

Datasheet

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

LF-24-4200-24.2X16-TC

Version: 2025-08-26.4

Product description

The **LuxaLight Industrial LED Fixture Transparent PMMA Cover Neutral White Full Spectrum 4200 K (24.2 × 16 mm)** delivers balanced, high-fidelity neutral-white illumination for demanding industrial imaging and inspection tasks. Its **modular design** (scalable from 220 mm up to 3000 mm), transparent **PMMA cover** optimized for visible-light transmission, and seamless integration with the **MaNima Pollux Industrial System** make it a robust choice for food inspection, line-scan systems, hyperspectral pre-illumination, and machine vision.

Key Specifications

Property	Value / Description
Color Temperature	4200 K (measured CCT ~4370 K)
CRI / Binning	CRI ≥ 95; 3-step SDCM bin
Spectrum Highlights	Blue peak ~452 nm; full-spectrum neutral white
Optical Output	PPFD 3295 µmol/m²/s @ 5 cm; Illuminance 215,100 lx @ 5 cm; Total irradiance 713 W/m² @ 5 cm
Cover	Transparent PMMA – high transmission + mechanical protection
PCB Protection	Industrial-grade silicone coating (dust/moisture/chemical resistance)
Thermal Monitoring	Integrated NTC sensor, controllable via MaNima Pollux
Design	Modular & scalable, 220–3000 mm
Dimensions	24.2 × 16 mm (fixture profile)
Environment	Built for harsh industrial conditions (dust, vibration, moisture)

Applications

- **Machine vision & inspection** – high-CRI neutral white for contrast-critical imaging, QA, and assembly lines
- **Line-scan & hyperspectral systems** – stable broad-spectrum source for conveyor and lab setups
- **Food & agrifood inspection** – quality assessment, freshness control, and color grading under neutral light
- **Cleanrooms & laboratories** – glare-controlled neutral-white illumination for visual inspection tasks
- **R&D & metrology** – consistent spectral output for measurement benches and reference lighting
- **Horticulture & agrifood growth environments** – broad full-spectrum neutral white supporting balanced plant development – reliable neutral-white light for environments where color fidelity is crucial

Also suitable as a reference illuminant in spectral imaging workflows.

Benefits for Engineers

- **Image fidelity:** high CRI and stable spectrum improve detection & color accuracy
- **Consistent performance:** real-time thermal feedback via Pollux ensures stability and lifetime
- **Industrial robustness:** aluminum body + PMMA cover withstand harsh conditions
- **Modular scalability:** lengths and layouts tailored from 220 to 3000 mm

Integration with MaNima Pollux Industrial System

- Real-time NTC monitoring and control
- Pulsing/strobing support for process optimization
- Process data ready for PLC/SCADA
- **Open API (UDP-based)** for direct 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
Warranty	5 years
Cover type	PMMA transparent
LEDs per piece	108.00
Lifetime	70000 hours

Lighting

Color temperature	4200 K
CRI	≥ 95
Luminous Flux	3720 lm
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)	<table><tr><th></th><th>24V</th></tr><tr><td>5cm</td><td>215100 lx</td></tr><tr><td>10cm</td><td>81620 lx</td></tr><tr><td>15cm</td><td>41970 lx</td></tr><tr><td>20cm</td><td>25990 lx</td></tr><tr><td>25cm</td><td>17500 lx</td></tr><tr><td>30cm</td><td>13130 lx</td></tr></table>		24V	5cm	215100 lx	10cm	81620 lx	15cm	41970 lx	20cm	25990 lx	25cm	17500 lx	30cm	13130 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>3163.6032 umol/m2</td></tr><tr><td>10cm</td><td>1200.1536 umol/m2</td></tr><tr><td>15cm</td><td>617.8704 umol/m2</td></tr><tr><td>20cm</td><td>382.7616 umol/m2</td></tr><tr><td>25cm</td><td>257.92128 umol/m2</td></tr><tr><td>30cm</td><td>193.32672 umol/m2</td></tr></table>		24V	5cm	3163.6032 umol/m2	10cm	1200.1536 umol/m2	15cm	617.8704 umol/m2	20cm	382.7616 umol/m2	25cm	257.92128 umol/m2	30cm	193.32672 umol/m2
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Peak wavelength (Object size: 1 piece)	452 nm														

Peak irradiance (Object size: 1 piece)		24V
	5cm	4.1021664 W/sqm
	10cm	1.6085184 W/sqm
	15cm	0.83259744 W/sqm
	20cm	0.51703776 W/sqm
	25cm	0.34858944 W/sqm
	30cm	0.26203008 W/sqm

