



**Smart Crosswalk™
9X LED LightStar™
IRWL Signal Head Light**

LightGuard Systems Part Number: LGS-9X

Description: In-Roadway Warning Light IRWL with 16 sealed LEDs per module

Application Notes:

The 9X LED LightStar™ signal head features a watertight snap-together cable connector, a clear metal-clad acrylic dove prism lens, solid-state electronics, and sealed LED modules which isolate the electronic components from environmental moisture intrusion. The Debris-Free Self Clearing™ design of the base plate that house the signal head, helps to protect against blockage.

The 9X LED LightStar™ signal head is designed to fit tightly 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 is fastened to the base plate with stainless steel socket head 1/4"-20 screws with thread locks and factory applied anti-seize compound to the screws.

Each individual IRWL faces away from the crosswalk and points in the direction of the oncoming motorists' line of sight (NOT straight forward). The result is a slightly different, uniquely pointed angle for each IRWL. A typical IRWL system employs several signal heads on both sides of the crosswalk using a MUTCD approved flash rate. The flashing LED light beams are highly visible both day and night. Refer to our published IRWL crosswalk layout diagrams for additional visual placement details. Our recommended layout patterns comply with the US Federal Highway Administration Manual and the Uniform Traffic Control Devices (MUTCD).

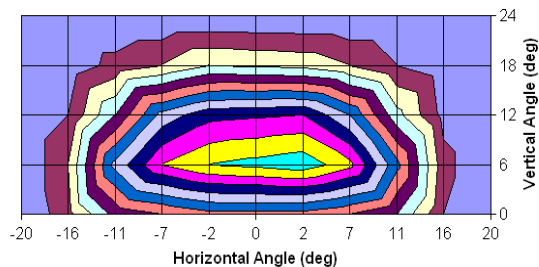
Features/Benefits:

- 16 LEDs per module
- Visible up to 1,000 feet
- Easily mounts to roadway base
- 12 VDC operation
- Rugged, with minimal maintenance
- Snap-together waterproof electrical connections
- LED-AlInGaP technology, ultra bright 100,000 hrs
- Enlighten1 flash rate



Photometric Plot

9X Photometric Data (Amber 594nm) Lumens



Maximum value @ center 815 Lumens

General Performance Specifications

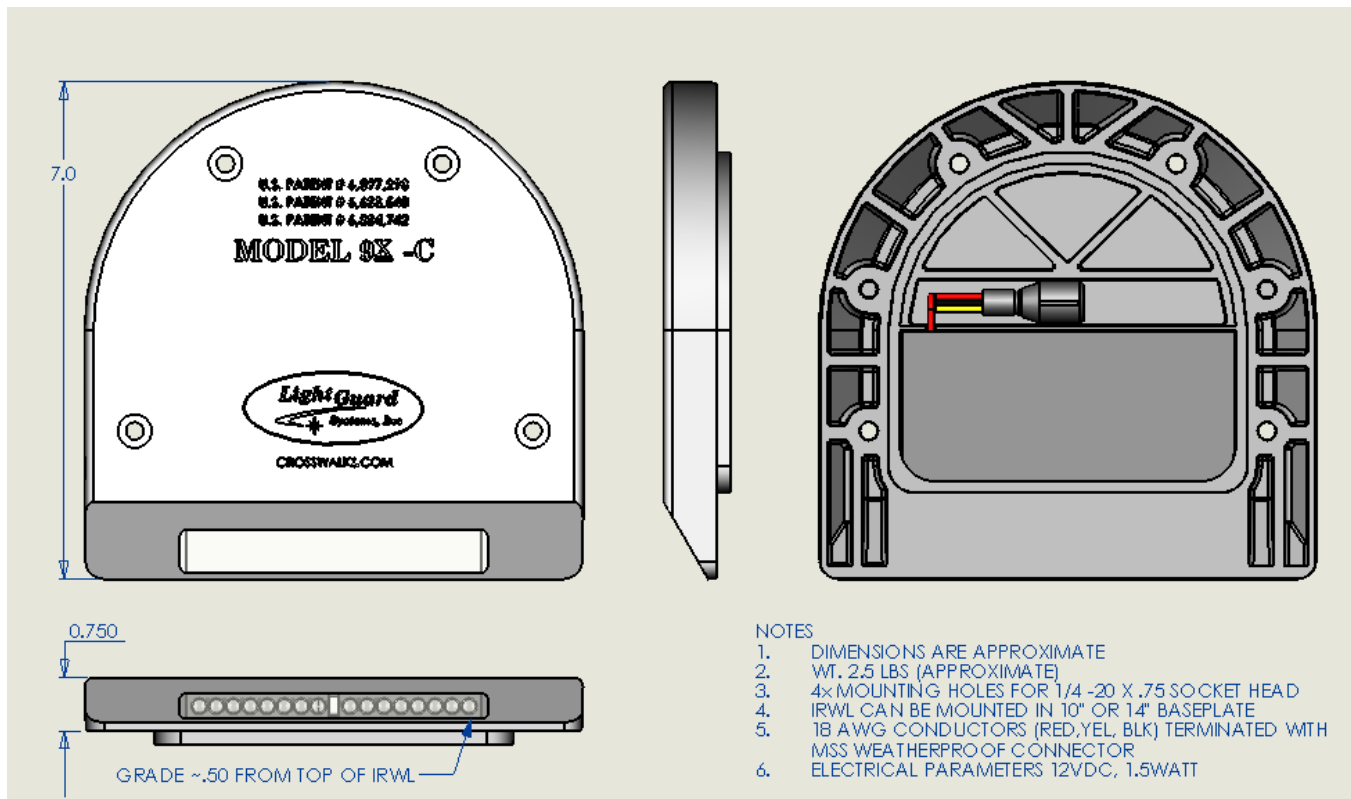
Parameter	Value
Visibility	30° viewing angle ± 15°
Operating Temp	-20° to 50°C
Operating Voltage	12VDC to 14VDC
DC Current @ 12 VDC	Less than 0.2 Amps
Avg Power Dissipation	2.5 Watts max
Luminous Intensity	252,000 mcd
Material	Polyurethane/Nylon
Color	Black

Intensity Profile



Model # Reference Table

LGS P/N	Description	Voltage
LGS-9X-1	In-Roadway Warning Light: Red	Min 9 VDC; Max 10 VDC
LGS-9X-2	In-Roadway Warning Light: Bi-color: Red/Amber	
LGS-9X-3	In-Roadway Warning Light: Amber—wavelength 590 nm—600 nm	Min 10 VDC; Max 11 VDC
LGS-9X-4	In-Roadway Warning Light: White	Min 11 VDC; Max 11.5 VDC



Usage Notes & Limitations:

LightGuard Systems In Roadway Warning Lights (IRWL) Model 9X signal heads are designed to be operated in a pulsed manner for compliance with MUTCD Chapter 4N. MUTCD states that steadily illuminated lights installed in the roadway surface are considered to be Internally Illuminated Raised Pavement Markers (IIRPM). If LightGuard Systems Model 9X signal heads are operated as IIRPM instead of IRWL, then the product warranty does not apply. Additionally, if customers choose to operate Model 9X as IIRPM, the drive voltage should be controlled/reduced so as to limit the current/power consumed (with commensurate reduced brightness) in order to mitigate the risk of higher thermally induced failure rates.

See the chart above for voltage levels to be used for the respective modules to improve longevity when operated as IIRPM.

Typical Mounting

