INSTALLATION & OPERATION MANUAL

REAR VIEW MIRROR LIGHTHEADS

IIIIIICODE 3®
A PUBLIC SAFETY EQUIPMENT COMPANY

RVM™ *LED-X*™
REAR VIEW MIRROR LED LIGHTHEADS

Contents:

IMPORTANT: *Read all instructions and warnings before installing and using.*
INSTALLER: *This manual must be delivered to the end user of this equipment.*

Introduction

The New L.E.D. Rear View Mirror Light LED-X represents an effective warning signal device. The product has been designed to be easily installed and operated. A list of standard features is shown below for each model. The LED-X models utilize state-of -the-art High Flux L.E.D. Lightheads along with specially designed optics to produce a true emergency level signal available in (Red, Amber and Blue). These lightheads last longer and use less current than standard halogen or strobe lamps.

⚠️

WARNING!

The use of this or any warning device does not insure that all drivers can or will observe or react to an emergency warning signal. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes.

The effectiveness of this warning device is highly dependent upon correct mounting and wiring. Read and follow the manufacturer's instructions before installing or using this device. The vehicle operator should insure daily that all features of the device operate correctly. In use, the vehicle operator should insure the projection of the warning signal is not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. This equipment is intended for use by authorized personnel only. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should check all applicable city, state and federal laws and regulations.

Code 3 , Inc., assumes no liability for any loss resulting from the use of this warning device. Proper installation is vital to the performance of this warning device and the safe operation of the emergency vehicle. It is important to recognize that the operator of the emergency vehicle is under psychological and physiological stress caused by the emergency situation. The warning device should be installed in such a manner as to: A) Not reduce the output performance of the system, B) Place the controls within convenient reach of the operator so that he can operate the system without losing eye contact with the roadway.

Emergency warning devices often require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.

PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.

Standard Features

LX2F-XX - 2 Head L.E.D. warning flashing system
9' power cord with cigarette plug-in provided
10-16 Vdc operation, Current: less than 1amp average, all colors
Reverse polarity protection
21 flash patterns, externally controlled

LX1F-X - 1 Head L.E.D. flashing system
9' power cord with cigarette plug-in provided
10-16 Vdc operation, Current: less than 1amp average, all colors
Reverse polarity protection
10 flash patterns, externally controlled

LX1SB-X - 1 Head L.E.D. Steady-Burn System
9' Power cord with cigarette plug-in provided
10-16 Vdc operation
Current: Blue-.8A avg
Red, Amber - .5A avg.
Reverse polarity protection

LX3F-XXX- 3 Head L.E.D. warning flashing system
9' power cord with cigarette plug-in provided
10-16 Vdc operation, Current: less than 1 amp average, all colors
Reverse polarity protection
10 flash patterns

Unpacking & Pre-installation

After unpacking the items, carefully inspect the contents for damage that may have occurred during transit. If any item is damaged, please contact the carrier immediately.

To test the operation of the product before installation follow the directions given below:

RDL2SF , RDL1SF, RDL1SB - Self-contained L.E.D. lighting units can be tested by inserting the cigarette

| WARNING!	⚠	This Product contains high intensity LED devices. To prevent eye damage, DO NOT stare into light beam at close range.

Installation & Mounting

⚠ WARNING!	This unit must be mounted within the interior passenger compartment of the vehicle only. It is not intended for use in exterior applications. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) **will** affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving, sudden braking or collision. Failure to follow instructions can result in personal injury.

