

Datasheet

LuxaLight LED Engine Near Infrared 960nm Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-960-108X2835PLX

Version: 2025-08-27.2

Product description

The **LuxaLight LED Engine Near Infrared 960 nm (Protected, 24 V)** is a **semi-finished aluminum PCB module**, developed for engineers and OEMs who require deep near-infrared illumination for machine vision, scientific research, or biomedical integration. Delivered as a **light-emitting core**, it provides full flexibility in housing, optics, and thermal design.

Equipped with 108 × 2835 SMD LEDs, an **industrial silicone coating for IP64 protection**, and an integrated NTC sensor, it ensures stable, long-term performance. In combination with the MaNima Pollux Industrial System, it becomes a **complete NIR solution**, enabling pulsed operation, thermal monitoring, and advanced automation integration.

Key Specifications

Property	Value / Description
Type	LED Engine – semi-finished PCB module
LEDs	108 × 2835 SMD LEDs
PCB base	Aluminum
PCB protection	Industrial silicone coating (IP64)
Dimensions	200 × 20 × 2 mm (modular design)
Supply	24 V DC / ~30 W
Wavelength	960 nm near infrared
Irradiance (5 cm)	~314 W/m ²
PPFD (5 cm)	~1,100 µmol/m ² ·s (indicative photon flux)
Illuminance (5 cm)	Not applicable (invisible to the eye)
Beam angle	120°
Thermal monitoring	Integrated NTC sensor (5 kΩ, β = 3950)

Applications

- **Machine vision & hyperspectral imaging** – enhances imaging near the SWIR range, enabling detection of hidden or layered structures.
- **Material & moisture analysis** – highly sensitive to water absorption; ideal for monitoring moisture in food, agriculture, and packaging.
- **Pharmaceutical & packaging inspection** – supports structural integrity checks and content verification beyond visible spectrum limits.
- **Photobiomodulation & deep tissue therapy** – penetrates deeper than 860 nm, used for circulation stimulation, pain relief, and regenerative research.
- **Biometric & security systems** – applied in advanced IR cameras, vein pattern recognition, and facial ID technologies.
- **R&D & spectroscopy** – stable deep-NIR reference source for calibration, SWIR/NIR crossover studies, and lab experiments.
- *Scientific instrumentation – powerful NIR source for advanced optical test benches.*

Benefits for Engineers

- **Deep NIR output** – ~314 W/m² at 5 cm for demanding imaging and biomedical use
- **Semi-finished module** – adaptable for OEM and R&D integration
- **Pollux compatibility** – pulse/strobe support with thermal feedback
- **Design freedom** – housing, optics, and thermal setup remain customizable
- **Thermal safety** – integrated NTC ensures consistent performance
- **Scalable design** – multiple modules can be combined for larger systems
- **Industrial robustness** – IP64 protection via silicone coating

Integration with MaNima Pollux Industrial System

- Real-time NTC thermal monitoring
- Pulse/strobe operation for **optimized NIR efficiency**
- Overheating protection with stable output
- PLC/SCADA compatibility for automated systems
- Open UDP API for advanced integration

Technical specifications

General		
Brand	LuxaLight	
Application	Hyper - spectral Imaging Machine Vision	
LED type	2835	
PCB color	White	
Material	Aluminum	
Dimensions	200 × 20 × 2 mm	
Mounting	3M tape VHB4905	
LEDs per piece	108.00	
Lifetime	70000 hours	
Lighting		
Wave length	960 nm	
Beam angle	120 °	
Measurement results		
Peak wavelength (Object size: 1 piece)	963 nm	
Peak irradiance (Object size: 1 piece)		24V
	5cm	6.3 W/sqm
	10cm	2.35 W/sqm
	15cm	1.21 W/sqm
	20cm	0.75 W/sqm
	25cm	0.5 W/sqm
	30cm	0.37 W/sqm
Total irradiance (Object size: 1 piece)		24V
	5cm	314 W/sqm
	10cm	117.3 W/sqm
	15cm	60.46 W/sqm
	20cm	37.4 W/sqm
	25cm	25.03 W/sqm
	30cm	18.88 W/sqm
• By combining Pulse Mode with Real-Time Monitoring, the efficiency of LED systems can be increased, resulting in higher output. • We have the expertise and equipment to perform measurements tailored to the specific requirements of the application.		
Electronics		
Working voltage	24V	
Current per piece	1.25 A / piece	
Power consumption per piece	30.00 W / piece	
PCB material	Aluminium	

Pinout

Symbol	Function
V+	V+
GND	Ground
NTC	NTC sensor
NTC_GND	NTC ground

NTC parameters	Resistance: 5000 Ohm Beta value: 3950
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Environmental

