INSTALLATION & OPERATION MANUAL

EXTERIOR LED MODULES

LXEX1

LXEX2
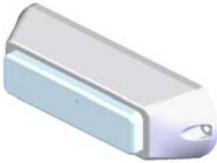
LXEX125P

LXEX64P

LXEX73P

Code 3, Inc., a subsidiary of Public Safety Equipment, Inc.

CODE 3 ®
INC.
PUBLIC SAFETY EQUIPMENT, INC.

LED-EX SINGLE OR DUAL EXTERIOR LED MODULE

Contents:

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

Introduction:

The Exterior LED modules are weatherproof LED based warning light modules that contain state-of-the-art high intensity LEDs. These products provide eight different operation modes including a steady-burn mode. These products may be adapted to a variety of exterior applications such as motorcycle applications, OEM fire truck, grill light and back-deck applications. The exterior LED is available in either a +12V or a +24V version.

Features and Specifications:

Operating Voltage: 10-16Vdc (+12V version), 22-30Vdc (+24V version), Reverse Polarity Protection. 50% Duty Cycle unless otherwise stated.

Flash Rate: 70 fpm minimum

Flash Modes (Flashing version only):

1. Cycle-Flash: Cycles through Triple, Quad, Double, and Fast Single modes at approximately 109 fpm.
2. Triple-Flash: Three consecutive pulses per flash at approxmately 83 fpm.
3. Quad-Flash: Four consecutive pulses per flash at approximately 77 fpm.
4. Double-Flash: Two consecutive pulses per flash at approximately 78 fpm.
5. Single-Flash: Single flash pattern at 75 fpm.
6. Quad-Flash 70% Duty Cycle: Can be used for NFPA.
7. Steady-burn: Continuous ON-state operation.

Flashing Current Draw: Red/Amber:

        Single - .25A Avg.
        Dual -   .5A Avg.

    Blue:

        Single - .4A Avg.
        Dual -   .8A Avg.

Steady Burn Current Draw: Red/Amber:

        Single - .5A Avg.
        Dual - 1.0A Avg.

    Blue:

        Single - .8A Avg.
        Dual - 1.6A Avg.

Available colors - Red, Amber or Blue or any combination for dual modules.
Available configurations - Single or dual light heads, Amber, Red, or Blue.

Options:

The LED-EX is available in five basic models:

- **LXEX1F-** A single head unit. The housing is available in black or brushed aluminum finish. The sealed cover lens is available in clear or colored to match the LED light output.
- **LXEX2F-** A dual head (over under) unit. The housing is available in black or brushed aluminum finish. The sealed cover lens is available in clear or colored to match the LED light output. Each head is individually controlled.
- **LXEX125P-** A single head unit. The housing is available in highly polished aluminum (chrome-like appearance).
- **LXEX73P-** A dual head (side by side) unit. The housing is available in highly polished aluminum (chrome-like appearance). For retrofit purposes, the mounting hole pattern matches the mounting hole pattern of a series 40 (7x3) perimeter light.
- **LXEX64P-** A dual head (over under) unit. The housing is available in highly polished aluminum (chrome-like appearance). For retrofit purposes, the mounting hole pattern matches the mounting hole pattern of a series 60 (4x6) perimeter light, and the periphery of the unit matches the periphery of an OsciLaser™ lens.

In addition to the flashing models, The LED-EX1 is also available in two special function versions:

The STT (Stop-Turn-Tail) version:

This version can be used as an Auxiliary stop-turn-tail light. When only the power (red) and ground (black) wire are connected, the light will come on in a reduced intensity steady burn tail-light mode. Grounding the white wire will result in a bright steady burn mode (stop-light) mode.

The steady-burning (non-flashing) version:

This version can be used as a stand-alone steady-burning light or be flashed with an LED flasher such as Code 3 PSELED12. This model has only two wires, a power (red) wire and a ground (black) wire.

Installation:

Single Exterior LED Module (LXEX1, LXEX125P):
This unit can be mounted to metal surfaces using two #8 x 1/2 pan head sheet metal screws (included). This unit can also be mounted to plastic surfaces using two #8 x 1/2 pan head machine screws (included). An additional 0.25" minimum diameter mounting hole is needed to mount the single exterior LED module. The cable routing hole can be drilled (Refer to Figure as shown below). An optional mounting rubber gasket, included with the unit, may be used to prevent oxidization and galvanization of the mounting surface due to metal-on-metal contact.
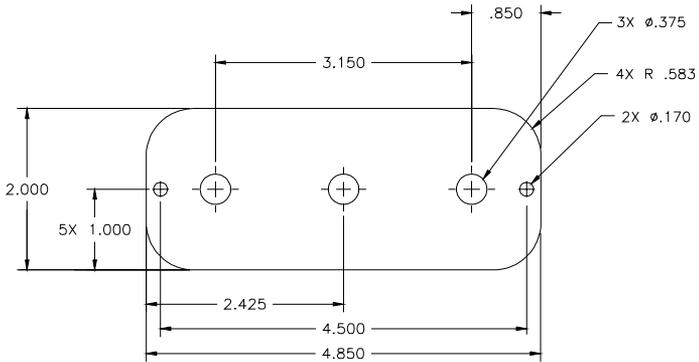
Figure 1 LXEX1
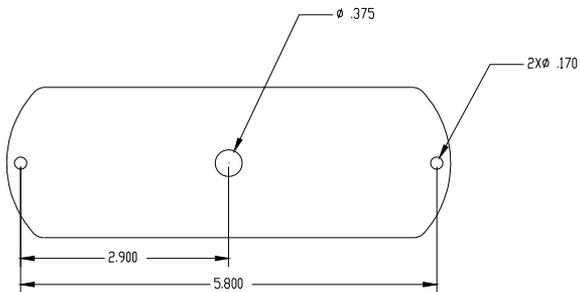
Figure 2 LXEX125

