

Datasheet

LuxaLight LED Engine Deep Red 660nm Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-660-108X2835PLX

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Product description

The **LuxaLight LED Engine Deep Red 660 nm (Protected, 24 V)** is a **semi-finished aluminum PCB module**, tailored for engineers and OEMs who need a powerful deep-red light core for integration into custom fixtures, optical systems, or R&D configurations. It delivers just the **light-emitting core**, giving engineers full flexibility in enclosure, optics, and thermal design.

With 108 × 2835 SMD LEDs, an **industrial silicone coating delivering IP64 protection**, and an integrated NTC temperature sensor, the module ensures stable, reliable performance. Paired with the MaNima Pollux System, it becomes a **complete, high-efficiency deep-red solution**, with enhanced performance through pulsing and thermal management.

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 (provides IP64 rating)
Dimensions	200 × 20 × 2 mm (modular design)
Supply	24 V DC / ~30 W
Wavelength	660 nm deep red (peak ~662 nm)
Irradiance (5 cm)	~461 W/m ²
PPFD (5 cm)	~2,485 µmol/m ² ·s
Illuminance (5 cm)	~26,980 lx
Beam angle	120°
Thermal monitoring	Integrated NTC sensor (5 kΩ, β = 3950)

Applications

- **Horticultural lighting** – drives photosynthesis and plant metabolism; promotes flowering and fruit production through phytochrome activation.
- **Plant research** – used in controlled environments for studying growth, yield optimization, and spectral effects.
- **Photobiomodulation & therapy** – supports wound healing, tissue regeneration, pain relief, and anti-inflammatory treatments.
- **Industrial inspection** – enhances visibility of pigments, inks, coatings, and printed codes under machine vision.
- **Barcode scanning & signaling** – stable deep-red source for automation and scanning technologies.
- **R&D & spectroscopy** – reference light for optical sensor calibration, scientific research, and multispectral imaging.

Also applicable in R&D and specialized lighting setups.

Benefits for Engineers

- **Semi-finished module** – ideal for OEM and R&D integration
- **Perfect Pollux companion** – becomes a fully controllable deep-red system with Pollux
- **Improved efficiency with Pollux** – pulsing and thermal management maximize performance
- **Design freedom** – integrate into custom housings, optics, and thermal setups
- **High optical power** – ~461 W/m², ~2,485 µmol/m²·s, ~26,980 lx at 5 cm delivers strong output
- **Modular scalability** – multiple engines can be combined for larger systems
- **Thermal safety** – NTC ensures consistent performance and long service life
- **Industrial robustness** – IP64 protection via silicone coating

Integration with MaNima Pollux Industrial System

- Real-time NTC temperature monitoring
- Pulse/strobe modes for **higher peak intensities and improved efficiency**
- Prevents overheating while maximizing output
- Supplies data to PLC/SCADA automation systems
- Open UDP-based API for advanced integration and customization

Technical specifications

General		
Brand	LuxaLight	
Application	Barcode Scanning 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	660 nm	
Beam angle	120 °	
LB waarde	L80B50	
Measurement results		
Illuminance (Lux) (Object size: 1 piece)		24V
	5cm	26980 lx
	10cm	10420 lx
	15cm	5294 lx
	20cm	3242 lx
	25cm	2179 lx
	30cm	1653 lx
Total PPFD umol/m2 (PAR 400-700nm) (Object size: 1 piece)		24V
	5cm	2485.19 umol/m2
	10cm	928.21 umol/m2
	15cm	473.5 umol/m2
	20cm	295.02 umol/m2
	25cm	198.7 umol/m2
	30cm	150.55 umol/m2
Peak wavelength (Object size: 1 piece)	662 nm	
Peak irradiance (Object size: 1 piece)		24V
	5cm	18.64 W/sqm
	10cm	6.93 W/sqm
	15cm	3.53 W/sqm
	20cm	2.15 W/sqm
	25cm	1.47 W/sqm
	30cm	1.1 W/sqm

Total irradiance

(Object size: 1 piece)

	24V
5cm	461.3 W/sqm
10cm	179.8 W/sqm
15cm	91.92 W/sqm
20cm	56.97 W/sqm
25cm	37.89 W/sqm
30cm	28.89 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

