

Datasheet

LuxaLight Industrial LED Fixture Transparent cover Neutral White Full Spectrum 4800K 24.2x16mm (24 Volt, 2835, IP64)

LF-24-4800K-24.2X16-TC

Version: 2025-08-26.1

Product description

The **LuxaLight Industrial LED Fixture Transparent PMMA Cover Neutral White Full Spectrum 4800 K (24.2 × 16 mm)** combines 50% 4200 K and 50% 5700 K LEDs to produce a balanced, daylight-like spectrum. Its **modular design** (220–3000 mm), durable **PMMA cover**, and seamless integration with the **MaNima Pollux Industrial System** make it ideal for horticulture, food inspection, hyperspectral imaging, and advanced machine vision applications.

Key Specifications

Property	Value / Description
Color Temperature	4800 K (balanced 4200 K + 5700 K LEDs)
Measured CCT Peak	~4920 K (typical measured value)
CRI / Binning	CRI ≥ 95; 3-step SDCM standard binning
Optical Output	Illuminance ~187 100 lx @ 5 cm; PPFD ~2918 μmol/m²/s @ 5 cm; Irradiance ~662 W/m² @ 5 cm
Cover	Transparent PMMA – excellent light transmission and mechanical protection
PCB Protection	Industrial-level silicone coating for dust, moisture, and chemical resistance
Environmental Protection	IP64 – dust-tight and splash-resistant
Thermal Monitoring	Integrated NTC sensor, controllable through MaNima Pollux
Design	Modular and scalable, compatible with lengths from 220 to 3000 mm
Dimensions	24.2 × 16 mm fixture profile
Operating Environment	Built for demanding industrial conditions (dust, vibration, moisture)

Applications

- **Horticulture & Controlled Environments** – daylight-like spectrum supports balanced plant growth and complements targeted red/blue lighting
- **Food & Agro-Food Inspection** – accurate neutral color rendering for sorting and quality control
- **Hyperspectral & Multispectral Imaging** – balanced full spectrum as a stable reference source
- **Machine Vision** – neutral spectrum enhances defect detection and true-color analysis in production lines
- **Cleanrooms & Laboratories** – daylight-balanced lighting for precise visual inspections
- **R&D & Metrology** – reliable full-spectrum source for testing, calibration, and spectral benchmarks

Benefits for Engineers

- **Balanced Spectrum Efficiency:** ideal for both plant- and vision-related applications
- **Consistent Performance:** thermal feedback loop via Pollux ensures stable light output
- **Robust Industrial Build:** PMMA cover and IP64 rating provide long-term durability
- **Modular Flexibility:** easily adaptable fixture lengths up to 3000 mm
- **Seamless Control Integration:** fully compatible with industrial automation systems including PLC/SCADA

Integration with MaNima Pollux Industrial System

- Real-time temperature control via integrated NTC sensor
- Support for pulsing/strobing to boost peak intensity safely
- Thermal protection for continuous operation
- Direct compatibility with PLC/SCADA systems
- **Open API (UDP-based)** for bespoke integration and automation

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
Warranty	5 years
Cover type	PMMA transparent
LEDs per piece	108.00
Lifetime	70000 hours

Lighting

Color temperature	4800 K
CRI	≥ 95
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)	<table><tr><th></th><th>24V</th></tr><tr><td>5cm</td><td>187100 lx</td></tr><tr><td>10cm</td><td>74750 lx</td></tr><tr><td>15cm</td><td>38480 lx</td></tr><tr><td>20cm</td><td>23880 lx</td></tr><tr><td>25cm</td><td>16160 lx</td></tr><tr><td>30cm</td><td>12170 lx</td></tr></table>		24V	5cm	187100 lx	10cm	74750 lx	15cm	38480 lx	20cm	23880 lx	25cm	16160 lx	30cm	12170 lx
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Total PPFD umol/m2 (PAR 400-700nm) (Object size: 1 piece)	<table><tr><th></th><th>24V</th></tr><tr><td>5cm</td><td>2918.42 umol/m2</td></tr><tr><td>10cm</td><td>1167.06 umol/m2</td></tr><tr><td>15cm</td><td>600.707 umol/m2</td></tr><tr><td>20cm</td><td>373.353 umol/m2</td></tr><tr><td>25cm</td><td>252.442 umol/m2</td></tr><tr><td>30cm</td><td>189.882 umol/m2</td></tr></table>		24V	5cm	2918.42 umol/m2	10cm	1167.06 umol/m2	15cm	600.707 umol/m2	20cm	373.353 umol/m2	25cm	252.442 umol/m2	30cm	189.882 umol/m2
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Peak wavelength (Object size: 1 piece)	454 nm														

