

Datasheet

LuxaLight LED Engine Near Infrared 860nm Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-860-108X2835PLX

Version: 2025-08-27.3

Product description

The **LuxaLight LED Engine Near Infrared 860 nm (Protected, 24 V)** is a **semi-finished aluminum PCB module**, developed for engineers and OEMs who need a powerful near-infrared source for integration into custom fixtures, optical systems, or R&D environments. It provides only the **light-emitting core**, ensuring maximum design freedom for housings, optics, and thermal concepts.

With 108 × 2835 SMD LEDs, an **industrial silicone coating for IP64 protection**, and an integrated NTC sensor, the module guarantees stable and durable performance. When combined with the MaNima Pollux Industrial System, it becomes a **complete and efficient NIR solution**, enabling advanced pulsing, thermal regulation, and integration into automation platforms.

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	860 nm near infrared
Irradiance (5 cm)	~345 W/m ²
PPFD (5 cm)	~1,200 µmol/m ² ·s (indicative, NIR photon flux)
Illuminance (5 cm)	Not applicable (invisible spectrum)
Beam angle	120°
Thermal monitoring	Integrated NTC sensor (5 kΩ, β = 3950)

Applications

- **Machine vision & inspection** – improves imaging of reflective, transparent, or coated surfaces where visible light fails.
- **Hyperspectral & NIR imaging** – provides uniform near-infrared illumination for spectral cameras in industrial and research applications.
- **Material testing & quality control** – penetrates coatings and packaging to reveal hidden defects, moisture, or internal structures.
- **Photobiomodulation (NIR therapy)** – supports deep tissue penetration for pain relief, regeneration, and wellness devices.
- **Biomedical devices** – integration into vein finders, oximeters, and biosensors operating in the NIR spectrum.
- **Agriculture & food processing** – enables non-destructive analysis of crop health, water content, and product quality.
- *R&D & sensor calibration – stable NIR reference source for laboratory setups, spectrometer calibration, and optical sensor development.*

Benefits for Engineers

- **Semi-finished module** – designed for OEM and R&D integration
- **Perfect Pollux companion** – becomes a fully controllable NIR system with MaNima Pollux
- **Strong NIR output** – ~345 W/m² at 5 cm for demanding applications
- **Design freedom** – housing, optics, and thermal design remain customizable
- **Thermal reliability** – integrated NTC ensures consistent operation and long lifetime
- **Modular scalability** – multiple engines can be combined as required
- **Industrial robustness** – IP64 protection via silicone coating

Integration with MaNima Pollux Industrial System

- Real-time NTC thermal monitoring
- Pulse/strobe modes for **enhanced NIR intensity and efficiency**
- Prevents overheating while maximizing output
- Compatible with PLC/SCADA automation systems
- Open UDP-based API for advanced integration and customization

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														
Warranty	5 years														
Warranty	70000														
LEDs per piece	108.00														
Lighting															
Wave length	860 nm														
Beam angle	120 °														
Measurement results															
Peak wavelength (Object size: 1 piece)	852 nm														
Peak irradiance (Object size: 1 piece)	<table> <tr> <th></th><th>24V</th></tr> <tr> <td>5cm</td><td>8.03 W/sqm</td></tr> <tr> <td>10cm</td><td>3.3 W/sqm</td></tr> <tr> <td>15cm</td><td>1.66 W/sqm</td></tr> <tr> <td>20cm</td><td>1.01 W/sqm</td></tr> <tr> <td>25cm</td><td>0.68 W/sqm</td></tr> <tr> <td>30cm</td><td>0.5 W/sqm</td></tr> </table>		24V	5cm	8.03 W/sqm	10cm	3.3 W/sqm	15cm	1.66 W/sqm	20cm	1.01 W/sqm	25cm	0.68 W/sqm	30cm	0.5 W/sqm
	24V														
5cm	8.03 W/sqm														
10cm	3.3 W/sqm														
15cm	1.66 W/sqm														
20cm	1.01 W/sqm														
25cm	0.68 W/sqm														
30cm	0.5 W/sqm														
Total irradiance (Object size: 1 piece)	<table> <tr> <th></th><th>24V</th></tr> <tr> <td>5cm</td><td>345.3 W/sqm</td></tr> <tr> <td>10cm</td><td>139 W/sqm</td></tr> <tr> <td>15cm</td><td>70.86 W/sqm</td></tr> <tr> <td>20cm</td><td>43.26 W/sqm</td></tr> <tr> <td>25cm</td><td>28.72 W/sqm</td></tr> <tr> <td>30cm</td><td>21.44 W/sqm</td></tr> </table>		24V	5cm	345.3 W/sqm	10cm	139 W/sqm	15cm	70.86 W/sqm	20cm	43.26 W/sqm	25cm	28.72 W/sqm	30cm	21.44 W/sqm
	24V														
5cm	345.3 W/sqm														
10cm	139 W/sqm														
15cm	70.86 W/sqm														
20cm	43.26 W/sqm														
25cm	28.72 W/sqm														
30cm	21.44 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
----------------	--