Vehicle Windshield

The Rear View Mirrow lights are designed to be mounted to the windshield or rear window of your vehicle. The following instructions must be followed to insure that the unit is mounted correctly. Attach the (1) set of suction cups to (1) of the mounting bracket (see Fig. 1 for orientation) with the #10 self tapping screws, do not overtighten the screws. Next, fasten the bracket without suction cups with (2) #10-24 machine screws, #10 lock washers and #10-24 nuts, but do not tighten the nuts at this time. Mount the bracket assemblies to the rear of the RVM unit with the (4)¼-20 carriage bolts and kep nuts, make sure one bolt captures the tether cord between the bracket and the case as illustrated in Fig. 1. After the bracket assembly is fastened to the unit, adjust the bracket without suction cups so that the unit will be level with the ground when mounted to the windshield. Be certain that the vehicle is on level ground before adjusting the bracket. Also try to keep the unit as close to the windshield as possible.This can be adjusted by sliding the bracket assembly up or back on the unit before tightening it down. When the angle is set, tighten all screws and nuts. See Fig. 1 for assembly illustration. Once the unit is mounted on the windshield, locate a place to mount other end of the tether cord. Depending on where the unit is mounted, the tether cord can be attached anywhere on the dash or to the roof of the vehicle, as long as it is into sheet metal. Hold the free end of the tether cord in position and verify that the LED unit cannot reach the passenger or driver. Then, attach the tether cord to this section of sheet metal (not to plastic or rubber). Note: When removing the unit from the windshield be sure to release the suction cups by lifting the tabs on each suction cup. If the unit is pulled off the windshield, it could result in stripping out the holes in the suction cups.
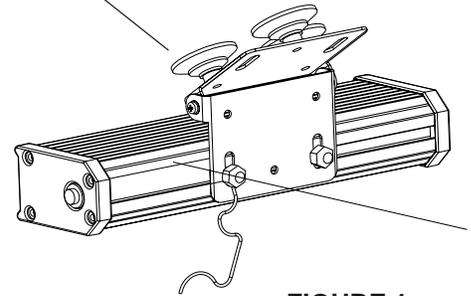
FIGURE 1

The RDMLED Rear Deck Mounting option allows the LED unit to be mounted to the rear deck of your vehicle. The following instructions must be followed to insure that the unit is mounted correctly:

Attach the mounting hardware to the unit as shown in Fig. 2. Place the unit against the rear deck and make adjustments with the hardware until the product is located in an area that does not obstruct the view or inflict injury to either driver or passenger. Tighten loose hardware and mark the position of each mounting foot. Remove bracket assemblies from the unit. Using the marked positions, mount the brackets on the rear deck with user supplied sheet metal screws or through-bolts. Mount the unit to the brackets using the included nuts and carriage bolts. Adjust the unit to provide the most effective signal.

Caution: The unit must be mounted through the steel of the vehicle. Avoid mounting to plastic or other non-structural members.