Peak irradiance

(Object size: 1 piece)

	24V
5cm	4.42247 W/sqm
10cm	1.7722 W/sqm
15cm	0.924298 W/sqm
20cm	0.577731 W/sqm
25cm	0.389644 W/sqm
30cm	0.292744 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
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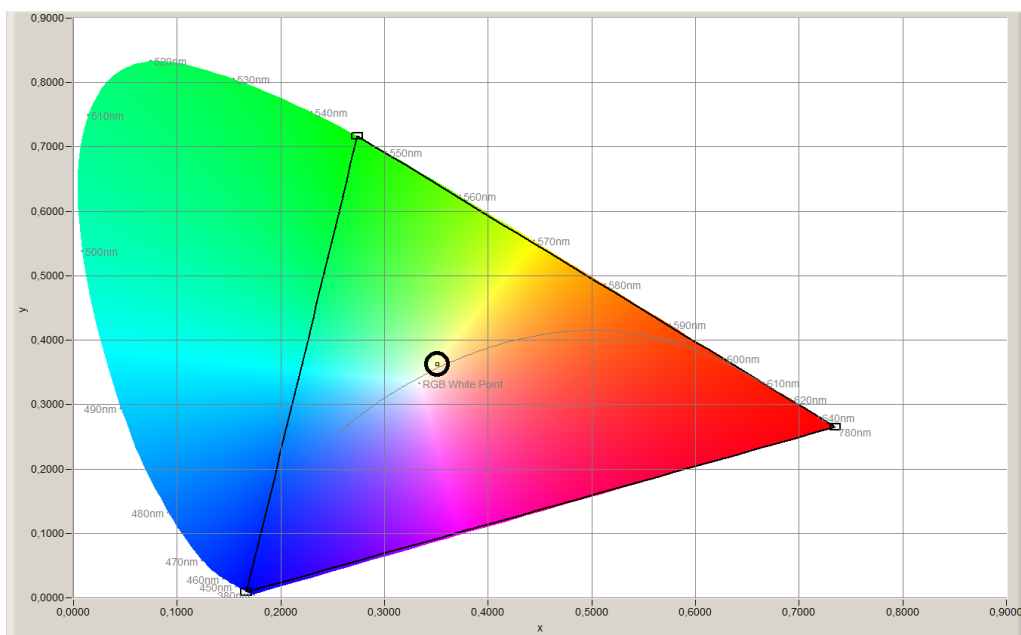
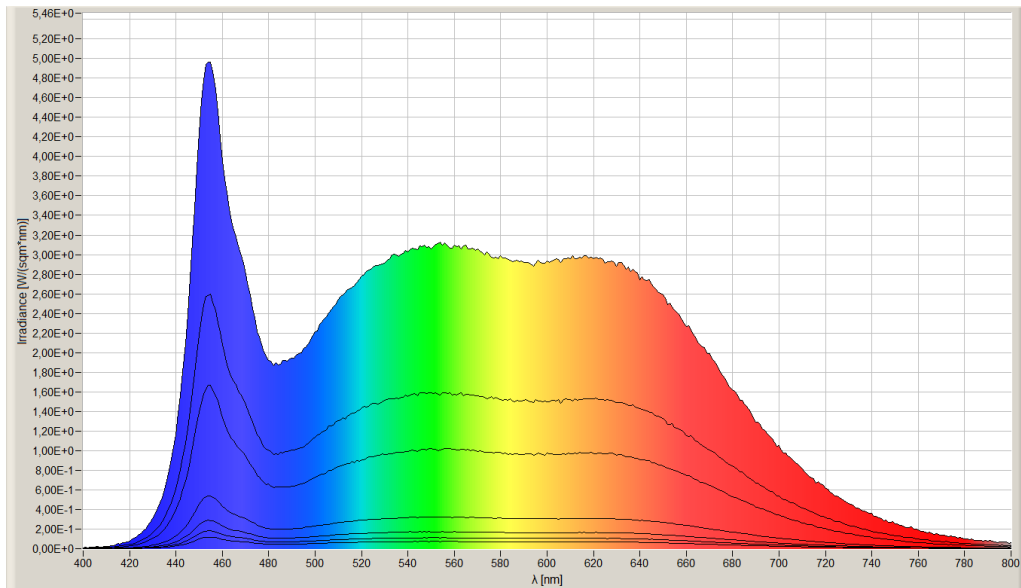
Environmental

