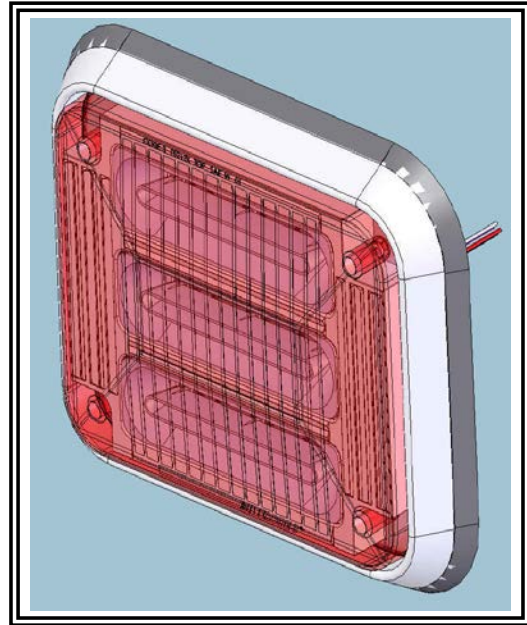


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# **CODE 3<sup>®</sup>** INSTALLATION & OPERATION MANUAL

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## LED PriZm II Perimeter Lights



7x9 Shown

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

## General Description

The PriZm II Perimeter lights are offered in sizes 3x7, 4x6 and 7x9. Both solid and multi-color are available. Multi-color lights are “split” horizontally (left/right). The outer lens is field replaceable, and provides a waterproof barrier via an interface with a field replaceable outer gasket. The units are surface-mounted, requiring no recesses to be cut in the vehicle for normal mounting. Only a hole for wiring and 4 small holes for mounting screws will be required. The unit is available with or without bezel, and operates on (+12VDC). Solid color lights are offered in the following colors: Red, Blue, Amber, White and Green. Multi-colored lights are available in numerous configurations (refer to Table 3). Many flash patterns are offered, all between 70-250 fpm. The units also feature dimming, synchronization and independent on/off (certain models only).

## Specifications

	3x7	4x6	7x9
Size	1.5" x 4.75" x 9.0" (w/ bezel)	1.5" x 6.0" x 8.5" (w/ bezel)	1.5" x 9.0" x 11.0" (w/ bezel)
Weight	1.0 lbs	1.1 lbs	2.25 lbs
Operating Voltage	11-15 Volts		
Average Current Draw <sup>1</sup>	0.6 (8 LEDs), 0.7 (12 LEDs)		1.6 (24 LEDs), 1.9 (36 LEDs)
Peak Current Draw <sup>2</sup>	1.3 (8 LEDs), 1.6 (12 LEDs)		3.8 (24 LEDs), 4.6 (36 LEDs)

Note 1: At 12.8V, 78°F and using NFPA Quad Flash

Note 2: At 12.8V, 78°F



### 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.

Public Safety Equipment, 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. Wait 10 minutes after turning off the power from system before touching any internal components. Always wear hand and eye protection when handling electrical components. 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.

## Unpacking & Pre-Installation

Carefully remove the light head from its protective packaging. Inspect the unit for transit damage. Report any damage to the carrier and keep the shipping carton. Verify the contents of the package (refer to Table 3 and Figures 2 and 3). Test the lights before installation. To test, touch the black wire to ground and the red wire to 12 VDC. If a problem occurs, contact the factory.