**FIGURE 2
MOUNTING**

**S14041
Std. suction cup
Mounting kit**
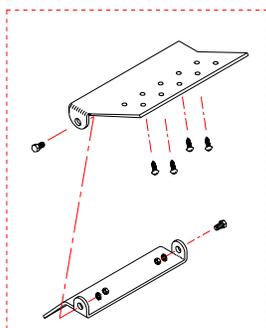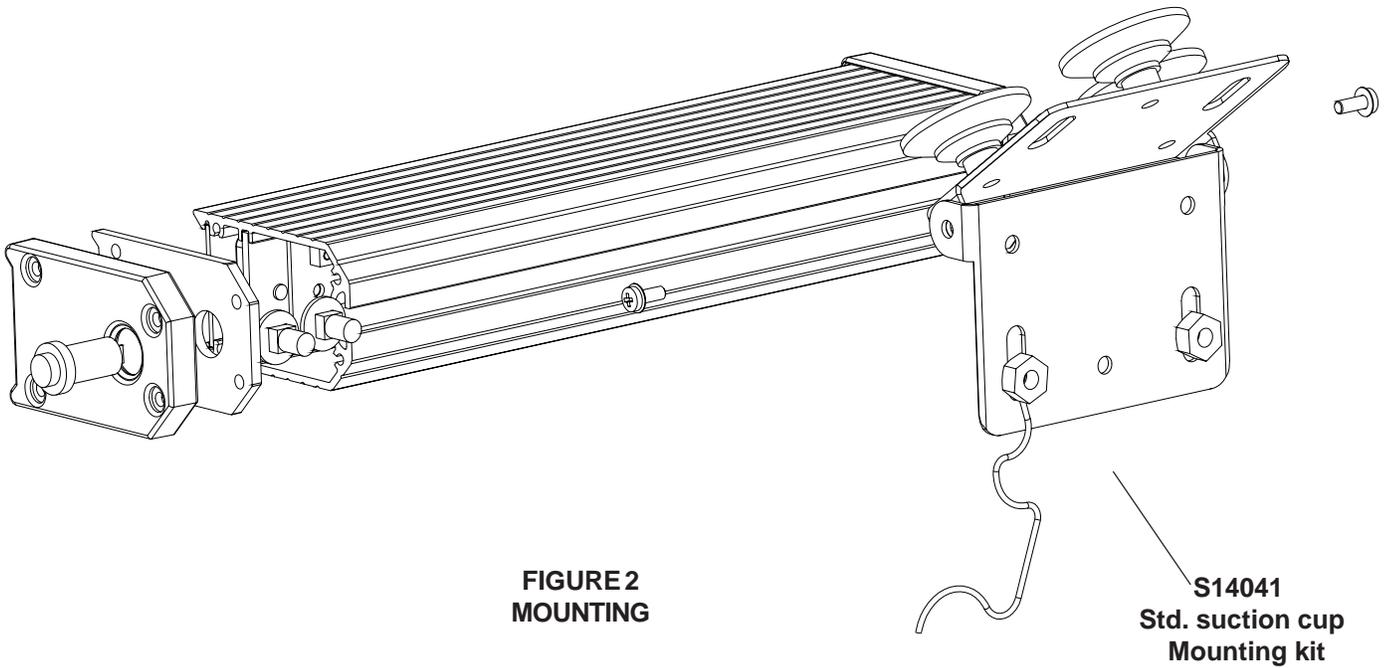
Optional RVMMMS
Mirror Mount System
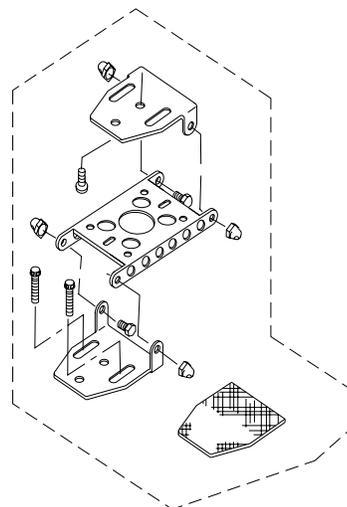
Optional RDMRVM
Rear Deck Mtg. Bkt.

Wiring Instructions

All LED-X models are stand alone self-contained units ready for installation with no special wiring required. They are provided with a cigarette plug designed to be used with a +12VDC fused lighter socket. Alternately, the user can remove the plug and connect (through a properly sized fuse) to a user supplied switch. The ribbed wire is positive (+12VDC) and the smooth wire is negative.

Operation

The LED series lightheads arrive completely assembled and ready for installation. They are designed to function at 10 - 16 VDC.

To operate the LED-X unit, insert the cigarette plug provided into a +12VDC lighter socket and rotate 1/4 turn to insure a good electrical connection.

Flash Patterns

LX1F-X 1 Head Model

Selecting and programming flash modes:

This unit will provide up to ten different flash modes. Each of these modes can be selected by using the momentary button located on the end of the unit. Each flash mode can be selected by momentarily depressing the button until the unit stops flashing, and then releasing. As each flash mode is selected it is automatically programmed into the unit such that when power is removed it will always return to the selected mode the next time power is applied. If another mode is desired, just use the momentary button to step through each mode until the desired mode is found.

Selecting and programming Cycle Flash mode:

When shipped, the unit will be in "Cycle Flash mode". This mode cycles through a variety of flash patterns continuously providing an ever changing warning signal. If the unit is not in Cycle Flash, or you wish to return to Cycle flash from another mode, then the momentary button should be depressed until the unit stops flashing, and held on for several seconds then released. This will program cycle flash into the unit.

