

Model GEO-LUMIOS

TUNNEL ENTRANCE PHOTOMETER

FEATURES

- Measurement of luminance, or brightness, created by natural light at the tunnel portals
- CIE Approved measurement of L20
- Variable viewing angle within a range of 10 to 40° (factory preset)
- Silicon photo diode, V_{λ} filtered for spectral response close to that of the average human eye
- Rugged 316 stainless steel construction with IP66 protection rating
- Heated window and enclosure
- Self-contained intelligent analyser for direct connection to host controller
- Suitable for measurement of luminance within the tunnel



BENEFITS

- Designed specifically for monitoring tunnel portals
- Rugged design to withstand extremes of weather conditions
- Simple installation and mounting
- Optional wash-wipe facility to minimise maintenance requirements
- Flexible integration options

APPLICATIONS

The GEO-LUMIOS measures the level of luminance, or brightness, created by natural light at the tunnel entrance/exit to ensure that the visual perception of drivers is maintained, both day and night, by avoiding sudden variations in lighting levels and potential "black hole effect" when entering and exiting a tunnel. The GEO-LUMIOS can also be used for the measurement of luminance within the tunnel.

OPERATION

The GEO-LUMIOS uses a specially designed highly light-sensitive photocell, filtered to provide a spectral response close to that of the average human eye, to react to changes in light levels at the entrance and exit to, as well as within, the tunnel environment. This reaction is virtually instantaneous. The light receptor measures the average luminance within a fixed viewing angle that can be set during manufacture within a range 10 to 40°. The standard instrument has an acceptance angle of 20°, (as recommended by Commission Internationale de l'Eclairage, (C.I.E.), publication 88, 1990). The luminance measurement range is 0 - 10,000cd/m², which can be scaled to suit customer requirements.

SYSTEM COMPONENTS

- GEO-LUMIOS sensor
- PC based utility software package for set-up and control of the instrument
- Optional adjustable wall or post / pole mounting brackets
- Optional wash-wipe facility

TECHNICAL SPECIFICATION

MEASUREMENT PERFORMANCE

Parameter	Comment
Measuring Principle	Luminance
Detector	Silicon photo diode, V_{λ} filtered
Viewing Angle (FWHM)	10 – 40° in 1° steps (defined at time of order) 20° (as standard)
Measurement Range	0 – 10,000 cd /m ² (user configurable)
Accuracy	Better than + / - 3 %

POWER REQUIREMENTS

Voltage	100 – 250 Vac / 50 – 60 Hz
Nominal Power Consumption	6 – 10 W (excluding wash-wipe)

INTERFACE OPTIONS

Serial Comms	ModBus RTU via RS485 (isolated) External USB
Analogue Outputs	0 / 2 / 4 – 20 mA (isolated and scalable)
Digital Relay Contacts	2 A @ 240 Vac

PHYSICAL

Ambient Operating Temperature	-30 – +70 °C
Ambient Operating Humidity	0 – 100 %
Ingress Protection	IP66 for external use
Regulatory Compliance	2004/108/EC (Electromagnetic Radiation) 2006/95/EC (Low Voltage)
Materials	316 Stainless steel (powder coated)
Dimensions	463 x 162 x 122 mm (without optional wiper) 463 x 162 x 184 mm (with optional wiper)
Weight	5.5 kg (without optional wiper)

