Technical datasheet

Photolux: measurement of illuminance

A sensor and a photometric acquisition chain for measuring illuminance in all areas of activity, in the laboratory and in industrial control.



A photometric acquisition chain for illuminance measurement

Photolux combines optical detection, signal conditioning and illuminance acquisition. It can be integrated into laboratory test equipment or production control, including automotive lighting, street lighting and luminaire manufacturing applications.

Photometric head

Detection	Silicon photodiode with V(λ) photopic filter
Peak spectral sensitivity	555 nm
Active area	100 mm² (1 cm²)
Spectral mismatch relative to V(λ)	$f_1' < 3$ %
Input optics	Removable cosine corrector

Signal conditioning and acquisition

Conditioning	CECA electronics amplify the photocurrent and convert it to voltage.
Custom CECA	The CECA board can be tailored to your application.
Acquisition	National Instruments module and digital Ethernet transmission.
Acquisition frequency	50 kHz (50,000 samples per second)
Measurement modes	Continuous, flashing and pulse-width modulation (PWM)
Software	LabVIEW-based control; integration selected for your bench.
Development	SDK available in C, C++ and LabVIEW for your own application.

Automotive photometry performance

Specification	CECA Lighting	CECA Signaling
Measurement range	Up to 200 000 lx	Up to 10 000 cd
Photometric resolution	4 digits or 0.0001 lx	4 digits or 0.01 cd (at 10 m)
Display refresh rate	1 Hz	1 Hz

On automotive test benches, CECA provides two gain settings on cutoff benches and four on goniophotometers. The overlap between ranges is checked during calibration.

Illuminance or luminous intensity: what does your test require?

Specify the quantity and units required by your protocol, such as lux for illuminance or candelas for luminous intensity. Measurement distance and geometry must be defined alongside the acquisition chain to interpret the expected results.

- Acquisition and test sequences with ALPES
- Plan metrological follow-up
- Add color measurement to your bench