Operating temperature	-20 ~ +60 °C
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Storage temperature	-40 ~ +80 °C
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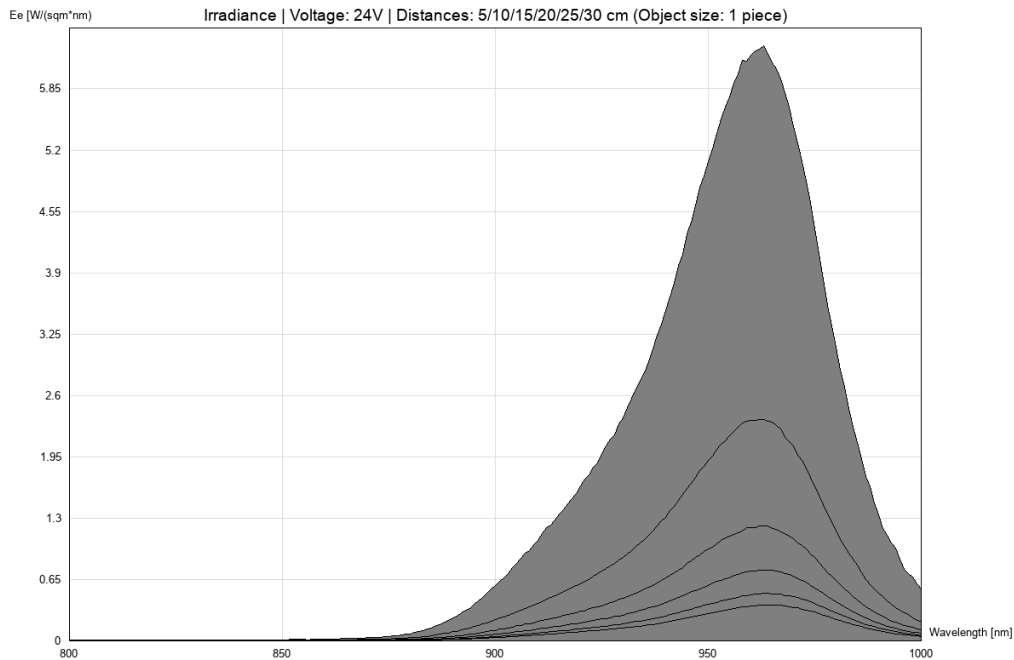
IP class	IP 64
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Directives - standards - certificates

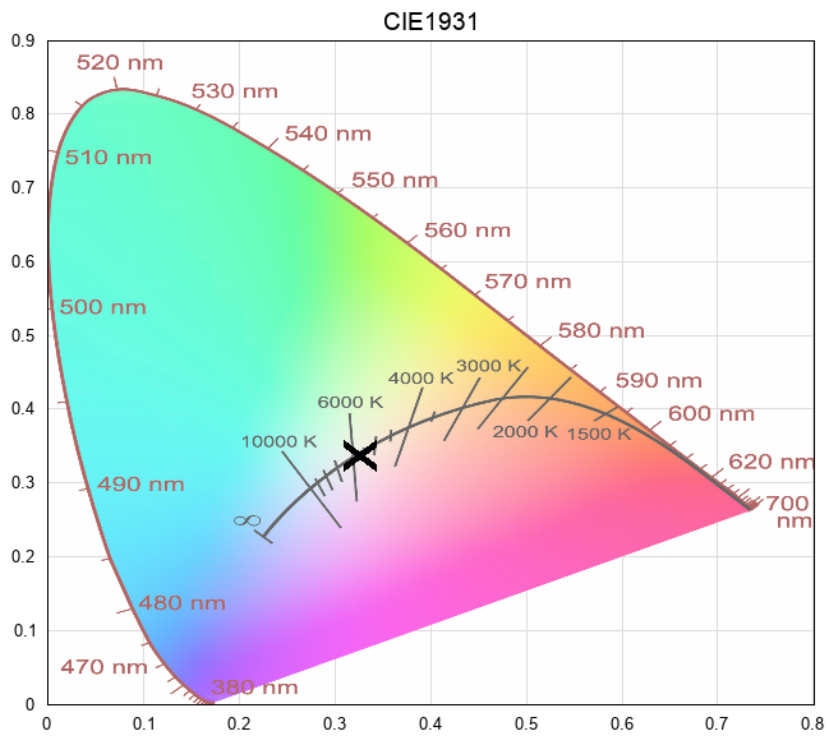
Directives	RoHS CE
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Measurement results

irradiance - 800-nir (24V)



cie1931



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