

Datasheet

LuxaLight LED Engine Neutral White 4200K Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-4200K-108X2835PLX

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Product description

The **LuxaLight LED Engine Neutral White 4200 K (Protected, 24 V)** is a **semi-finished aluminum PCB module**, designed for engineers and OEMs who require a reliable light source for integration into custom fixtures, optical systems, or R&D setups. Unlike a complete luminaire, this LED engine delivers only the **core light source**, offering full freedom in housing, optics, and thermal management.

With 108 × 2835 SMD LEDs, an **industrial silicone coating providing IP64 protection**, and an integrated NTC sensor, the module ensures stable light output and long service life in demanding environments. As a semi-finished product, the engine becomes a **complete and high-performance solution when combined with the MaNima Pollux Industrial System**, enabling higher 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 4200–4400 K (CRI ≥ 95)
Beam angle	120°
Thermal monitoring	Integrated NTC sensor (5 kΩ, β = 3950)

Applications

- **Machine vision & inspection systems** – neutral white light ensures natural color rendering for defect detection.
- **Packaging & print quality control** – consistent illumination improves color accuracy and surface evaluation.
- **Food inspection** – reliable assessment of freshness, texture, and color.
- **Laboratory & optical setups** – reference light source with high CRI for experiments and testing.
- **Prototype & OEM lighting designs** – flexible integration in custom housings and fixtures.

Also applicable in R&D and specialized lighting setups.

Benefits for Engineers

- **Semi-finished module** – intended for OEM use and R&D integration
- **Perfect Pollux companion** – together with MaNima Pollux becomes a complete product
- **Higher efficiency with Pollux** – pulsing/strobing and thermal management unlock more effective output
- **Design freedom** – integrate into your own housing, optics, and cooling strategy
- **High light quality** – CRI ≥ 95 with 3 SDCM consistency
- **Modular scalability** – multiple engines can be combined as required
- **Thermal safety** – integrated NTC ensures stable performance
- **Industrial durability** – IP64 protection provided by 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 light output
- Delivers data for PLC/SCADA automation systems
- Open UDP-based API for system integration and customization

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	4200 ~ 4400 K	
CRI	≥ 95	
BIN	3 SDCM	
Beam angle	120 °	
LB waarde	L80B50	
Measurement results		
CRI (Object size: 1 piece)	91	
CCT (Object size: 1 piece)	4370 K	
Illuminance (Lux) (Object size: 1 piece)		24V
	5cm	215100 lx
	10cm	81620 lx
	15cm	41970 lx
	20cm	25990 lx
	25cm	17500 lx
	30cm	13130 lx
Total PPFD umol/m2 (PAR 400-700nm) (Object size: 1 piece)		24V
	5cm	3295.42 umol/m2
	10cm	1250.16 umol/m2
	15cm	643.62 umol/m2
	20cm	398.71 umol/m2
	25cm	268.67 umol/m2
	30cm	201.38 umol/m2
Peak wavelength (Object size: 1 piece)	452 nm	

Peak irradiance
(Object size: 1 piece)

	24V
5cm	4.27 W/sqm
10cm	1.68 W/sqm
15cm	0.87 W/sqm
20cm	0.54 W/sqm
25cm	0.36 W/sqm
30cm	0.27 W/sqm

Total irradiance
(Object size: 1 piece)

	24V
5cm	742.9 W/sqm
10cm	281.7 W/sqm
15cm	144.8 W/sqm
20cm	89.78 W/sqm
25cm	60.43 W/sqm
30cm	45.25 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