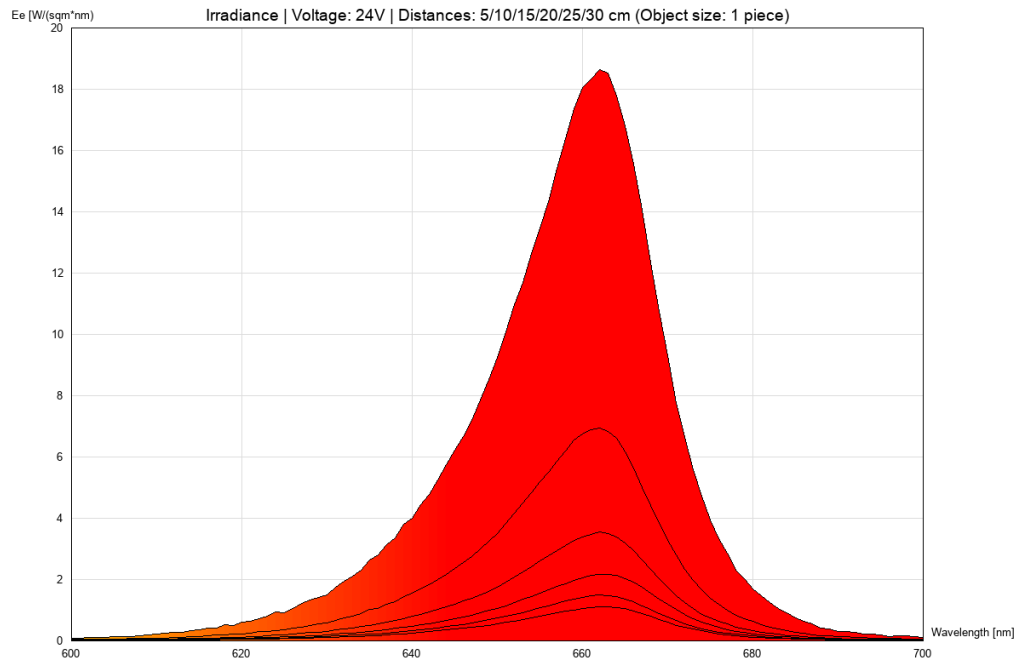
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

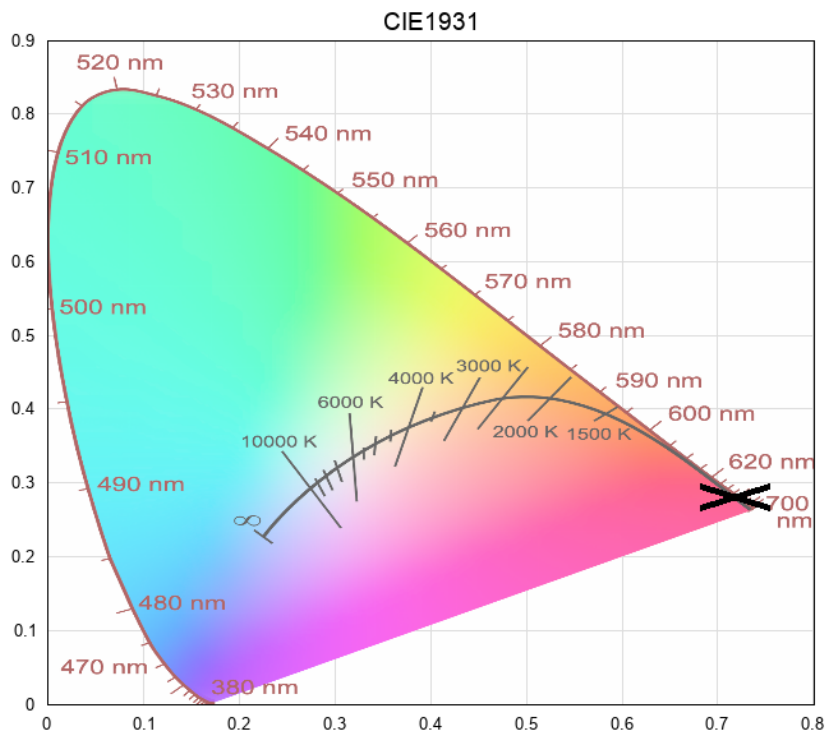
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - 600-700-red (24V)



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