Flash Pattern	Description
Cycle Flash	Cycles through various patterns @ 70 fpm
Steady-Burn	Steady-Burn
Five Flash	Five Pulses per flash @ 70 fpm
Quad Flash	Four Pulses per flash @ 70 fpm
Triple Flash	Three Pulses per flash @ 70 fpm
Double Flash	Two Pulses per flash @ 70 fpm
Fast Double Flash	Two Pulses per flash @ 85 fpm
NFPA	Four Pulses, 70% Duty Cycle @ 75 fpm
Quad Pop Flash	Four Pulses per flash (3 equal, 1 extended) @ 70 fpm
Triple Pop Flash	Three Pulses per flash (2 equal, 1 extended) @ 70 fpm

LX1SB-X 1-Head Model

This unit will provide one steady-burn operation mode. It can be used as a stationary warning light, it can also be flashed with an external relay-based flasher.

LX2F-XX: 2 Head Model

Selecting and programming flash modes:

This unit will provide up to twenty one different flash modes. Each of these modes can be selected by using the momentary button located on the end of the unit. Each flash mode can be selected by momentarily depressing the button until the unit stops flashing, and then releasing. As each flash mode is selected it is automatically programmed into the unit such that when power is removed it will always return to the selected mode the next time power is applied. If another mode is desired, just use the momentary button to step through each mode until the desired mode is found.

Selecting and programming Cycle Flash mode:

When shipped, the unit will be in "Cycle Flash mode". This mode cycles through a variety of flash patterns continuously providing an ever changing warning signal. If the unit is not in Cycle Flash, or you wish to return to Cycle flash from another mode, then the momentary button should be depressed until the unit stops flashing, and held on for several seconds then released. This will program cycle flash into the unit.

Flash Modes:

Alternating Heads	Simultaneous Heads	Steady with Flashing
Cycle Flash	Quad Flash	Fast Double Flash w/Steady
Single Flash	Triple Flash	Quad Flash w/Steady
Double Flash	Double Flash	
Triple Flash	Single Flash	
Quad Flash	Pursuit Flash	
Five Flash		
Fast Single Flash		
Fast Double Flash		
Fast Triple Flash		
Fast Quad Flash		
Quad Pop Flash		
Triple Pop Flash		
Double Pop Flash		
Wig-Wag Flash Alt.		

Note: All modes flash at a rate of 70 fpm minimum. Fast modes flash at a rate of 100 fpm minimum.
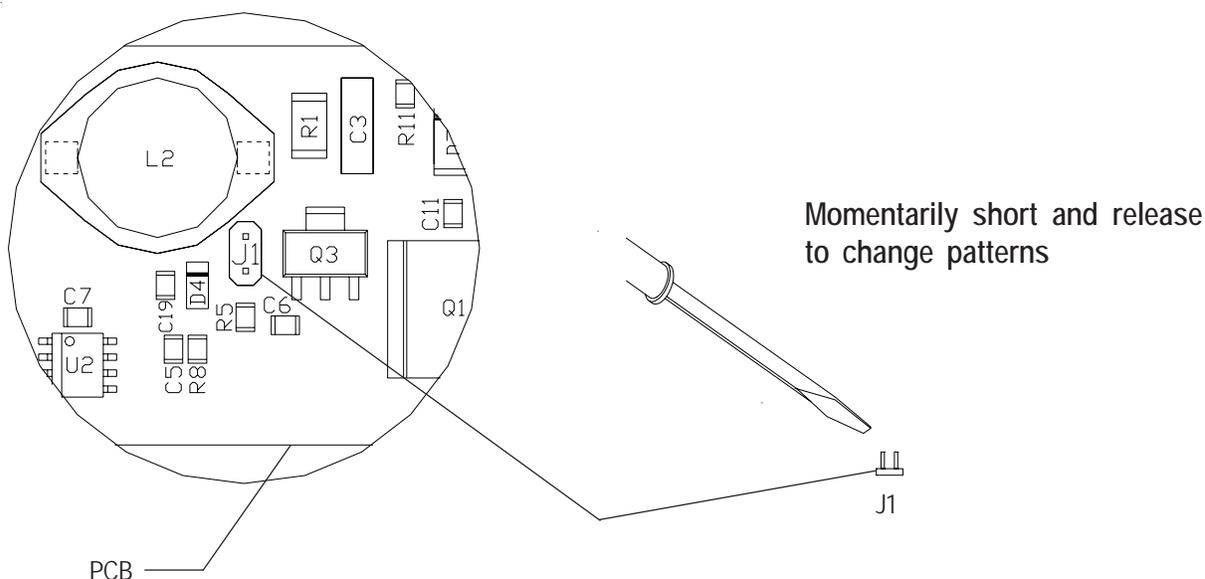
LX3F-XXX 3 Head Model