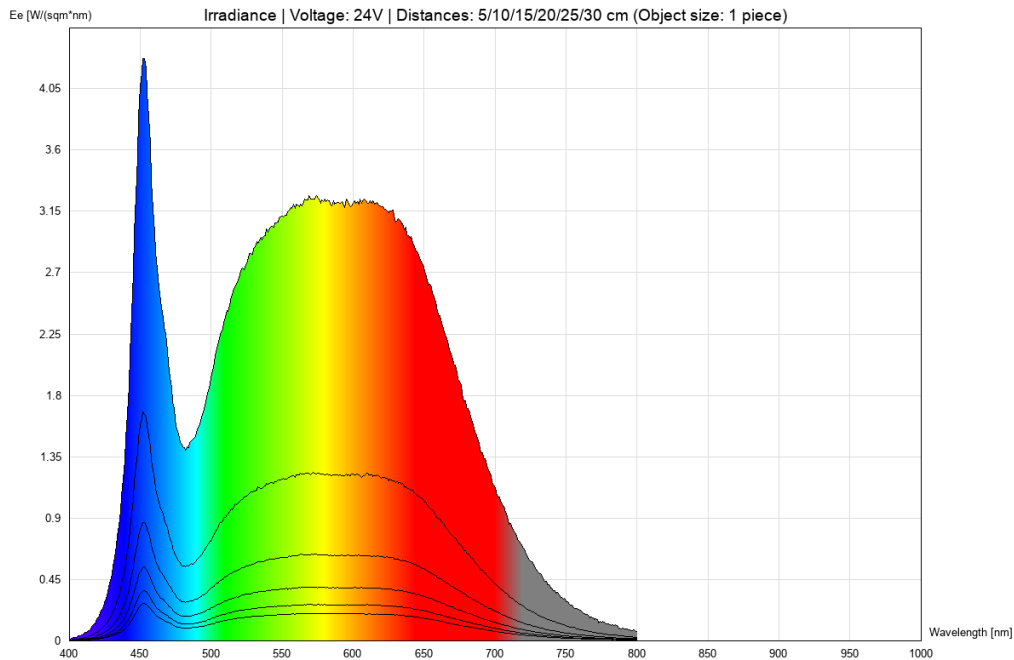
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

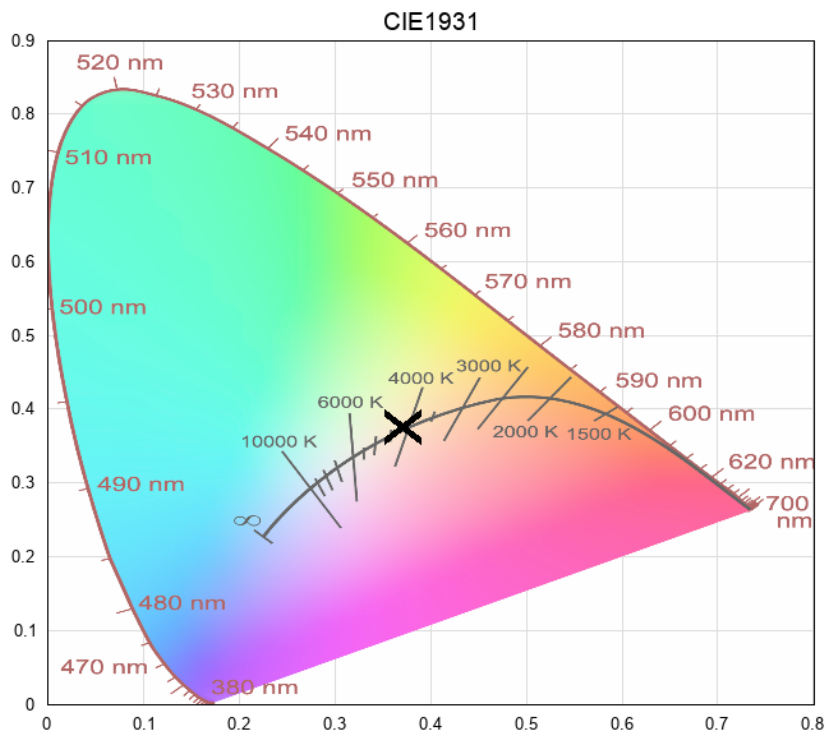
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - full-spectrum (24V)



cie1931



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