## Installation & Mounting

1. Mark off and drill four 1/4" diameter mounting holes and the 1" wire hole on the vehicles mounting surface using the dimensions shown for the appropriate light (refer to Figures 4, 5 & 6). Verify free clearance exists behind the mounting surface for wires and fasteners before drilling.
2. Install customer supplied grommet in the 1" diameter wire hole. Install the four plastic grommets in the mounting holes (Code 3 supplied).
3. Route the vehicle power wires and allow a minimum of 3" of slack to protrude from the center opening at each light head location. Use 18 AWG for wires up to 40' length, 16 AWG for wires up to 70' length.
4. Refer to the section "Device Operation" prior to finalizing the electrical connections. Prepare the vehicle power wires and the light heads wires with terminations of the customer's choice (not supplied) as follows: Red: +12 VDC, Black: Ground, White: Program, Purple: Dim, Yellow: Sync, Green: Cutoff (refer to Figure 1). Waterproof connectors are recommended.
5. Route the power wires through the center opening of the light gasket or bezel and bezel gasket (refer to Figures 2 and 3). Connect light head red (+12VDC) power wires and Black ground wires to the vehicle power system. **Seal or cap the end of the white wire and other unused wires to prevent inadvertent changes to the flash pattern or unexpected operation of the device.**
6. Verify proper light head operation by supplying electrical power to the system wires.
7. Push the assembled electrical connectors through the center opening and into the vehicle.
8. Install the lens gasket over the light head.
9. Place the light head onto the light gasket or bezel and bezel gasket. The bezel and all gaskets are marked with the word "Top". The light head is not, but should be installed such that the wire harness is located directly across from the hole in the vehicle body.
10. Install onto the light head the outer lens and secure to the vehicle using the four supplied #6 x 1 1/4" screws.