Selecting and programming flash modes:

This unit will provide up to ten different flash modes. The unit will be in "Cycle Flash" mode as the standard pattern. The mode can be changed by shorting the 2-pin header, J1 as shown in Figure 3 on the next page. This will require disassembly of the unit in order to gain access to each of the individual control boards. The table in Figure 3 shows the available patterns and the order when stepping through patterns. As each flash mode is selected it is automatically programmed into the unit such that when power is removed it will always return to the selected mode the next time power is applied.

Selecting and programming Cycle Flash mode:

When shipped, the unit will be in "Cycle Flash" mode. This mode cycles through a variety of flash patterns continuously providing an ever changing warning signal. If the unit is not in "Cycle Flash", or you wish to return to "Cycle Flash" from another mode, the module can be reset to "Cycle Flash" by shorting the header for greater than 5 seconds and releasing.

Flash Pattern	Description
Cycle Flash	Cycles through various patterns @ 70 fpm
Steady-Burn	Steady-Burn
Five Flash	Five Pulses per flash @ 70 fpm
Quad Flash	Four Pulses per flash @ 70 fpm
Triple Flash	Three Pulses per flash @ 70 fpm
Double Flash	Two Pulses per flash @ 70 fpm
Fast Double Flash	Two Pulses per flash @ 85 fpm
NFPA	Four Pulses, 70% Duty Cycle @ 75 fpm
Quad Pop Flash	Four Pulses per flash (3 equal, 1 extended) @ 70 fpm
Triple Pop Flash	Three Pulses per flash (2 equal, 1 extended) @ 70 fpm

Momentarily short and release to change patterns

Flash Pattern Header for LEDX
FIGURE 3

Options & Specifications

(Currents are calculated at 12.8 volts)

MODEL	H	L	D	WEIGHT	OPERATING VOLTAGE	CURRENT DRAW	FLASH RATE
LX3F-XXX - 3 Head L.E.D. warning system	1.75"	13.8"	2.75"	2.0 lbs	10-16Vdc	.6A avg	70 fpm min
LX2F-XX - 2 Head L.E.D. warning system	1.75"	9.3"	2.75"	1.3 lbs	10-16Vdc	.6A avg	70 fpm min
LX1F-X - 1 Head L.E.D. warning system	1.75"	4.8"	2.75"	1 lbs	10-16Vdc	Blue-.4A avg Red/Amber-.25A avg	70 fpm min
LX1SB-X - 1Head L.E.D. warning system	1.75"	4.8"	2.75"	1 lbs	10-16Vdc	Blue-.8A avg Red/Amber-.5A avg	NA

Maintenance

The product is designed for minimal maintenance and trouble free service. Periodic inspection of the product will ensure trouble free operation. However, occasional cleaning of the lenses is required to sustain maximum light output. Use plain water and a soft cloth, or Code 3 lens polish and a very soft paper towel or facial tissue.

