

# LED SIGNAL LIGHTING UNITS FOR RAILWAY SIGNALING

## LED Lighting Unit



### RDSO Specification: RDSO/SPN/153/2004

*Efftronics LED Signals are designed for use in Multi Aspect Signaling schemes for Main Line. Signals are available in 110V AC, 125mm Diameter.*

#### FEATURES:

- ❖ Interchangeable with Standard filament Color Light bulb Signals suitable for RE and Non RE Areas.
- ❖ High efficiency AlInGaP & InGaN LEDs, 4° - 10° viewing Angle with 600 meters visibility.
- ❖ Constant uniform intensity over wide input voltage range typically 82 to 150 Volts.
- ❖ Chromaticity as per BS 1376 Standard.
- ❖ High Strength hermetically sealed units made in ABS material for better immunity.
- ❖ Color coding of Shells as per Aspect color to prevent incorrect replacement of units.
- ❖ Health monitoring to indicate the status of the lit aspect.
- ❖ MIL grade connectors used for interconnection for better reliability.

#### DESIGN COMPLIANCE:

|                    |   |   |
|--------------------|---|---|
| Product Compliance | : | Research Design Standards Organization.<br>RDSO/SPN 153/2004 Rev3.0 (Draft) |
| Environmental      | : | IS: 9000 (relevant clauses)   |
| Ingress Protection | : | IP 54   |
| Chromaticity       | : | RED, GREEN Class 'C' of BS 1376; YELLOW Class 'B' of BS 1376                |
| Safety             | : | EN50129, EN50126, SIL-4   |

## Current Regulator



#### OPERATING SPECIFICATIONS:

|                       |   |                        |
|-----------------------|---|------------------------|
| Operating Temperature | : | -10°C to +70°C         |
| Operating Voltage     | : | 110V ± 25%             |
| Operating Current     | : | 140 mA+ 10% -15% (rms) |
| AC Immunity           | : | > 60V AC               |

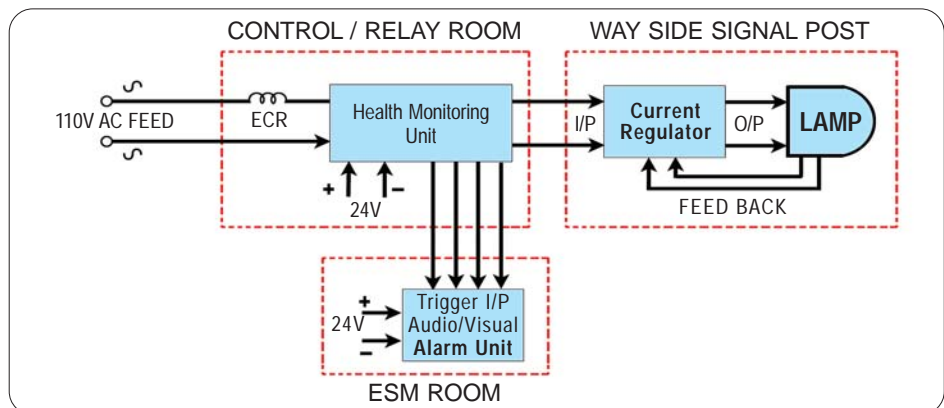
#### LAMP PROVING:

Compatible with traditional Lamp proving circuits and can also be made compatible with specific requirements.