Environmental

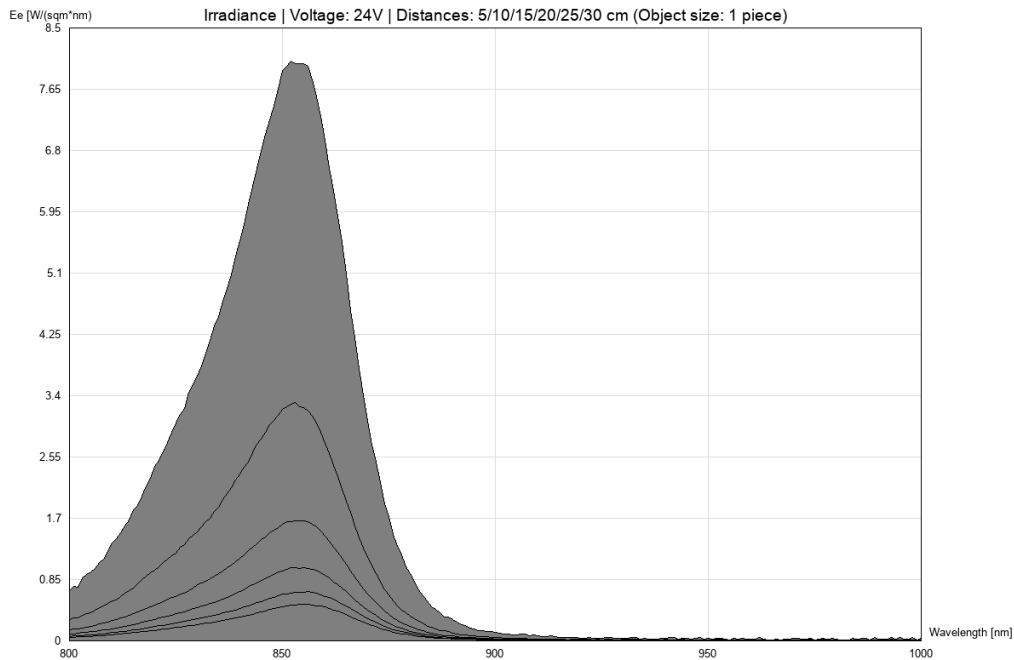
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

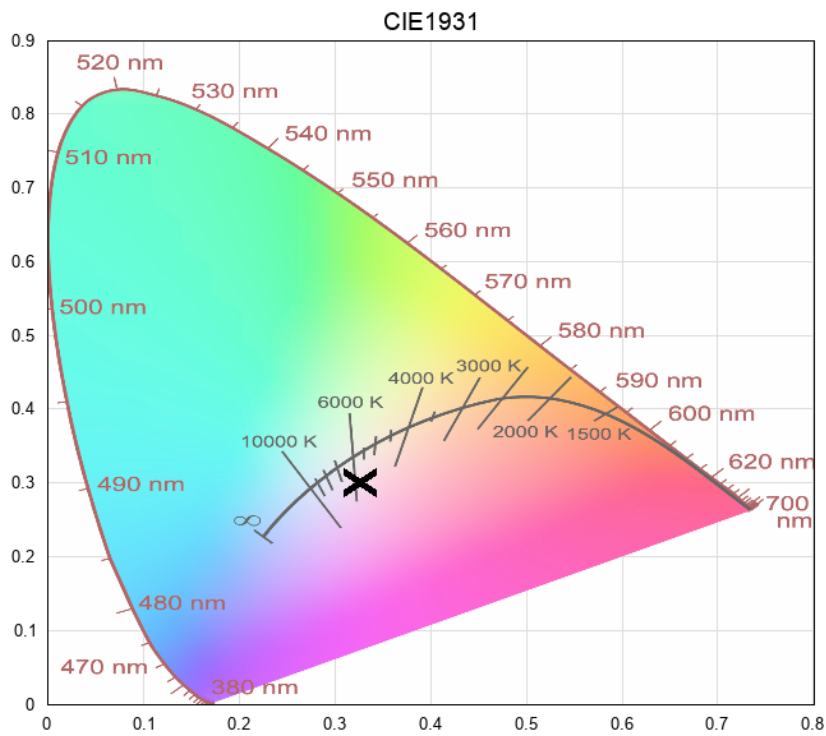
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - 800-nir (24V)



cie1931



While LuxaLight has made every reasonable effort to ensure the accuracy of the information in this brochure, LuxaLight does not guarantee that it is error - free, nor does LuxaLight make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. LuxaLight reserves the right to make any adjustments to the information contained herein at any time without notice. LuxaLight expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalogue are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult LuxaLight for the latest dimensions and design specifications.