Total irradiance (Object size: 1 piece)		24V
	5cm	713.184 W/sqm
	10cm	270.432 W/sqm
	15cm	139.008 W/sqm
	20cm	86.1888 W/sqm
	25cm	58.0128 W/sqm
	30cm	43.44 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
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NTC parameters	Resistance: 5000 Ohm Beta value: 3950
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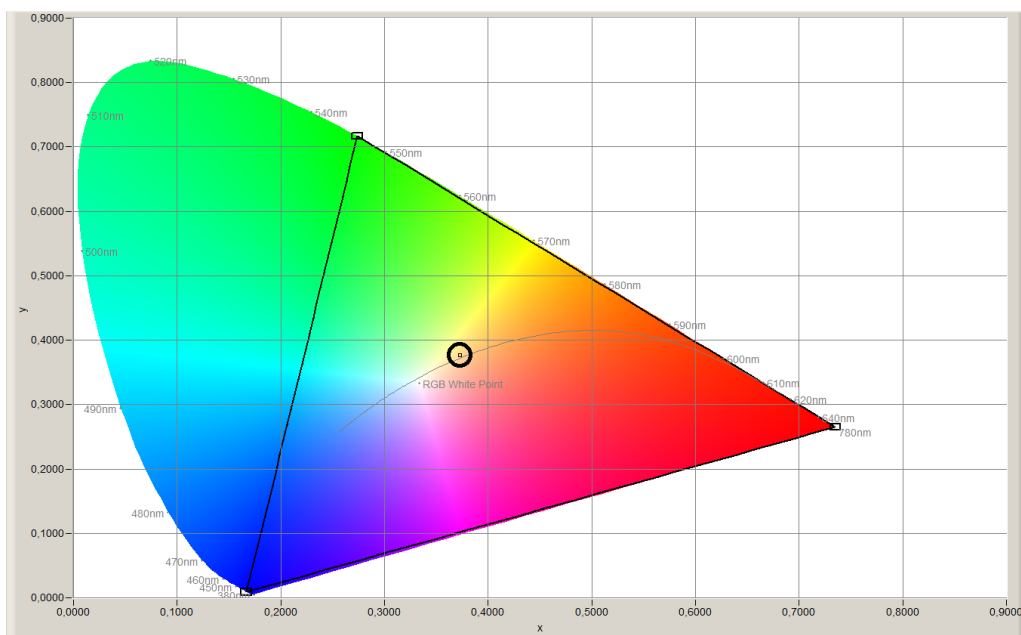
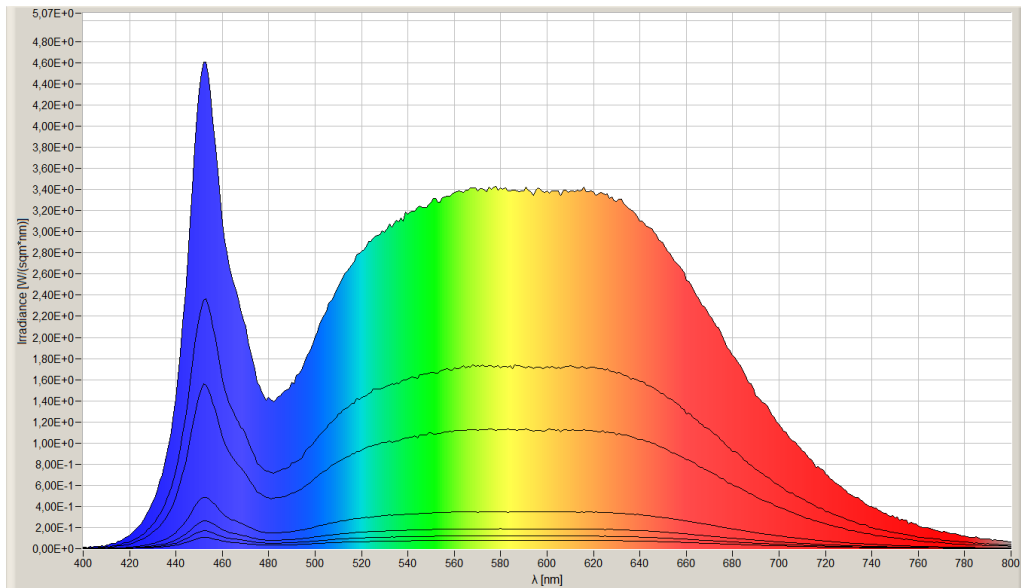
Environmental