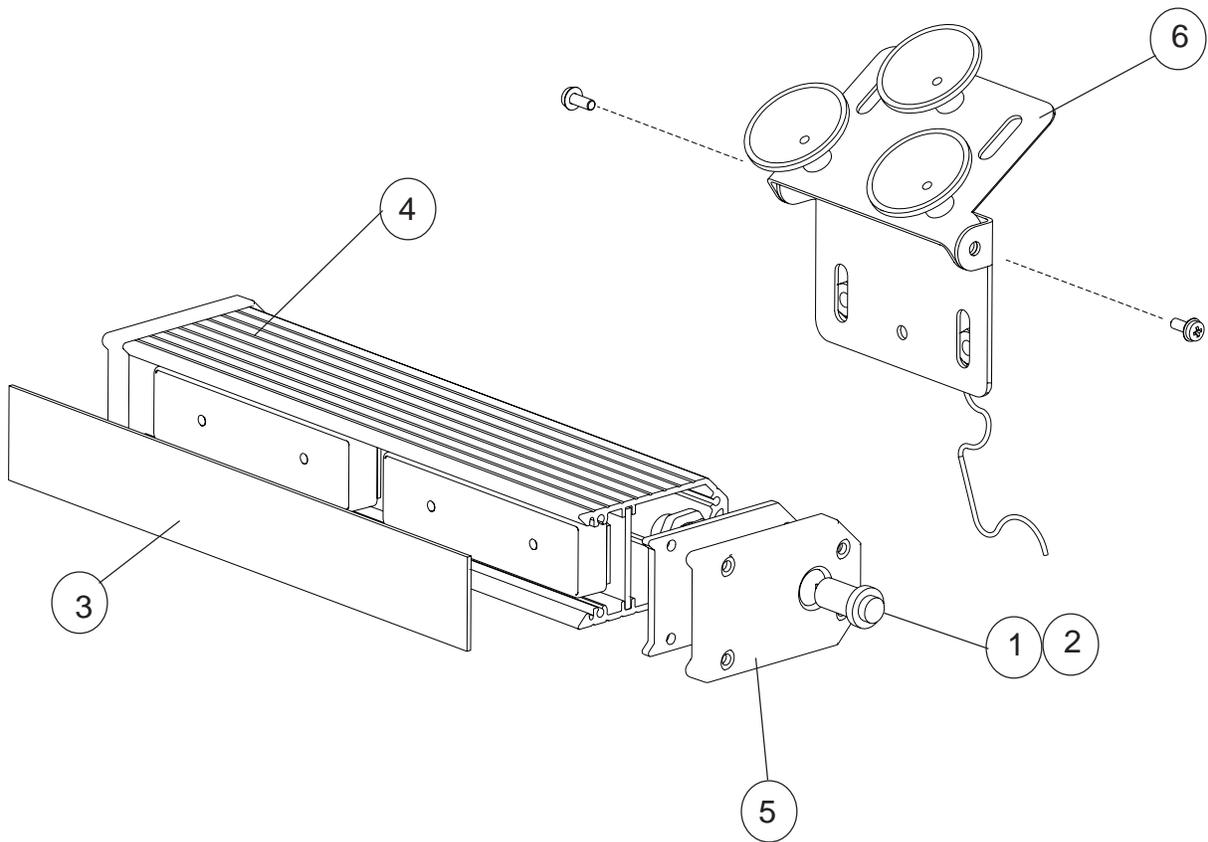**Note:** Plastic scratches easily, be careful when cleaning the optic filters.
Should problems arise during installation or during the life of the product, refer to the guide below for information on troubleshooting. Additional information may be obtained from the factory technical HOTLINE at (314) 996-2800.

Note: Should this Product be diagnosed as containing a diffective light-head module, contact CODE3 and arrange to ship entire unit back to factory for service.
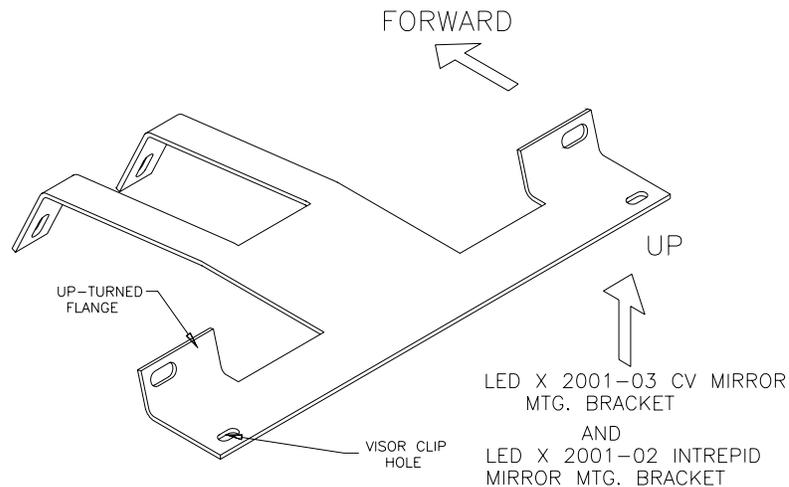
TROUBLESHOOTING		
	PROBABLE CAUSE	**REMEDY**
Product does not activate	a. No power to unit	a. Check wiring for loose connection.
	b. Power input wires reversed	b. Check power connections
	c. Damaged or shorted cabling	c. Check cables for damage