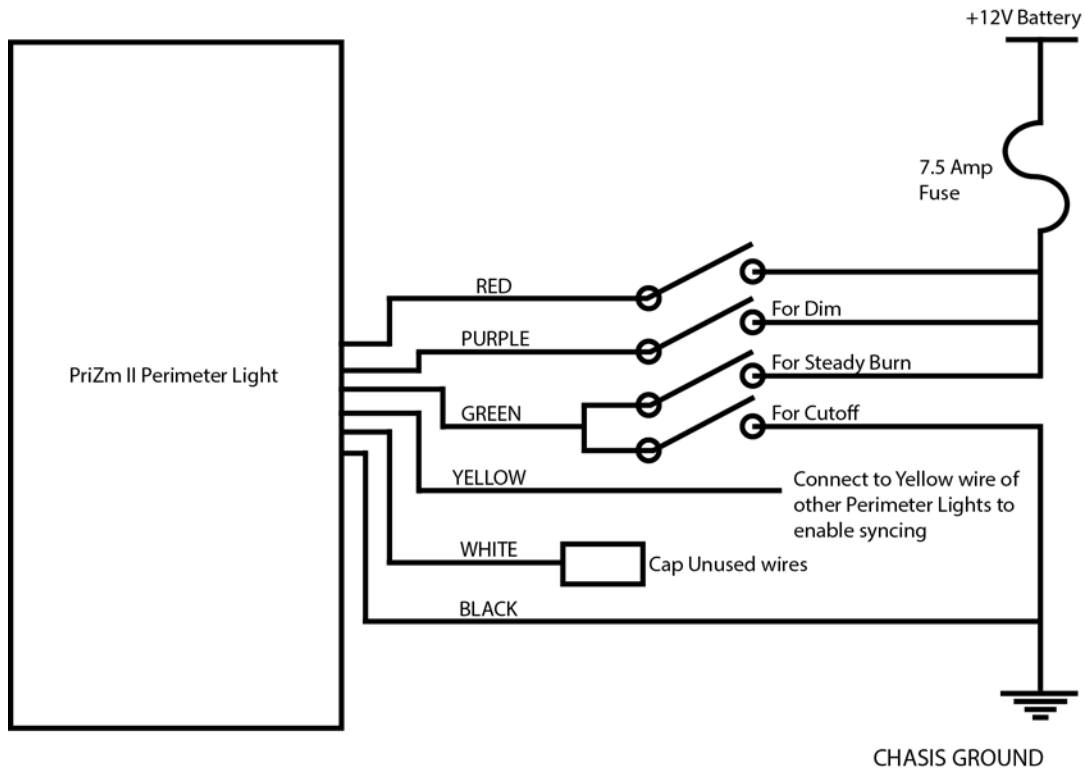


Figure 1 - Wiring Diagram

## Device Operation

**Flash Pattern Selection** - To select a different flash pattern, apply +12 VDC to the red wire and connect the black wire to the power supply ground. Touching the white wire to power supply ground for less than 1 second will change to the next pattern, for 1-2 seconds will change to the previous pattern, and over 2 seconds will reset to the default pattern (Pattern #1). During the programming process, the light head will turn certain lights on to indicate if it will go to the next, previous, or default pattern upon release of the white wire, See Table 2 for details. Cycle through the various patterns until the desired pattern is selected, Table 1 contains the available flash patterns. The unit will retain this pattern even when power is removed. For units that are flashed with an external control system such as a multiplexer or a flasher unit, the heads should be set to steady burn. It is suggested that all heads be set to the desired pattern at a workbench prior to installation.

	<b>Solid</b>	<b>Split</b>
1	CYCLE Ph1	CYCLE L/R
2	80 FPM NFPA QUAD Ph1	80 FPM NFPA QUAD L/R
3	STEADY	STEADY
4	75 FPM SINGLE Ph1	75 FPM SINGLE L/R
5	150 FPM SINGLE Ph1	150 FPM SINGLE L/R
6	250 FPM SINGLE Ph1	250 FPM SINGLE L/R
7	75 FPM DOUBLE Ph1	75 FPM DOUBLE L/R
8	150 FPM DOUBLE Ph1	150 FPM DOUBLE L/R
9	75 FPM TRIPLE Ph1	75 FPM TRIPLE POP L/R
10	150 FPM TRIPLE Ph1	150 FPM TRIPLE L/R
11	75 FPM QUAD POP Ph1	75 FPM QUAD POP L/R
12	150 FPM QUAD POP Ph1	150 FPM QUAD POP L/R
13	70 FPM Five Ph1	70 FPM Five L/R
14	150 FPM Five Ph1	150 FPM Five L/R
15	MOD FLASH Ph1	MOD FLASH L/R
16	CYCLE Ph2	CYCLE Solid
17	80 FPM NFPA QUAD Ph2	80 FPM NFPA QUAD Solid
18	STEADY	STEADY
19	75 FPM SINGLE Ph2	75 FPM SINGLE Solid
20	150 FPM SINGLE Ph2	150 FPM SINGLE Solid
21	250 FPM SINGLE Ph2	250 FPM SINGLE Solid
22	75 FPM DOUBLE Ph2	75 FPM DOUBLE Solid
23	150 FPM DOUBLE Ph2	150 FPM DOUBLE Solid
24	75 FPM TRIPLE Ph2	75 FPM TRIPLE POP Solid
25	150 FPM TRIPLE Ph2	150 FPM TRIPLE Solid
26	75 FPM QUAD POP Ph2	75 FPM QUAD POP Solid
27	150 FPM QUAD POP Ph2	150 FPM QUAD POP Solid
28	70 FPM Five Ph2	70 FPM Five Solid
29	150 FPM Five Ph2	150 FPM Five Solid
30	MOD FLASH Ph2	MOD FLASH Solid

**Table 1 - Flash Patterns**

Light Head	Next Pattern Indication	Previous Pattern Indication	Default Pattern Indication
Solid Color (All sizes)	No lights on	All lights on	All lights flash once
Split Color (All sizes)	Right side on	Left side on	All lights flash twice

**Table 2 - Pattern Change Indication**

**Flash Pattern Syncing** - The flash patterns of multiple light heads may be synced together by simply connecting the yellow wires of all light heads to be synced. Up to 20 light heads may be synced in this fashion. All flash patterns that share the same flash rate may be synced together. For example, any 75 FPM flash pattern may be synced with any other 75 FPM flash pattern, etc. If this feature is not desired, the end of the yellow wire must be sealed or capped.

**Flash Pattern Dimming** - Flash patterns are dimmed when the purple wire is given a +12VDC signal. It is up to the installer to determine how to integrate this feature into their system. If this feature is not desired, the end of the purple wire must be sealed or capped.