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

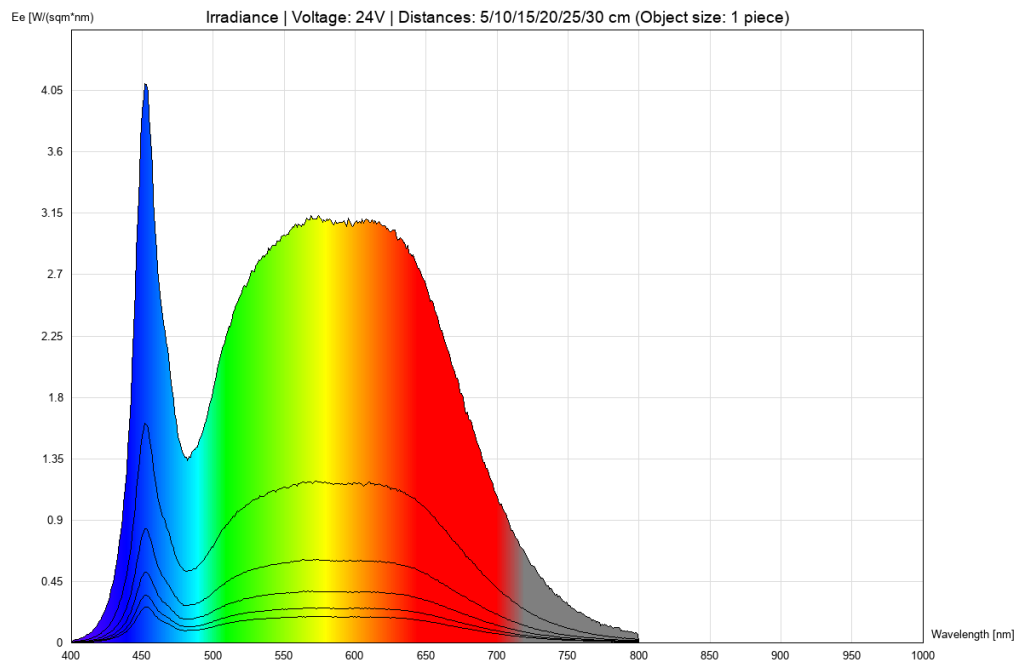
Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

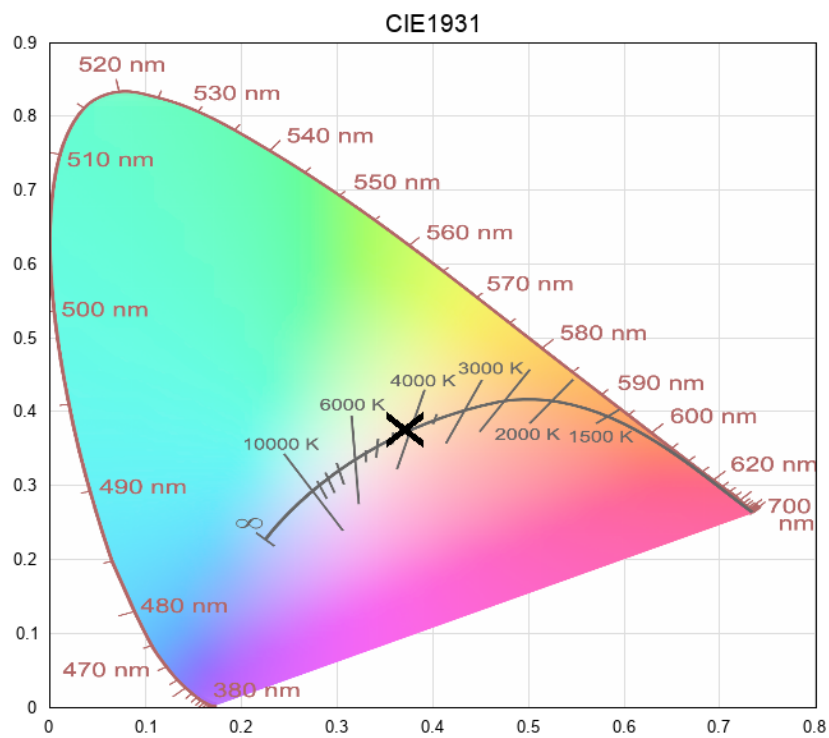
Measurement results



irradiance - full-spectrum (24V)



cie1931



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