Tunnel Entrance Photometer (LCAM)

General Description

The LCAM measures the level of luminance, or brightness, created by natural light at the tunnel entrance / exit to ensure that the visual perception of drivers will be maintained, both day and night, by avoiding sudden variations in lighting levels and potential “black hole effect” when entering and exiting a tunnel.

The LCAM uses a specially designed, highly light-sensitive photocell, filtered to provide a spectral response close to the average human eye, to react to changes in light levels at the entrance and exit to, as well as within, the tunnel environment.

The light receptor measures the average luminance within an acceptance angle subtending 20º, (as recommended by CIE 088:2044 and RP-22-11), over a measurement range of 0 - 10,000 cd/m^2, which can be scaled to suit customer requirements.

To ensure proper alignment of the photometer, an image is captured on request to be compared to the initial one. An alarm can be set up if the unit has moved and does not provide an effective reading.

Features

- CIE and IES Approved measurement technology
- Accurate measurement of tunnel entrance luminance
- Photometer alignment monitoring
- Variable viewing angle within a range of 10 to 40 º to compensate if the LCAM cannot be installed at a Safe Stopping Sight Distance (SSSD) from the tunnel portal.
- Designed specifically for tunnels
- Rugged 316 Stainless Steel construction
- Simple installation/operation
- RS-485 communication with NWC for remote diagnostic and configuration
- Internal heating system to prevent condensation
- Operational temperature range from - 30ºC to +50ºC (-22 to 125 F.)
- IP66 rating
- Options available
  - mounting brackets
  - wash-wipe systems

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Specifications

Measurement Performance

Parameter	Units	Min	Max	Comment
Detector				Silicon photo diode, Vλ filtered
Viewing Angle (FWHM)	Deg	10	40	1^0 steps (defined at time of order) 20^0 as standard
Measurement Range	cd/m^2	0	10,000	Can be scaled within this range
Resolution	cd/m^2		1	Display resolution
Accuracy	%	-3	+3	Better than
Damping	seconds	1	100	Default setting is 10s

Power

Voltage	Vac	100	240	50/60Hz
Power Consumption	W	6	10	Excluding washer

Interface Options

Serial Outputs				ModBus RTU via RS485 (isolated) External USB
Analogue Outputs (one)	mA	0 / 2 / 4	20	Isolated and scalable (user selected)
Digital Relay Contacts (four)	A	0	1	@240Vac (signal levels and data valid)
Network Controller Integration				Internal diagnostic available when integrated with Nyx' Network Controller. (Using RS485 Link)

Physical

Ingress Protection			IP66	
Operating Temperature	°C	-30	+50	
Storage Temperature	°C	-30	+50	
Operating Humidity	%		100	
Regulatory Compliance				2004/108/EC (Electromagnetic Radiation)/ 2006/95/EC (Low Voltage)
Materials				Stainless steel 316 (powder coated)
Dimensions	mm	463 x 162 x 122 463 x 162 x 184		Without optional wiper With optional wiper
Weight	kg		5.5 6.3	Without optional wiper With optional wiper
Warranty	Months	24		Return to base warranty. Extensions available

Note: Different options and configurations available. Please contact us at info@nyx-hemera.com.