**Cutoff and Steady Burn Override** - The green wire supports two different features, but only one may be used for a given light head. The green wire's default mode is Cutoff. To toggle between the two modes, connect the black and white wires to ground. Apply +12VDC to the red wire. The light head will flash once and remain off until the white wire is removed from ground. This indicates that the mode has been successfully changed.

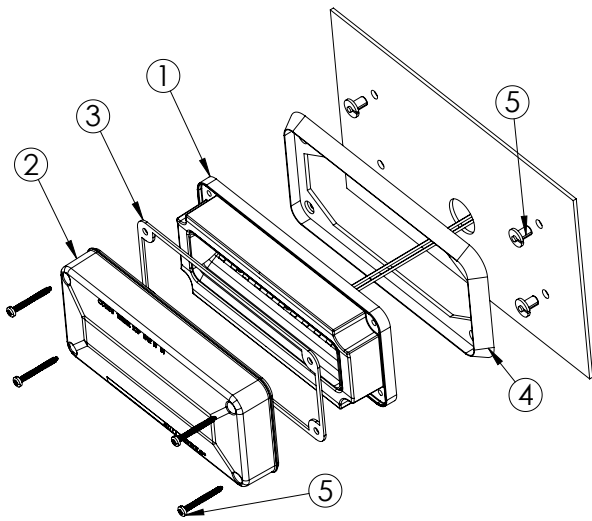
**NOTE: These two features require a different signal to activate them. Cutoff is activated by a ground signal, and Steady Burn Override is activated by a +12VDC signal.**

**Cutoff** - Allows a ground input signal to the green wire to cut off the whole light on solid-color 3x7, 4x6 and 7x9 light heads, or the right side of the light head on left/right split color light heads. This is useful for NFPA vehicles that need to cut off their white lights when blocking right-of-way. Upon removal of the ground signal, the current flash pattern will resume.

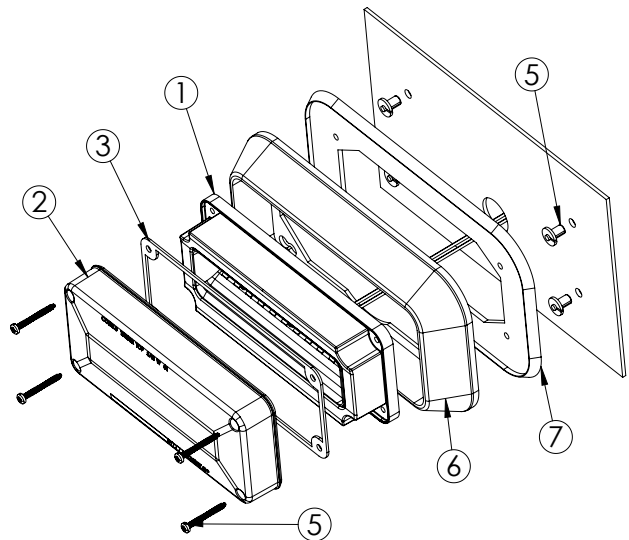
## Parts & Exploded View

Standard Unit (Figure 2)	Bezeled Unit (Figure 3)	1 Light Housing	2 Outer Lens	3 Lens Gasket	4 Light Gasket	5 Parts Kit	6 Bezel	7 Bezel Gasket
3x7 Red		T52011	T52112	T52007	T07919		T07916	T07922
3x7 Amber		T52011	T52113					
3x7 Blue		T52011	T52114					
3x7 Red, Amber, Blue or Multi-Color		T52011	T52115					
4x6 Red		T52012	T52116	T52008	T07920	T52027	T07917	T07923
4x6 Amber		T52012	T52117					
4x6 Blue		T52012	T52118					
4x6 Red, Amber, Blue or Multi-Color		T52012	T52119					
7x9 Red		T52013	T52120	T52009	T07921		T07918	T07924
7x9 Amber		T52013	T52121					
7x9 Blue		T52013	T52122					
7x9 Red, Amber, Blue or Multi-Color		T52013	T52123					

