag, damage the air bag, or potentially damage or dislodge the equipment, causing serious injury or death to you or others.

1. Determine which side of the unit will be attached to the mounting surface. From a horizontal orientation, the top, bottom and rear surfaces of the unit are available for mounting. The top and bottom surfaces each have one mounting bolt channel and the rear surface has two (see figure 1). Choose the mounting channel that best suits your application.

2. See figure 1. Locate the opening in the selected mounting bolt channel and drop in two #8-32 hex head screws.

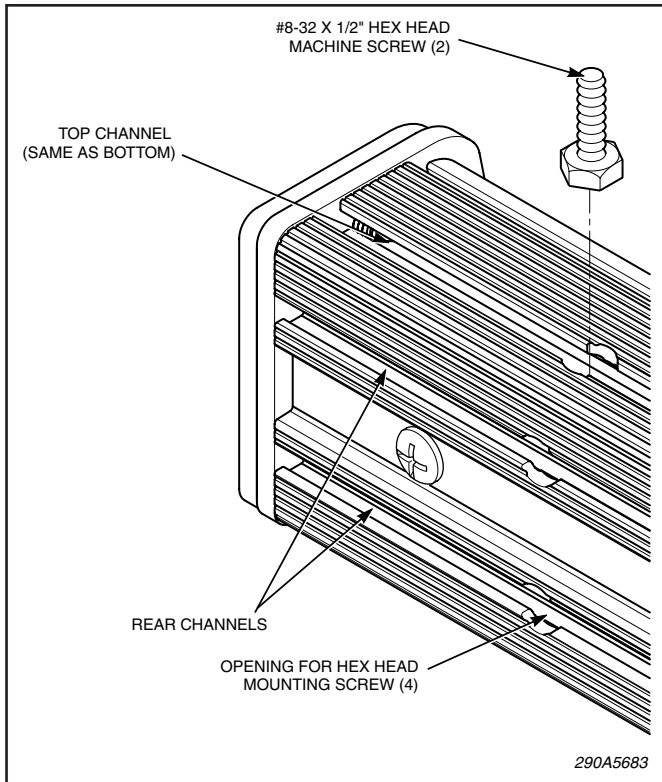


Figure 1.



Before drilling in ANY part of the 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.

3. Drill two 3/16" hole as needed for the #8-32 mounting screws. It is recommended that the screws be 3-5" apart.

4. Secure the unit to the mounting surface using the supplied keps nuts.



Install the control unit in an adequately ventilated area. Never install near heater ducts.



After prolonged operation, the unit dissipates heat and can cause burns. Do not hold the unit in your hands for extended periods of time. Do not touch the unit during, or shortly after, operation. Always allow the unit to cool before handling.

C. ELECTRICAL SPECIFICATIONS AND FEATURES.

NOTE

Powering multiple devices with a common control lead may cause one or more units to briefly remain functional after signal power is removed. For example, due to high input filter capacitance, a strobe supply can briefly supply the current required to operate a low current device such as a Cuda TriOptic. If necessary, use a relay to isolate devices with large filter capacitors. See figure 2 for suggested schematic, all components and wires are user-supplied.

The unit is intended to operate on a 12.8 VDC system. It includes a jacketed 6 conductor cable. The 6 conductors are: red (positive), black (negative), green (programming), yellow (external flash), orange (external flash), and white (not used). This unit is intended to work in conjunction with all Federal Signal switch controllers.

1. Flashing Operation.

a. Cut and insulate the orange and yellow wires. These are not used.

b. Connect the black wire to ground.

c. Using a user-supplied 3A fuse connect the red wire to a positive 12 VDC source.

d. This unit features 8 flash patterns that are selected by grounding the programming wire (green). The flash patterns are as follows:

1. Steady On
2. 120 FPM
3. 165 FPM
4. 240 FPM
5. 300 FPM
6. Combo 1:
4 intervals @ 120 FPM
10 intervals @ 300 FPM
7. Combo 2:
2 intervals @ 120 FPM
3 intervals @ 165 FPM
6 intervals @ 240 FPM
3 intervals @ 165 FPM
2 intervals @ 120 FPM
10 intervals @ 300 FPM
8. Combo 3:
1 interactive interval @ 120 FPM
2 intervals @ 120 FPM
6 intervals @ 240 FPM
14 intervals @ 480 FPM
6 intervals @ 240 FPM
2 intervals @ 120 FPM
1 interactive interval @ 120 FPM

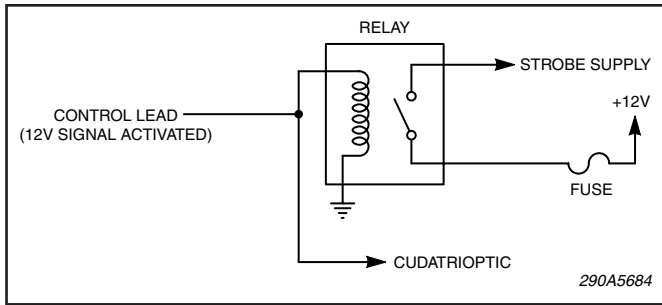


Figure 2.

After the desired pattern has been selected connect the programming wire (green) directly to the positive power wire (red).

The unit is designed to return to the last flash pattern selected before it was de-energized. For example, if the unit is de-energized at the seventh flash pattern and then re-energized, the seventh pattern illuminates. However, there is a two second delay for the unit to remember the last flash pattern. So, if the unit is energized and functioning on the third flash pattern and the unit is switched to the fourth flash pattern and de-energized within two seconds, the unit will return to the third flash pattern when the unit is re-energized.

2. External Flashing Device Operation.

a. For a high side activated flasher, use a user-supplied 3A fuse and connect the red and green wires to the output control lead on the flasher. Connect the black, yellow, and orange wires to ground.

b. For a low side activated flasher, use a user-supplied 3A fuse and connect the red and green wires to a 12V source. Connect the orange, black, and yellow wires to the output control lead on the flasher.

SAFETY MESSAGE TO OPERATORS



People's 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 manmade 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

D. MAINTENANCE.

1. *General.*



Crazing (cracking) of lenses will cause reduced effectiveness of the light. Do not use cleaning agents (which will cause 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.

Ordinary cleaning of the plastic lenses can be accomplished by using mild soap and a soft rag. Should fine scratches or a haze appear on a lens, they can ordinarily be removed with a non-abrasive, high-quality, one-step, automotive paste cleaner/wax and a soft cloth.

2. *Replacement Parts.*

The unit must not be opened under any circumstance, failure to adhere to this may result in moisture entering into the unit causing premature failure. Please contact the factory if the unit is not functioning properly.

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