## Health Monitoring Unit



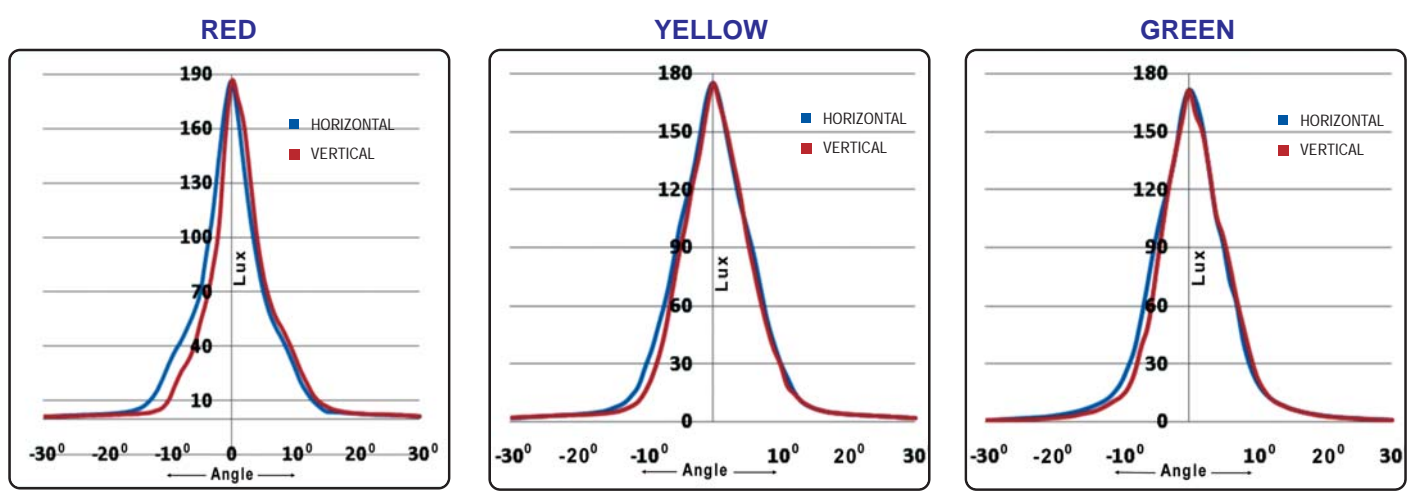
#### SYSTEM BLOCK DIAGRAM:



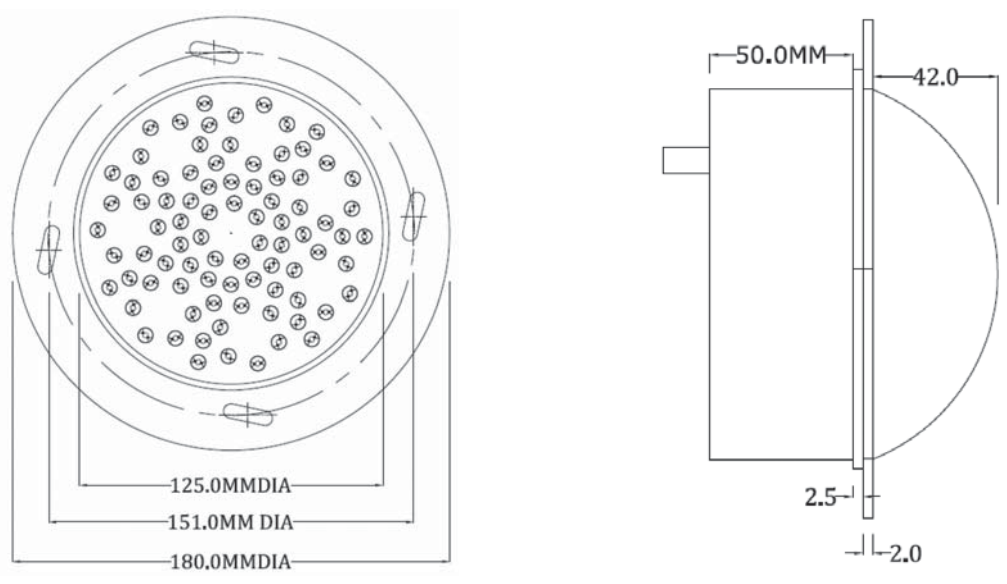
## PRODUCT SPECIFICATION

| Type | Aspect Color | Dominant Wave Length | No. of LEDs | Nominal Intensity | Intensity Range     | Viewing Angles (50% peak intensity) |
|------|--------------|----------------------|-------------|-------------------|---------------------|-------------------------------------|
| Main | RED          | 630 nm               | 84          | 150 Lux           | 135 Lux - 210 Lux   | 5° deg H/V                          |
| Main | YELLOW       | 595 nm               | 84          | 175 Lux           | 157.5 Lux - 245 Lux | 6° deg H/V                          |
| Main | GREEN        | 505 nm               | 32          | 150 Lux           | 135 Lux - 210 Lux   | 8° deg H/V                          |

## LED LIGHTING UNITS DISPERSION



## LIGHTING UNITS DIMENSIONS



**'R & D'**  
Recognised by  
DSIR  
Govt. of INDIA

Approved by  
**RDSO**  
Govt. of INDIA  
Ministry of  
Railways



**SMERA B3**  
**SMERA**  
SMERating Agency of India Ltd.

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