Dual Exterior LED Module (LXEX2, LXEX73P, LXEX64P):

This unit can be mounted to metal surfaces using #8 x 1/2 pan head sheet metal screws (included). This unit can also be mounted to plastic surfaces using #8 x 1/2 pan head machine screws (included). Two additional 0.25" minimum diameter, or (1) .500" minimum diameter mounting holes are drilled as shown in Figure below.   An optional mounting rubber gasket, included with the unit, may be used to prevent oxidization and galvanization of the mounting surface due to metal-on-metal contact.

Figure 3 LXEX2F

Figure 4 LXEX73P

Figure 5 LXEX64P

Wiring:

Flashing Models:

Both single and dual LED-EX modules are equipped with a 8" long 3-wire cable harness (two for dual modules). The user is required to furnish terminals to attach wires to meet specific requirement.
Connect wires as follows:

1. Red wire: Power wire, connect to **+12V (+24V for 24 volt version)** voltage line.
2. Black wire: **GND** wire, connect to ground terminal.
3. White wire: Control wire, may be left unconnected. It can also be connected to **GND** through a momentary push-button switch, and be used for programming the operation mode.

Note: **The white wire should NOT be connected to a positive voltage under any circumstances.**

Note: **It is possible to tie the red wires from both modules, and the black wires from both modules when wiring the dual modules, provided that a properly sized wire is used for the common connection. The white wires should not be wired together if independent programming of the two heads is desired.**

Note: **The +24V versions will have a 24 volt label designating the unit for operation on a +24 volt electrical system. The label will typically be located on the back of the unit.**

STT (Stop-Turn-Tail) Models:

These models are equipped with a 8" long 3-wire cable harness. The user is required to furnish terminals according to his or her preference. Connect the wires as follows:

1. Red wire: Power wire, connect to **+12V** voltage line.
2. Black wire: **GND** wire, connect to a ground terminal.
3. White wire: Stop-Light trigger input, grounding this wire will result in high-intensity operation. This wire may be connected to an active low brake-light trigger output if available.

Steady-Burning (Non-Flashing) Models:

These models are supplied with only two wires. Red power wire and black **GND** wire. The third (white) wire is not available on these models.
Connect the wires as follows:

1. Red wire: Power wire, connect to **+12V** voltage line.
2. Black wire: **GND** wire, connect to Ground terminal.

Programming:

Programming the desired flash pattern (or operation mode) is done with the **white** control wire. You can scroll through the eight available flash patterns, by momentarily grounding the **white** control wire until you arrive at the desired operation mode. Momentary grounding of the white wire can be accomplished either by momentarily touching the wire to **GND**, or through a momentary push-button switch.
The unit will come on in the default Cycle-flash mode at the time of first power-up, until the desired flash pattern is programmed. The default flash pattern can then be changed by programming the desired pattern into the unit, the unit will continue to operate in the same mode every time the unit is turned off and turned back on. The default flash pattern can be changed at will for any number of times.
The unit can be reset back to the default flash pattern (cycle-flash) by grounding the control wire for about 8-10 seconds and then releasing it. This can be done while operating in any of the flash modes.

Note: It is possible to program the two heads on the dual module individually as shown on page 7. This should be done when a different flash pattern is desired for each head. The two heads can also be programmed simultaneously into the same flash pattern by tying the two white control wires together then programming as shown on page 7.

Maintenance:

The Exterior LED Modules are completely sealed units designed to be trouble and maintenance free. Refer to the guide below for help with troubleshooting. Should the unit be diagnosed as malfunctioning, remove unit and replace with a new module.

WARNING! ⚠	LED module housings may become hot with extended use. Allow modules to cool completely before attempting to remove.

TROUBLESHOOTING		
Problem	**Probable Cause**	**Remedy**
Lighthead does not activate	a. No Power to unit b. Power input wire reversed c. Damaged or shorted cabling d. Defective Lighthead e. Control wire permanently grounded or shorted to GND	a. Check wiring for loose connection b. Reverse Power wires c. Check cables for damage d. Replace lighthead module e. Avoid permanent grounding of control wire
Lighthead is constantly ON	a. Control wire permanently grounded or shorted to GND	a. Avoid permanent grounding of control wire

Notes

Notes

WARRANTY

Code 3,®Inc.'s 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, WITHOUT 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 return to sender after the service has been rendered.

For Technical Support / Service, please call 314-996-2800.