

LCAM – Luminance Photometer

General Description

The LCAM measures and communicates to the lighting control cabinet in a tunnel, underpass or any other outdoor area, the level of luminance or brightness created by natural light at the tunnel entrance / exit or on a specific site. The lighting control system in turn, adjust the luminaire light levels to ensure that the required visual perception of drivers will be maintained, both day and night, by avoiding sudden variations in lighting levels and potential “black hole and/or glaring effects” 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 for optimal performance.

Used with TLACS-EM or TLACS-U, the LCAM interfaces the system’s main controller (LCC or UDE) using either a Power Line communication, RS485, RJ45 or Fiber opti link.

The light receptor measures the average luminance over a scalable range of 0 - 10,000 cd/m² within an acceptance angle subtending 20° as recommended by CIE 88:2004 and RP-8-18.

To ensure proper alignment of the photometer, an operator can request an image, and have it compared with a valid one taken at the installation time. An alarm can then 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 to compensate if cannot be installed at a Safe Stopping Sight Distance (SSSD) from the tunnel portal.
- Specifically designed for tunnels control system
- Rugged 316 Stainless Steel construction
- Simple installation/operation
- Communication for remote diagnostic and configuration



Technical Specifications

Measurement Performance

Parameter	Units	Min	Max	Comment
Detector				Silicon photo diode, $V\lambda$ filtered
Viewing Angle (FWHM)	Deg	10	40	20° as standard; from 10 to 40° under request
Measurement Range	cd/m ²	0	10,000	Range [1, 10.000] cd/m ² scalable
Resolution	cd/m ²		1	Display resolution
Accuracy	%			Under 3%
Damping	seconds	1	100	Default setting is 10s

Electrical

Item	Description	Min	Max	Comment
Input Voltage	Vac	120	480	See product ordering information below for different versions available
Power Consumption	W	6	10	Excluding washer
	W	48	52	With wiper/washer system (optional)

Interface Options

Item	Description	Min	Max	Comment
Serial Outputs				ModBus RTU via RS485 (isolated) Ethernet (RJ-45), Fiber Optic On(request, or Power Line
Analog Outputs (one)	mA	0 / 2 / 4	20	Isolated and scalable (user selected) Maximum 500 Ohms resistance loop
Digital Relay Contacts (four)	A	0	1	@240Vac (signal levels and data valid)
Network Controller Integration				Internal diagnostic available when integrated with Nyx Hemera Network Controller. (Using RS485 Link)

Physical - Photometer

Item	Description	Min	Max	Comment
Ingress Protection			IP66	
Operating Temperature	°C	-40	+50	
Storage Temperature	°C	-40	+50	
Operating Humidity	%		100	Up to
Regulatory Compliance				2004/108/EC (Electromagnetic Radiation)/ 2006/95/EC (Low Voltage)
Materials				Stainless steel 316 (powder coated)
Warranty	Months	24		Return to base warranty. Extensions available

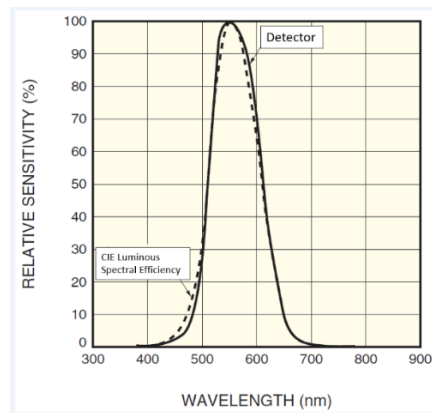


Physical – Junction Box (needed for all versions except for RS-485 / 120-240 VAC P-N)

Item	Description	Comment
Ingress Protection		IP66
Materials		Stainless steel 316

LCAM Junction box								
Junction box dimension	Interface Connection				Voltage Input		Washer System	
	RS485	RJ45	FO SM or FO MM	Power Line	120 - 240VAC L-N	240 VAC L-L, 277 L-N, 347 VAC L-N, 480 VAC P-P	With	Without
No junction box	X				X		X	
250X205X154	X					X	X	
654X500X300	X				X			X
654X500X300	X					X		X
400 x 350 x 203		X			X		X	
400 x 350 x 203		X				X	X	
654X500X300		X			X			X
654X500X300		X				X		X
400 x 350 x 203			X		X		X	
400 x 350 x 203			X			X	X	
654X500X300			X		X			X
654X500X300			X			X		X
400 x 350 x 203				X	X		X	
400 x 350 x 203				X		X	X	
654X500X300				X	X			X
654X500X300				X		X		X