**Table 3 - Part Numbers**

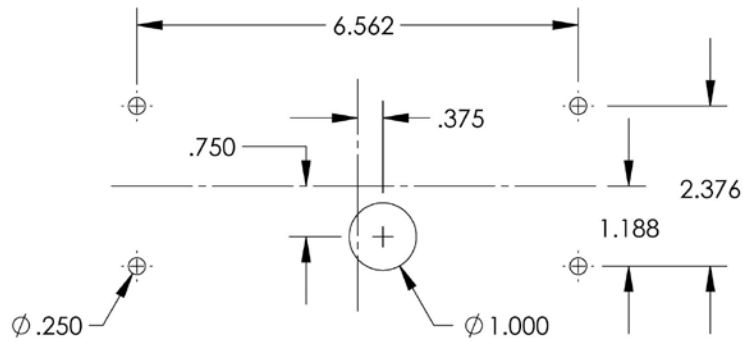


**Figure 2 - Standard Unit**

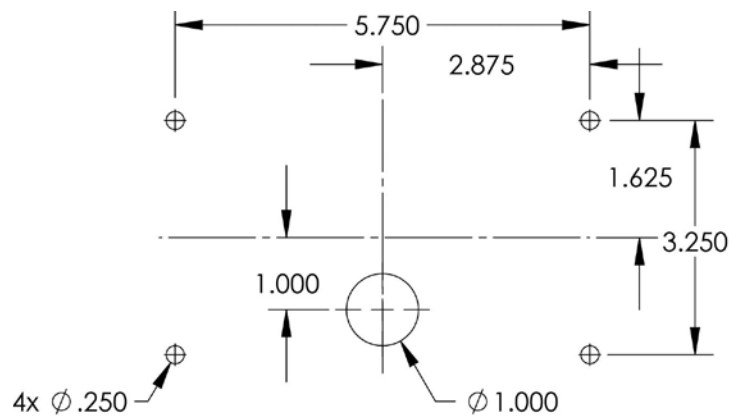


**Figure 3 - Bezeled Unit**

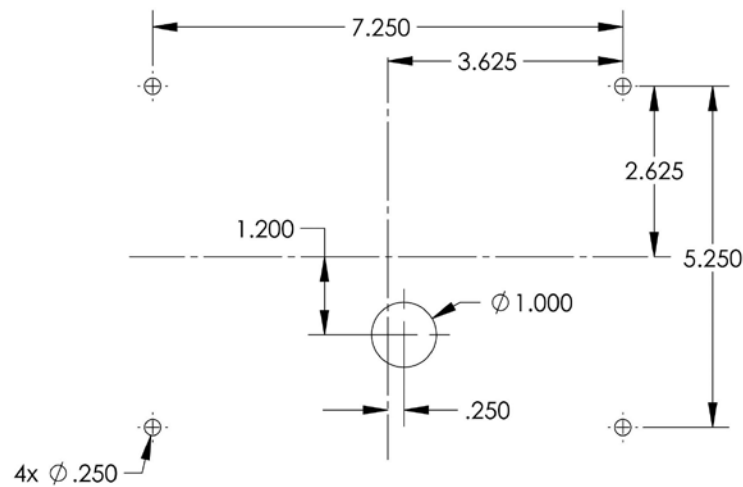
## Installation Template Dimensions



**Figure 4 - 3x7**



**Figure 5 - 4x6**



**Figure 6 - 7x9**

## Maintenance

The lens is field removable for cleaning and replacement. Remove the lens by unscrewing the four mounting screws. Use mild detergent, warm water and a soft cloth to clean both surfaces of the lens. Use of any other chemicals may void product warranty. Thoroughly dry before reinstalling.

**Manufacturer Limited Warranty Policy:**

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Sixty (60) months from the date of purchase.

**DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.**

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