

WEATHER

Background Luminance Sensor

Model 5000



Overview

The Model 5000 Background Luminance Sensor measures the background sky intensity that is used with transmissometers or visibility sensors to calculate the Runway Visual Range.

The optoelectronics assembly is mounted inside a weatherproof enclosure with a glass front window and an integral hood. A high-stability silicon photodiode with a linear response of over 7 orders of magnitude measures the background sky intensity. The photodiode characteristic is compensated for by a photopic correction filter centered on 555 nm to ensure that the reading conforms to within 3% of the CIE Photopic response. RS-232 and RS-485 serial ports are available on the DB9 serial interface. Only one communication protocol is normally used at one time.

The optoelectronic assembly is temperature controlled, and features a logarithmic characteristic to ensure accurate readings through the whole range of the sensor when used with a standard analog-to-digital converter.

- Weatherproof enclosure
- Proven operation in all environments
- Viewing angle 5° – 12.5°
- Luminance range 0 – 50,000 cd/m²

Ordering Information

Part Number	Description
5000	Background Luminance Sensor

Dimensions & Weights

Dimensions	45.5 cm × 16.9 cm × 11 cm (17.97" L × 6.7" W × 4.3" H)
Weight	2.5 kg (5 lb)
Shipping Weight	4.0 kg (9 lb)
Mounting	Pole or Universal Bracket

Specifications

Parameter	Specification
Field of View	12°
Measurement Range	0 to 45,000 cd/m ²
Spectral Response	400 nm – 700 nm (within 3% of CIE Photopic response) matches human eye approximately
Accuracy	±10 cd/m ² < 100 cd/m ² , ±10% > 100 cd/m ²
Resolution	1.0 cd/m ²
Peak Wavelength	550 nm
Serial Ports	
Standard	RS-232 (no CTS/RTS)
Serial Port Parameter Settings	9600 bps, 8-N-1
Power Requirements	
Supply Voltage	12 – 14.7 VDC
Power Consumption	1200 mW
Window Heater	10 mW
Environmental	
Operating Temperature	-40 to +60°C (-40 to +145°F)
Storage Temperature	-50 to +85°C (-58 to +145°F)
Relative Humidity	5–100%, noncondensing
Enclosure	NEMA 4X, IP67
Compliance	
ICAO Compliance	ICAO Doc 9328 para 9.15

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Product specifications may be subject to change, and specifications listed here are not binding. Confirm current specifications at time of order.