Datasheet

LuxaLight LED Engine Neutral White 4800K Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-4800-108X2835PLX

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LuxaLight B.V.
Hastelweg 260B
5652 CN Eindhoven
Nederland

KvK-nummer: 57580561
BTW-nummer: NL852642209B01
IBAN: NL87 INGB 0007 8159 75
BIC/SWIFT code: INGBNL2A

Email: info@luxalight.eu
Website: www.luxalight.eu
Tel.: +31 (0)40 - 202 49 04

Product description

The **LuxaLight LED Engine Neutral White 4800 K (Protected, 24 V)** is a **semi-finished aluminum PCB module**, designed for engineers and OEMs requiring a high-quality light source to integrate into their own housings, optical systems, or R&D configurations. As a component, it provides only the **light-emitting core**, offering full flexibility in thermal design, optics, and form factor.

Equipped with 108 × 2835 SMD LEDs, an **industrial silicone coating providing IP64 protection**, and an integrated NTC temperature sensor, the module ensures stable performance and long-term durability. When paired with the MaNima Pollux Industrial System, this engine becomes a **complete, high-efficiency lighting solution**, achieving improved efficiency through pulsing and advanced thermal control.

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
Color temperature	Neutral White ~4800 K (measured ~4920 K)
CRI / Binning	CRI ~93; 3-step SDCM
Beam angle	120°
Thermal monitoring	Integrated NTC sensor (5 kΩ, β = 3950)

Applications

- **Machine vision & quality inspection** – neutral white light with a slightly cool tone highlights fine details, scratches, and surface variations.
- **Packaging & print inspection** – consistent lighting improves evaluation of colors, labels, and printed marks.
- **Food inspection (freshness & hygiene)** – 4800 K emphasizes natural colors while providing a clean, hygienic appearance, ideal for meat, fish, fruit, and vegetables.
- **Cleanrooms & laboratories** – stable and uniform illumination for reliable scientific and industrial analysis.
- **Hyperspectral & line-scan imaging** – reference-quality white light for spectral cameras and sensor systems.
- **Prototyping & OEM integration** – flexible building block for custom fixture development and experimental setups.

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 controlled solution when combined with MaNima Pollux
- **Improved efficiency with Pollux** – pulsing and thermal control maximize performance
- **Design freedom** – adapt housing, optics, and cooling as needed
- **High light quality** – consistent color output with CRI ~93 and 3 SDCM
- **Modular scalability** – multiple engines can be combined as required
- **Thermal safety** – NTC ensures reliable performance
- **Industrial robustness** – IP64 protection via silicone coating

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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 performance
- Provides data to PLC/SCADA automation systems
- Open UDP-based API for system customization and integration

Technical specifications

General	
Brand	LuxaLight
Application	Food Inspection (Agro-Food) Hyper - spectral Imaging Line Scan Cameras Machine Vision
LED type	2835
PCB color	White
Material	Aluminum
Dimensions	200 × 20 × 2 mm
Mounting	3M tape VHB4905
Warranty	5 years
LEDs per piece	108.00
Lifetime	70000 hours

Lighting	
Color temperature	4800 ~ 5000 K
Luminous Flux	3720 lm
BIN	3 SDCM
Beam angle	120 °
LB waarde	L80B50

Measurement results	
CRI (Object size: 1 piece)	93
CCT (Object size: 1 piece)	4920 K

Illuminance (Lux)
(Object size: 1 piece)

	24V
5cm	187100 lx
10cm	74750 lx
15cm	38480 lx
20cm	23880 lx
25cm	16160 lx
30cm	12170 lx

Total PPFD umol/m2 (PAR 400-700nm)
(Object size: 1 piece)

	24V
5cm	2918.42 umol/m2
10cm	1167.06 umol/m2
15cm	600.71 umol/m2
20cm	373.35 umol/m2
25cm	252.44 umol/m2
30cm	189.88 umol/m2

Peak wavelength (Object size: 1 piece)	454 nm

Peak irradiance
(Object size: 1 piece)

	24V
5cm	4.42 W/sqm
10cm	1.77 W/sqm
15cm	0.92 W/sqm
20cm	0.58 W/sqm
25cm	0.39 W/sqm
30cm	0.29 W/sqm

Total irradiance
(Object size: 1 piece)

	24V
5cm	662.2 W/sqm
10cm	264.2 W/sqm
15cm	136 W/sqm
20cm	84.51 W/sqm
25cm	57.06 W/sqm
30cm	42.86 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

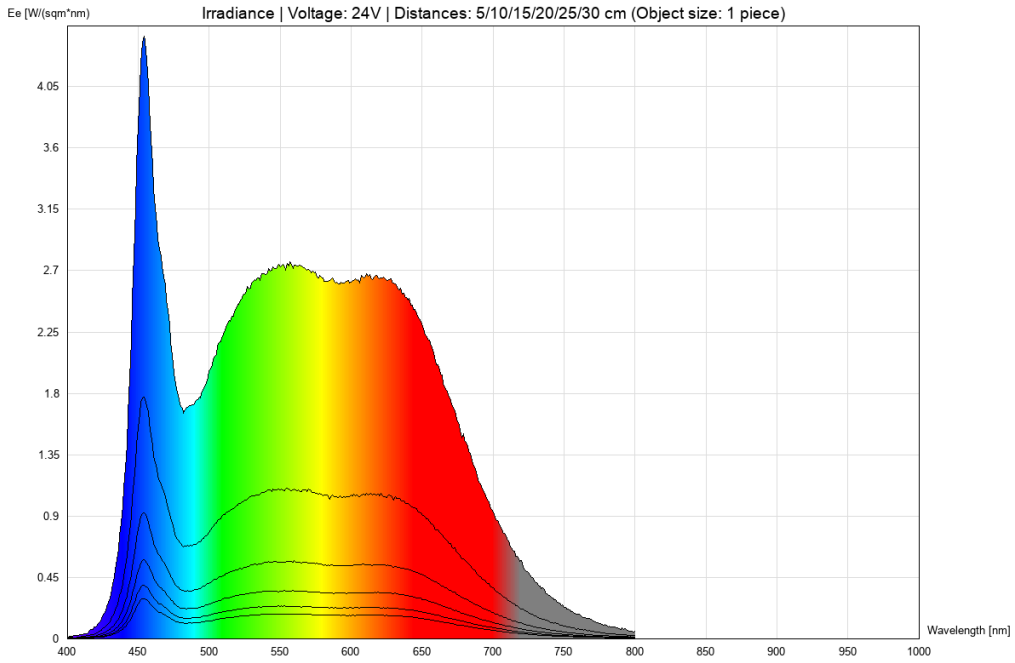
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - full-spectrum (24V)



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