

Datasheet

LuxaLight Industrial LED Fixture Polarised cover Neutral White 4200K 24.2x16mm (24 Volt, 2835, IP64)

LF-24-4200-24.2X16-POL

Version: 2025-08-28.3

Product description

The LuxaLight Industrial LED Fixture Polarised Cover Neutral White 4200 K (24.2 × 16 mm) provides balanced, glare-free white illumination tailored for industrial inspection, food processing, and machine vision. The polarised PMMA cover reduces reflections and surface glare, ensuring high-contrast, true-to-colour imaging. At 5 cm distance, the fixture delivers ~334.6 W/m² total irradiance, ~1.92 W/m² peak irradiance, ~98,946 lx illuminance, and ~1484 µmol/m²/s PPFD (PAR 400–700 nm). With a CRI of ~91 and measured CCT of ~4370 K, this fixture combines accurate colour rendering with robust, modular industrial design (220–3000 mm), fully compatible with the MaNima Pollux Industrial System.

Key Specifications

Property	Value / Description
Color Temperature	Neutral White 4200 K (measured ~4370 K)
CRI	~91
Peak Wavelength	452 nm (blue spectral component)
Irradiance (5 cm)	Total: ~334.6 W/m²; Peak: ~1.92 W/m²
Illuminance (5 cm)	~98,946 lx
PPFD (5 cm)	~1484 µmol/m²/s (PAR 400–700 nm)
Cover	Polarised PMMA – suppresses glare & stray reflections
Beam Angle	120°
Dimensions	220 × 24.2 × 16 mm (fixture profile)
LEDs per fixture	108 × 2835 SMD LEDs
Supply & Protection	24 V DC / ~30 W; IP64; integrated NTC sensor (5 kΩ, β = 3950)
PCB Protection	Industrial-grade silicone coating
Thermal Monitoring	Integrated NTC sensor, controllable via MaNima Pollux
Pulsing/Strobing	Supported with MaNima Pollux Industrial System
Environment	Industrial grade: resistant to dust, moisture, vibration

Applications

- **Food inspection & quality control** – neutral white spectrum ensures accurate evaluation of products, contaminants, and packaging
- **Machine vision & automated inspection** – glare-suppressed illumination improves defect detection, barcode/OCR accuracy, and sorting
- **Print & packaging verification** – highlights label quality, colour consistency, and security markings with true-to-colour output
- **Surface & material analysis** – detects scratches, dents, or coating inconsistencies invisible under non-polarised light
- **Research & laboratory imaging** – high CRI neutral white supports accurate colour reproduction in R&D setups
- **Industrial workstations & cleanrooms** – glare-free white light enhances operator comfort and precision work

Benefits for Engineers

- Polarised neutral white output – glare-free, high-contrast inspection
- High CRI (~91) – reliable colour accuracy for vision and quality control
- Rugged IP64-rated construction – designed for harsh industrial environments
- Modular scalability – available up to 3 m lengths
- Automation-ready – plug-and-play with Pollux, PLC, SCADA, and UDP

Integration with MaNima Pollux Industrial System

- Real-time thermal monitoring via integrated NTC sensor
- Pulse/strobe operation for dynamic lighting control
- Automatic thermal protection for stable performance
- Full PLC/SCADA automation compatibility
- Open UDP API for advanced system integration

Technical specifications

General		
Brand	LuxaLight	
Application	Food Inspection (Agro-Food) Hyper - spectral Imaging Line Scan Cameras Machine Vision	
LED type	2835	
Material	Aluminum	
Dimensions	220 × 24,2 × 16 mm	
Mounting	Surface mounted	
Cover type	PMMA Polarised transparent	
LEDs per piece	108.00	
Lighting		
Color temperature	4200 K	
Measurement results		
CRI (Object size: 1 piece)	91	
CCT (Object size: 1 piece)	4370 K	
Illuminance (Lux) (Object size: 1 piece)		24V
	5cm	98946 lx
	10cm	37545.2 lx
	15cm	19306.2 lx
	20cm	11955.4 lx
	25cm	8050 lx
	30cm	6039.8 lx
Total PPFD umol/m2 (PAR 400-700nm) (Object size: 1 piece)		24V
	5cm	1484.26 umol/m2
	10cm	563.07 umol/m2
	15cm	289.88 umol/m2
	20cm	179.58 umol/m2
	25cm	121.01 umol/m2
	30cm	90.7 umol/m2
Peak wavelength (Object size: 1 piece)	452 nm	
Peak irradiance (Object size: 1 piece)		24V
	5cm	1.92 W/sqm
	10cm	0.75 W/sqm
	15cm	0.39 W/sqm
	20cm	0.24 W/sqm
	25cm	0.16 W/sqm
	30cm	0.12 W/sqm

Total irradiance
(Object size: 1 piece)