Parts List

Ref No.	Description	Part No.	LX1F-X/ LX1SB-X	LX2F-XX	LX3F-XXX
1	Switch	T05742	1	1	-
2	Switch Harness	T05763	1	1	-
3	Clear Lens	T05735	-	1	-
		T05734	1	-	-
		T89943	-	-	1
4	Extrusion	T05724	-	1	-
		T05737	1	-	-
		T89942	-	-	1
5	End Cap	T02650	2	2	2
6	RVM Suction Cup Mtg. Kit	S14041	1	1	1
Not shown	Optional RVMMMS Mfg. Kit	RVMMMS	1	1	-
Not shown	#6x1/2" sheetmetal screw	T02797	8	8	8
Not shown	Adhesive Pad	T01665	1	1	1
Not shown	Hole plug	T00337	1	1	1
Not shown	Optional RDMRVM Mtg. Kit	RDMRVM	1	1	1
Not shown	Cig. Lighter Cable Ass'y	T03042	1	1	1

Figure 4

9

FORWARD

UP

UP—TURNED
FLANGE

LED X 2001—03 CV MIRROR
MTG. BRACKET
AND
LED X 2001—02 INTREPID
MIRROR MTG. BRACKET

VISOR CLIP
HOLE
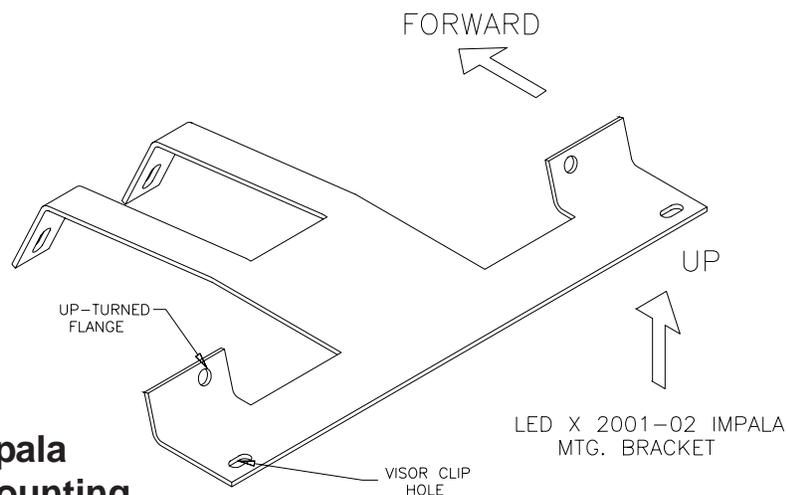
2001-03 Ford Crown Vic and 2001-02 Dodge Intrepid Installation and Mounting

1) Remove sun visor clips.
2) Slide bracket between the headliner and the roof of car.
3) Horizontal slots on up-turned flange of bracket will align with existing holes in roof.
4) Slots on flat part of bracket will align with the hole for the sun visor clips.
5) Run T01072 5/16" - 18 sheet metal screws through slot in up turned flange into holes in roof.
6) Re-attach sun visor clips through slots on the flat part of the bracket.
7) Attach LED X unit to bracket.