Spectral Efficiency



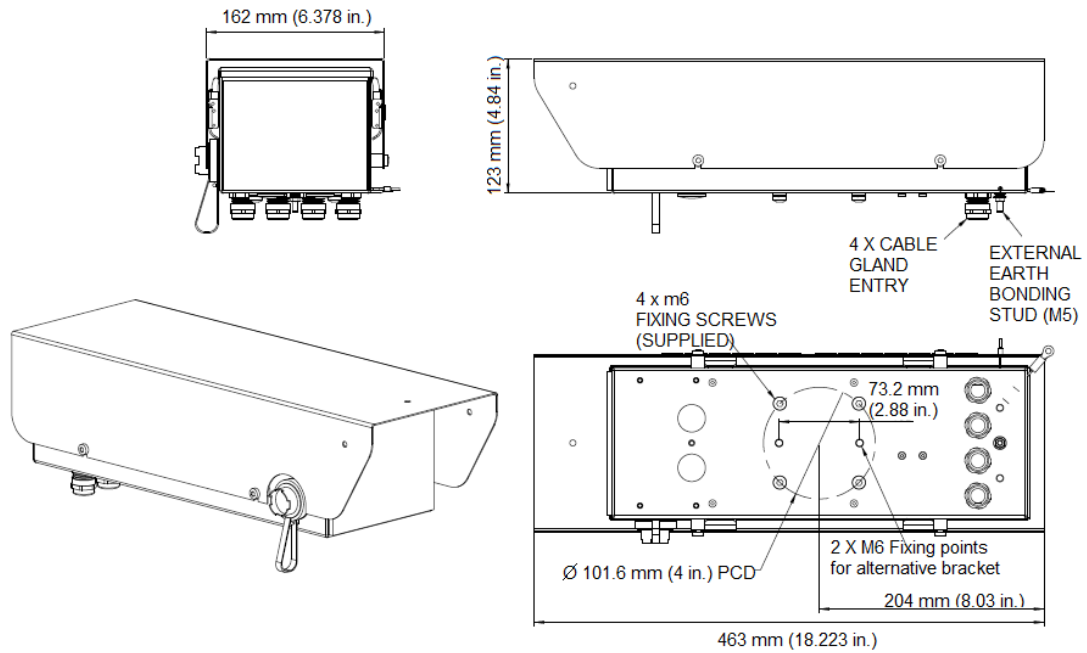
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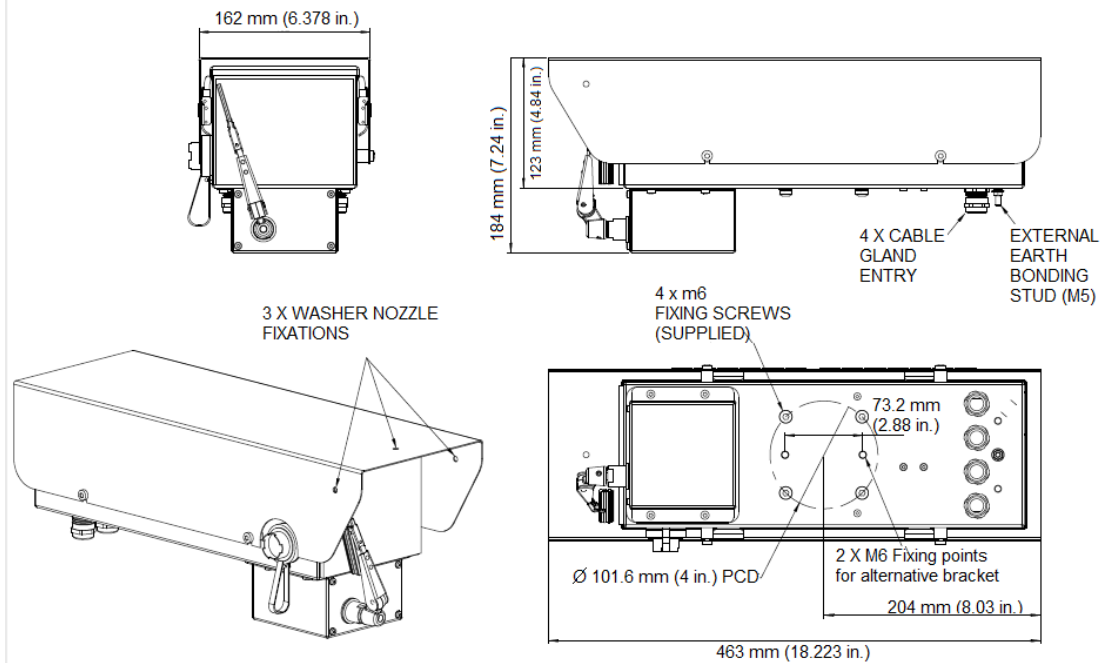
Specifications subject to change without notice – LCAM-DTS-EN-6.0 February 2021