	24V
5cm	334.6 W/sqm
10cm	126.88 W/sqm
15cm	65.22 W/sqm
20cm	40.44 W/sqm
25cm	27.22 W/sqm
30cm	20.38 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	<table> <tr> <th>Symbol</th><th>Function</th></tr> <tr> <td>V+</td><td>V+</td></tr> <tr> <td>GND</td><td>Ground</td></tr> <tr> <td>NTC</td><td>NTC sensor</td></tr> <tr> <td>NTC_GND</td><td>NTC ground</td></tr> </table>	Symbol	Function	V+	V+	GND	Ground	NTC	NTC sensor	NTC_GND	NTC ground
Symbol	Function										
V+	V+										
GND	Ground										
NTC	NTC sensor										
NTC_GND	NTC ground										

NTC parameters	Resistance: 5000 Ohm Beta value: 3950
----------------	--

Environmental

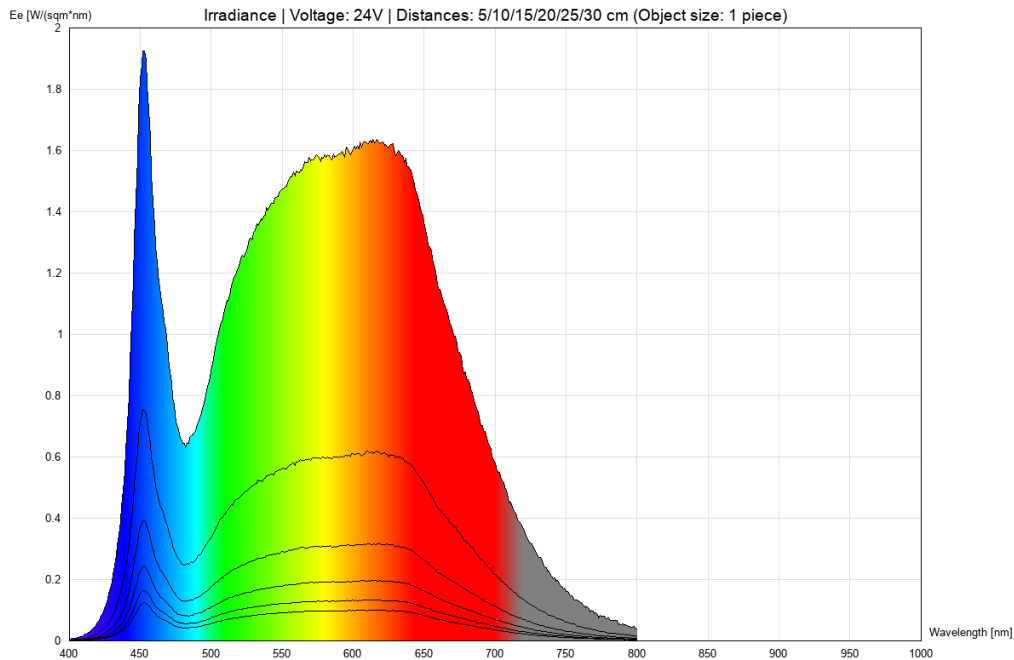
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

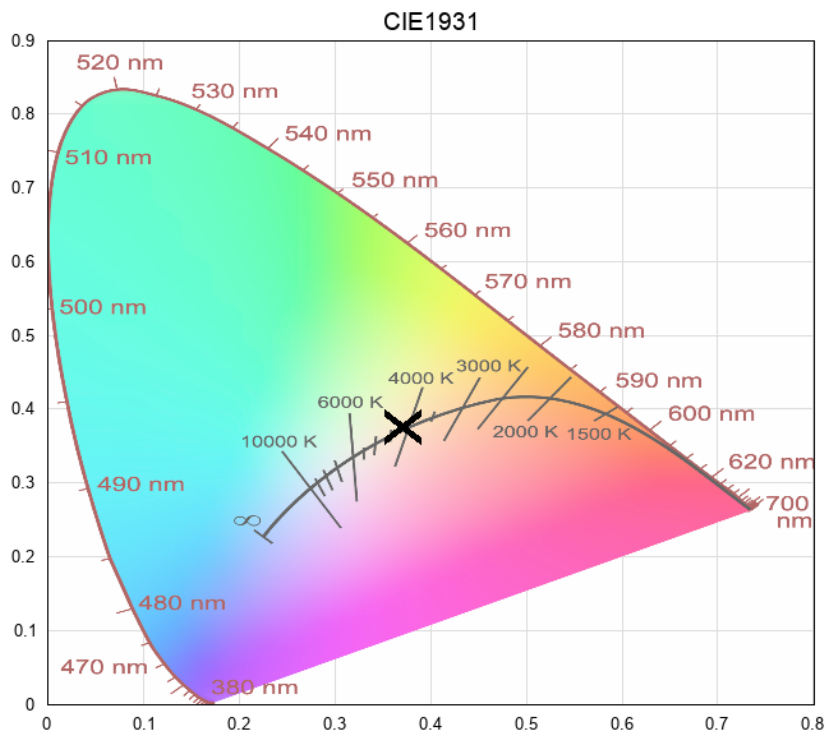
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - full-spectrum (24V)



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.