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

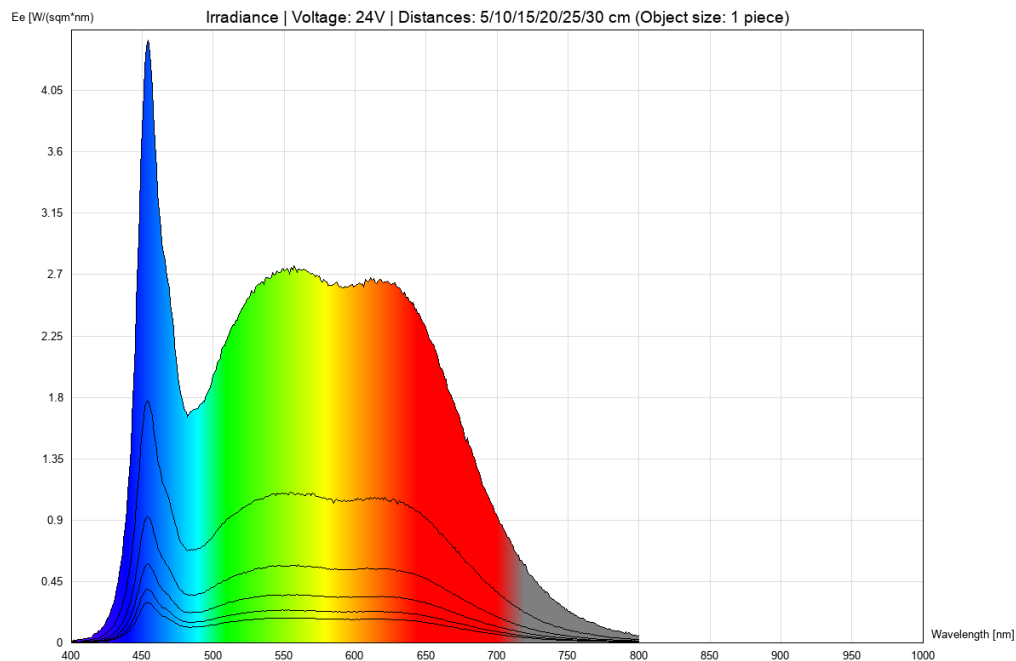
Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

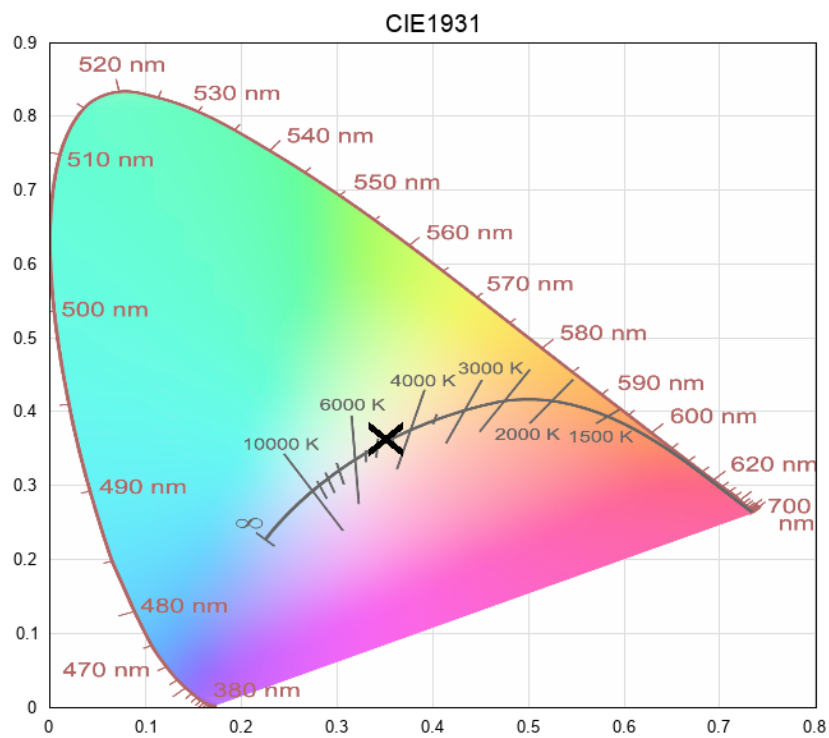
Measurement results



irradiance - full-spectrum (24V)



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