FORWARD

UP

UP—TURNED
FLANGE

LED X 2001—02 IMPALA
MTG. BRACKET

VISOR CLIP
HOLE

2001-02 Chevy Impala Installation and Mounting

1) Remove sun visor clips.
2) Slide bracket between the headliner and the roof of car.
3) Slots on flat part of bracket will align with the hole for the sun visor clips.
4) Drill 1/8" holes at 3/16" hole locations of bracket into roof support.
5) Run T05336 #8 sheet metal screws through holes in up turned flanges into holes drilled in roof support.
6) Re-attach sun visor clips through slots on the flat part of the bracket.
7) Attach LED X unit to bracket.

2007 Chevrolet Tahoe
Installation and Mounting

1) Remove sun visor clips.
2) Remove rear view mirror from windshield mount
3) Place bracket <u>over top</u> of the headliner of vehicle.
4) Rectangular slots on bracket will align with the hole for the sun visor clips.
5) Re-attach sun visor clips through slots on the flat part of the bracket.
6) Re-attach rear view mirror to windshield mount.
7) Attach LED X unit to bracket.
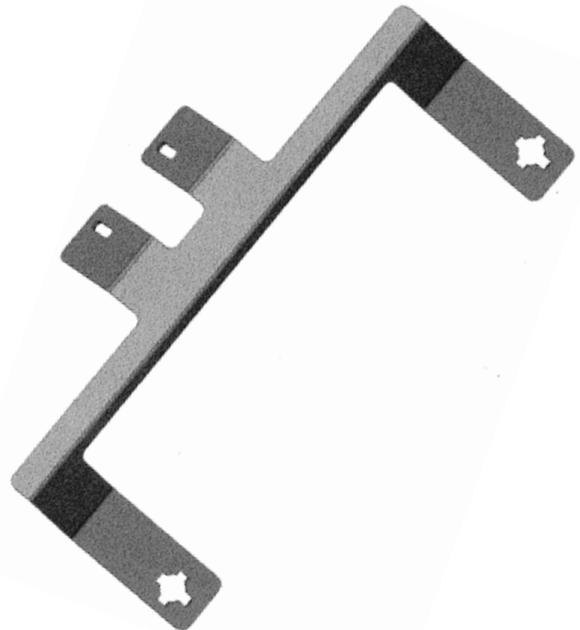
2007 Dodge Charger
Installation and Mounting

1) Remove sun visor clips.
2) Remove rear view mirror from windshield mount.
3) Slide bracket <u>between</u> the headliner and the roof of car.
4) X-slots on bracket will align with the holes for the sun visor clips.
5) Re-attach sun visor clips through slots on the flat part of the bracket.
6) Re-attach rear view mirror to windshield mount.
7) Attach LED X unit to bracket.

WARRANTY

Code 3, Inc. L.E.D. emergency devices are tested and found to be operational at the time of manufacture. Provided they are installed and operated in accordance with manufacturer's recommendations, Code 3, Inc. guarantees all parts and components to a period of 5 years (unless otherwise expressed) from the date of purchase or delivery, whichever is later. Units demonstrated to be defective within the warranty period will be repaired or replaced at the factory service center at no cost.

Use of inappropriate or inadequate wiring or circuit protection causes this warranty to become void. Failure or destruction of the product resulting from abuse or unusual use and/or accidents is not covered by this warranty. Code 3, Inc. shall in no way be liable for other damages including consequential, indirect or special damages whether loss is due to negligence or breach of warranty.

CODE 3, INC. MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY INCLUDING, WITH-OUT LIMITATION, WARRANTIES OF FITNESS OR MERCHANTABILITY, WITH RESPECT TO THIS PRODUCT.

PRODUCT RETURNS

If a product must be returned for repair or replacement*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

*Code 3, Inc. reserves the right to repair or replace at its discretion. Code 3, Inc. assumes no responsibility or liability for expenses incurred for the removal and / or reinstallation of products requiring service and/or repair.; nor for the packaging, handling, and shipping: nor for the handling of products returned to sender after the service has been rendered.

NEED HELP? Call our Technical Assistance Hotline - (314) 996-2800

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