



## Features/Benefits

- 16 LED Module Signal Lights
- “Dove Prism™ Lens Technology
- Easily Mounts To Roadway Base
- 12VDC Operation (Down To 9VDC)
- Visible to 1,500 Feet From Signal Head
- Rugged, Reliable, With Little Maintenance
- Snap Together, Waterproof Electrical Connection

## IN-ROADWAY WARNING LIGHTS (IRWL)

### Signal Head Series 9X

**LightGuard Systems Part Number: LGS-9X**

**Description:** The signal head contains the in-pavement LED light module.

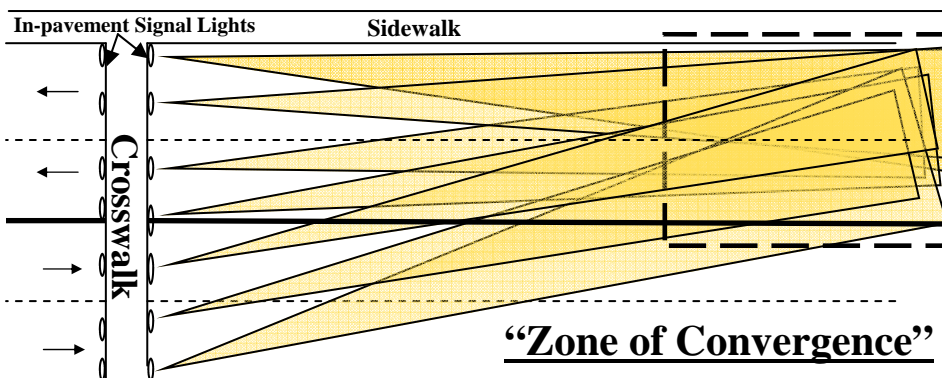
**Compliant to FHWA Standards: MUTCD Chapter 4, Section N**

#### Application Notes

LightGuard Systems’ newest technology is our System 9X LED dubbed “LightStar™.” The In-Roadway Warning Light (IRWL) signal head module meets Federal Highway Administration — Manual on Uniform Traffic Devices (FHWA MUTCD) standards. The signal head module features a watertight cable connector, solid-state electronics and sealed LED modules which isolate the electronic components from environmental moisture intrusion. The “Debris Free™”- Self Clearing Design eliminates most issues relating to lens blockage.

The signal head is designed to tightly fit into the protective base plate. It is easily connected to the electrical cable system wires with snap together, water tight connectors. The interior of the signal head unit is designed with double redundancy, isolating the solid state LED modules from roadway moisture and corrosive intrusion. The signal head unit is fastened to the base plate with stainless steel socket head ¼"-20 screws with thread locks and anti-seize compound applied to the threads in the factory.

Typical IRWL system use employs several signal heads on both side of the crosswalk using the **Enlighten1™** flash rate operating at a 50% duty cycle. The flashing light beam can easily be seen in daylight from 200 to 600 feet (or more) away and at night up to 1,500 feet (or more) away.



The **Enlighten1™** flash rate was developed in cooperation with University of California, Berkley Vision Detection Laboratory, specifically to capture and hold driver awareness.

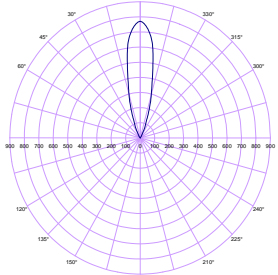
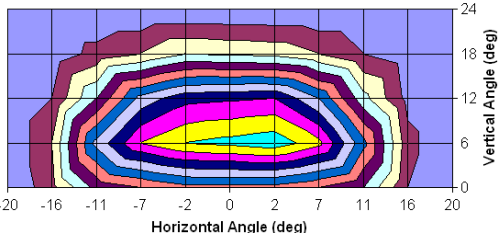
The “Zone of Convergence” refers to the area in the traffic lanes where specialized lenses direct beams of bright light from the signal head LED light modules to merge.

This “zone” is configured to give the driver adequate time to react to the presence of a pedestrian in the crosswalk. During installation the signal head modules must be properly positioned and directed towards the approaching motorist.

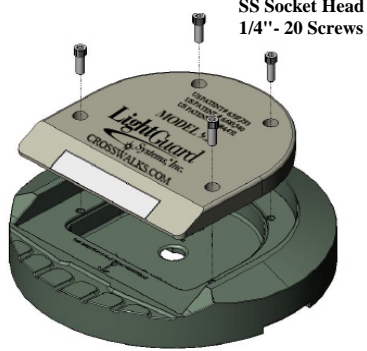
The chart on the left provides details for determining the “Zone of Convergence” based on the stopping distances on dry road conditions and rate of vehicular speed. Source: Santa Rosa, California City Police Department 1994.

Posted Speed Limit	1 Second Reaction Time	Braking Distance	Total Stopping Distance
25 mph	37 feet	53 feet	90 feet
30 mph	44 feet	81 feet	125 feet
35 mph	51 feet	110 feet	161 feet
40 mph	59 feet	143 feet	202 feet
45 mph	66 feet	184 feet	250 feet
50 mph	73 feet	227 feet	300 feet
55 mph	81 feet	271 feet	352 feet
60 mph	88 feet	323 feet	411 feet

### General Performance Specifications

Parameter	Value	Intensity Profile	Photometric Plot
Visibility	± 18° Horiz +24° Vert		<p><b>9X Photometric Data (Amber 594nm) Lumens</b></p>  <p>Maximum value @ center 815 Lumens 16 LED Lamps per light fixture</p>
Operating Temp	-20° to +80°C		
Operating Voltage	9VDC to 15VDC		
DC Current @ 12VDC	0.2 Amps		
Avg Power Dissipation	2.5 Watts		
Luminous Intensity	252,000 mcd		
Material	Polyurethane/Nylon		
Color	Black		

### Model # Reference Table

LGS P/N	Description	LED Color	Typical Mounting
LGS-9X-1	In Roadway Warning Light: Red	Red	
LGS-9X-2	In Roadway Warning Light: Bi-color	Red/Amber	
LGS-9X-3	In Roadway Warning Light: Amber	Amber	
LGS-9X-4	In Roadway Warning Light: White	White	
LGS-9AX-3	In Roadway Warning Light: Amber With Sloped Edge For System 6 Base Plate	Amber	