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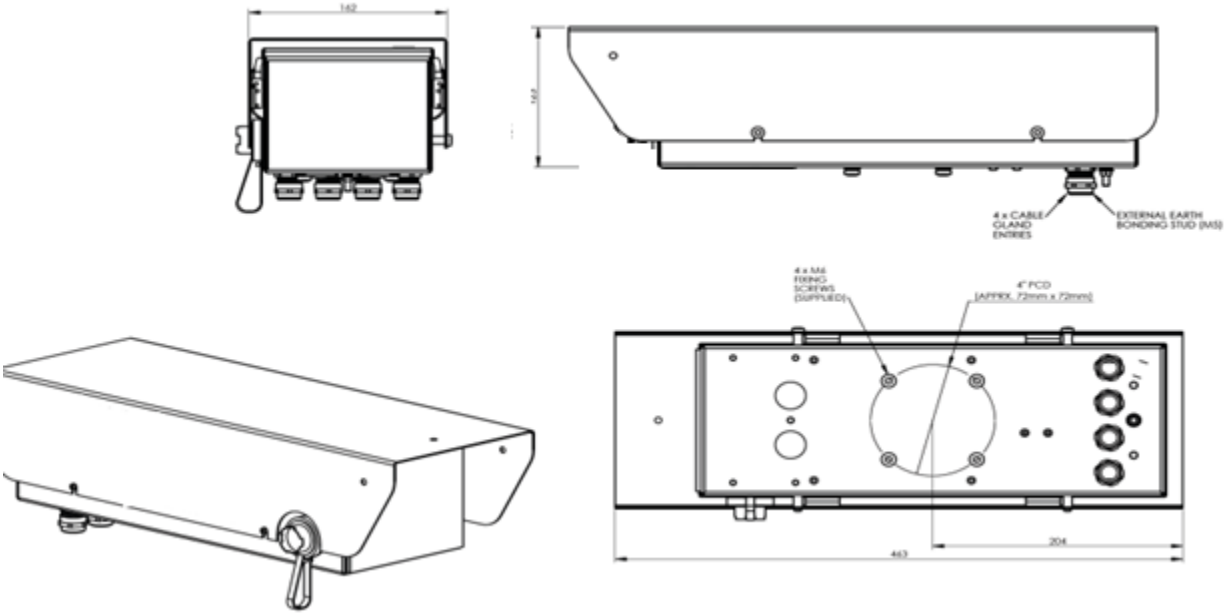
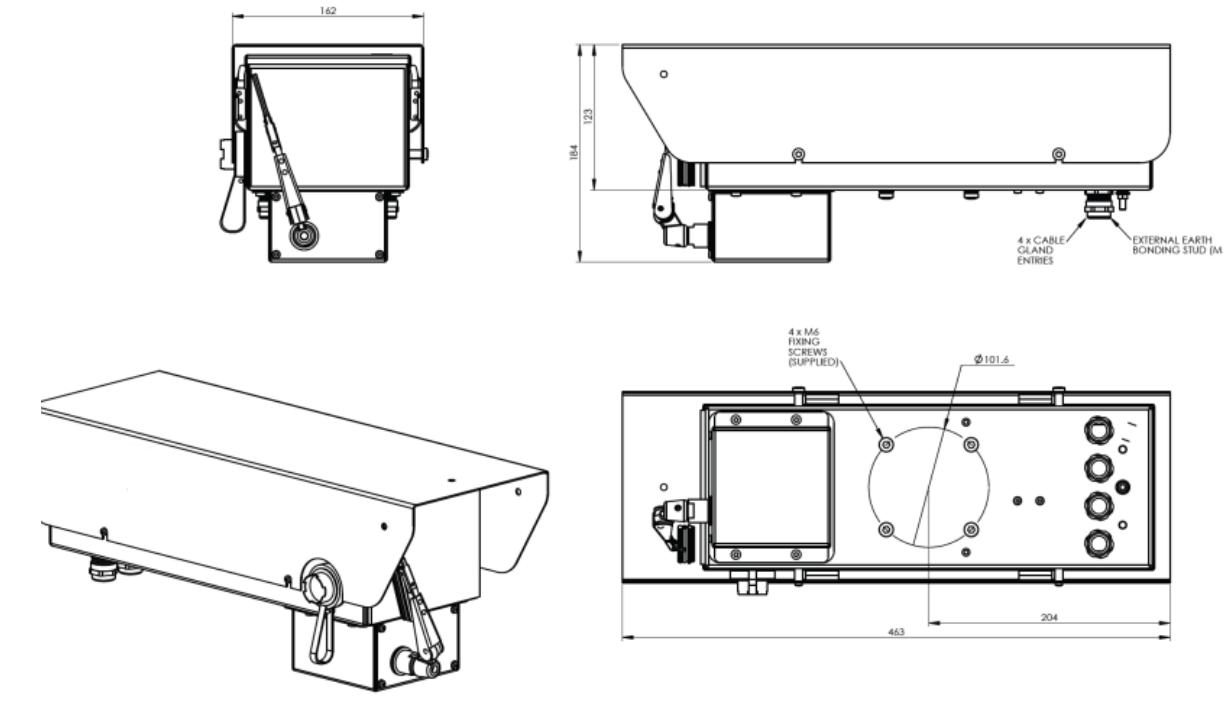
LCAM Dimension



LCAM Dimension with wiper option



Specifications subject to change without notice – LCAM V5.3 –December 2015

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