LCAM Dimensions



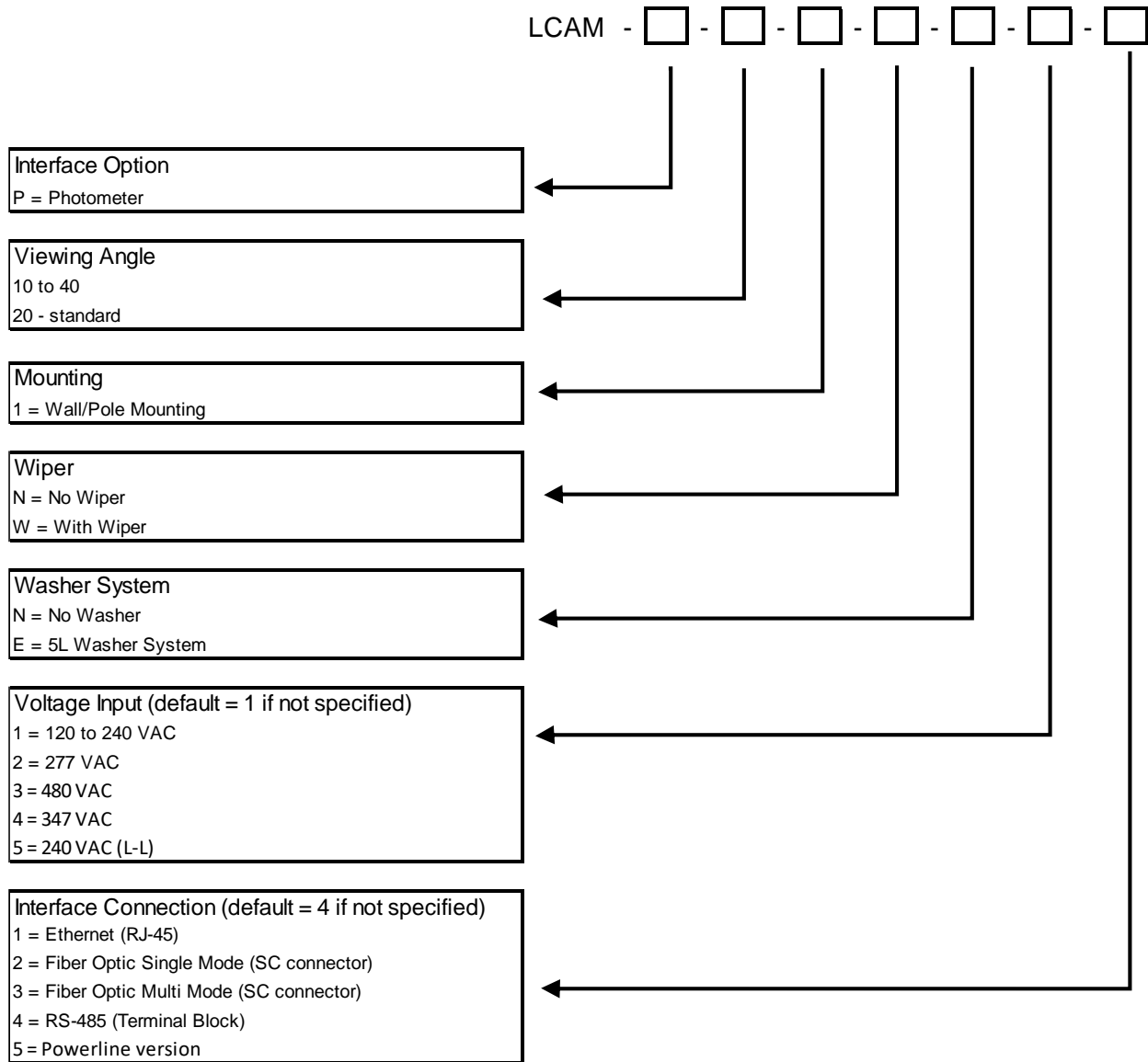
Dimensions with wiper-washer option



Product Ordering Information

LCAM product identification follows the chart diagram below. Note that some combinations are exclusive.

For any further information, please contact info@nyx-hemera.com



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

