

TunnelTech 601

Road Tunnel Atmosphere Monitoring Systems

Luminance monitor

- Compliant with Commission Internationale de l'Éclairage, (C.I.E.), publication 88, 1990
- Measurement of tunnel entrance luminance - 0 - 6,500 cd/m²
- Calibrated using standards traceable to UK National Physical Laboratory
- Metal/glass encased Silicon photodiode, V_{λ} filtered to human spectral response
- Optional wash/wipe unit for automatic window cleaning
- Accuracy +/-1%
- Thermostatically controlled heater unit
- Acceptance angle - 20° at 200 metres
- Rugged Aluminium housing to IP66
- Other Luminance ranges available on request



TunnelTech 601 - Monitoring Luminance at tunnel portals

The TunnelTech 601 Luminance photometer monitors the average luminance of a tunnel entrance and its surroundings. In accordance with Commission Internationale de l'Éclairage, (C.I.E.), publication 88, 1990 recommendations, the photometer monitors the average luminance within a 20 degree angle over a standard range of 0 - 6,500 cd/m².

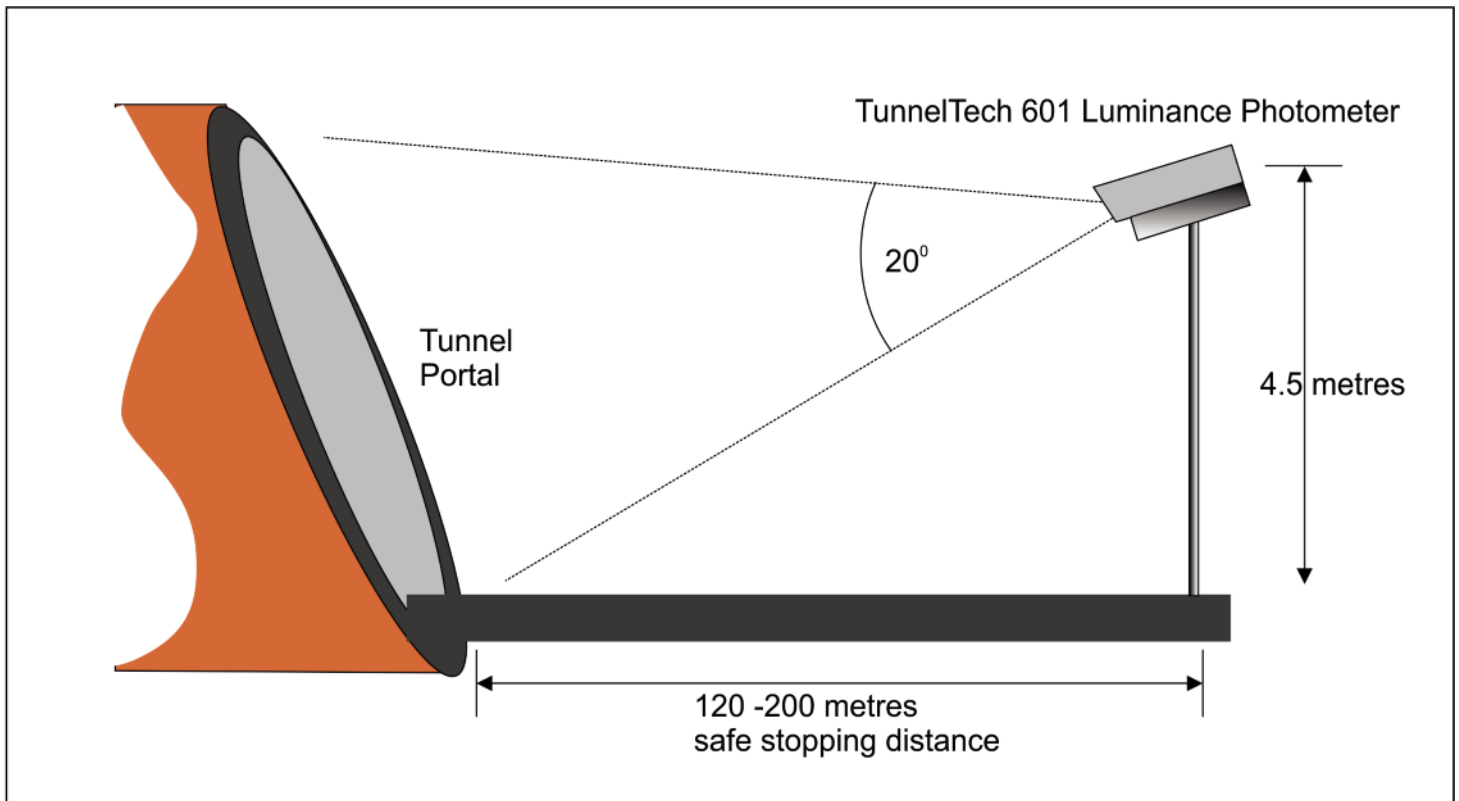
The detector is a metal/glass encased silicon diode photocell which is filtered to give a response that mimics the performance of the human eye. The detector is perfectly linear within its measuring range and has an instantaneous response to changing light levels.

According to CIE recommendations luminance should be monitored as the luminance contained within in a conical field of view, subtending an angle of 20°. It is recommended that the luminance photometer is mounted in the tunnel approach road approximately 120 - 200 metres from the portal, depending on the approach speed of the vehicles and their stopping distance.

The purpose of monitoring the luminance at the portal is to adjust the level of light intensity inside the road tunnel to the light intensity outside so that drivers do not have to adjust their eyes quickly or become affected by the “black hole” effect where they decelerate rapidly and become a hazard to other road users.

The TunnelTech 601 Luminance Photometer has a 4-20 mA output to export data to tunnel lighting control systems. The sensor is housed in a rugged aluminium enclosure which has an IP66 rating and has an internal thermostatically controlled heater. The enclosure may be fitted with an optional wash/wipe system that cleans the window automatically. It is equipped with 5 litre capacity fluid container; the customer supplies the on/off switching.

Calibration against National Physical Laboratory standards is undertaken at the factory and should not be required in the field.



TunnelTech 601 Luminance Photometer - Technical Specification

Sensor Unit

Measurements	Luminance
Units	candela/metre squared - cd/m ²
Photodetector	metal/glass encased silicon diode photocell
Measurement range (typical*)	0 - 6500
Accuracy	+/- 1% (-25°C to +75°C)
Ambient Temperature	-20°C to +50°C
Power supply	220VAC or 24VDC
Construction	Corrosion resistant epoxy coated aluminium housing sealed to IP66

Compliances

EMC	EN61326-1:2006 & EN50270:2006 directive compliant
Low Voltage	73/23/EEC directive compliant

Communications & Outputs

Analogue outputs	1 x 4-20mA current outputs as standard,
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Calibration

Calibration	Traceable to NPL Standard Luminant A
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Optional Items

Wash/wipe kit	Wiper unit, wash bottle
Mounting equipment	Pan and tilt facility

Distributor

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