Datasheet

LuxaLight Industrial LED Fixture Transparent IP68 Neutral White Full Spectrum 4800K 24.2x16mm (24 Volt, 2835, IP68)

LF-24-4800K-24.2X16-PU

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Product description

The **LuxaLight Industrial LED Fixture (4800K)** is designed as a high-quality lighting component for applications requiring high light output, precision, and excellent color rendering. This LED fixture consists of **54 LEDs with 4200K** and **54 LEDs with 5700K**, resulting in a total color temperature of **4800K**. This balanced spectrum offers an ideal solution for **horticulture**, **plant research**, and **scientific environments**, where a full spectrum of light is essential for photosynthesis and plant growth.

Key Features:

- **4800K Color Temperature:** The combination of 4200K and 5700K LEDs creates a balanced 4800K spectrum, offering neutral white light that is ideal for applications in **horticulture** and **plant research**. This spectrum is optimized for plant growth and supports effective photosynthesis.
- **High PPFD Output (3226 µmol/m²/s at 5 cm):** The LED fixture produces high light intensity, ideal for promoting photosynthesis and healthy plant growth. This makes it an excellent choice for **scientific research** and other related applications requiring powerful lighting.
- **Polyurethane Encapsulation (IP68 & IK10):** The LED fixture is fully encapsulated in **polyurethane (PU)**, making it **completely waterproof (IP68)**. This offers excellent protection against water and dust. Additionally, it has a **high IK rating (IK10)**, meaning it is resistant to heavy mechanical impacts and shocks, ideal for use in demanding environments.
- **Fully Finished Product:** The LED fixture is a **fully finished product**, ready for direct integration into systems or installations. This provides convenience and saves time when implementing applications in **horticulture**, **plant research**, or other light-related environments.
- **Real-Time Temperature Monitoring via NTC Sensor (in combination with Pollux Industry):** The integrated **NTC sensor** ensures continuous temperature measurement and adjustment. When used in combination with **Pollux Industry**, the sensor maintains optimal operating conditions, preventing overheating and ensuring the LED fixture consistently performs at its best. This combination maximizes output and contributes to reliable, long-lasting results.

Applications:

- **Horticulture and Plant Lighting:** The 4800K color temperature and high PPFD output make this LED fixture ideal for **horticultural** applications, where a broad light spectrum is required to promote photosynthesis. This makes the LED fixture perfect for **growing facilities**, **vertical farming**, and **commercial cultivation**.
- **Plant Research and Growth Optimization:** With its balanced light spectrum, the LED fixture is ideal for scientific research into plant growth, photosynthesis, and other biological processes influenced by light intensity and quality.
- **Scientific Research Environments:** The LED fixture provides powerful lighting for controlled research environments, where specific light spectrums and high PPFD output are essential for studying plant growth and photosynthesis in scientific applications.
- **Quality Control in Agriculture and Horticulture:** The LED fixture is also suitable for quality control of plants, crops, or other biological products in **agriculture** and **horticulture**, offering consistent lighting that accurately simulates growth conditions.

Benefits:

- **Full Spectrum Lighting:** The combination of **4200K** and **5700K** LEDs provides a broad spectrum, delivering powerful lighting for photosynthesis and plant growth, ideal for **horticulture** and **research**.
- **High PPFD Output:** The high PPFD output of **3226 µmol/m²/s at 5 cm** ensures sufficient light intensity, promoting healthy plant growth, especially in **scientific research** and commercial applications.
- **Robust Protection (IP68 & IK10):** The **fully encapsulated PU housing** offers **complete waterproofing (IP68)** and **high impact resistance (IK10)**, making the fixture resistant to harsh conditions and ideal for use in rugged environments.
- **Integration Flexibility:** The LED fixture can be easily integrated into existing systems or enclosures, offering flexibility for applications in **growing facilities**, **vertical farming**, **laboratories**, and other **horticulture and research applications**.
- **Efficient Performance:** The LED fixture provides reliable and efficient performance with consistent light output, making it ideal for intensive growth applications like **horticulture** and **scientific research**, where long-lasting and dependable lighting is required.
- **Real-Time Temperature Monitoring for Consistent Performance:** The integrated **NTC sensor** works in combination with **Pollux Industry**, ensuring continuous temperature monitoring, preventing overheating, and maintaining optimal performance over time. This contributes to maximizing the output of the LED fixture, essential for maintaining high performance in a dynamic environment.

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	Polyurethane
LEDs per piece	108.00

Lighting	
Color temperature	4800 K
Beam angle	120 °

Measurement results

PPFD

Value	Measuring distance
3473 µmol/m2	50 mm
1777 µmol/m2	75 mm
1144 µmol/m2	100 mm
353 µmol/m2	200 mm
189 µmol/m2	300 mm
118 µmol/m2	400 mm
76,3 µmol/m2	600 mm

Irradiance

Value	Measuring distance
784 W/m2	50 mm
401 W/m2	75 mm
259 W/m2	100 mm
80 W/m2	200 mm
43 W/m2	300 mm
27 W/m2	400 mm
17 W/m2	600 mm

Illuminance

Value	Measuring distance
225 klux	50 mm
115 klux	75 mm
74 klux	100 mm
23 klux	200 mm
12 klux	300 mm
7,6 klux	400 mm
5 klux	600 mm

• 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

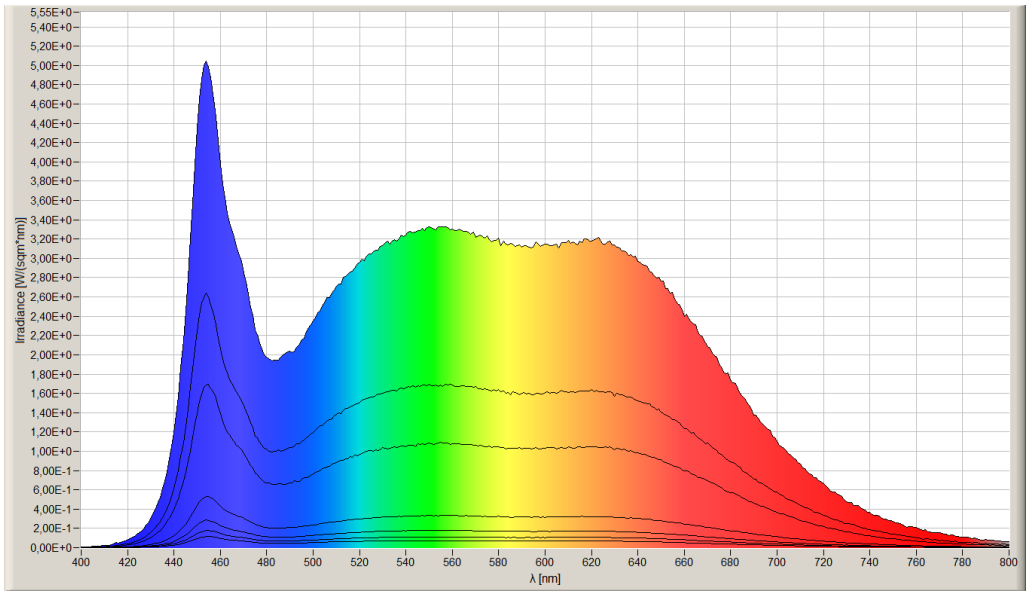
Environmental

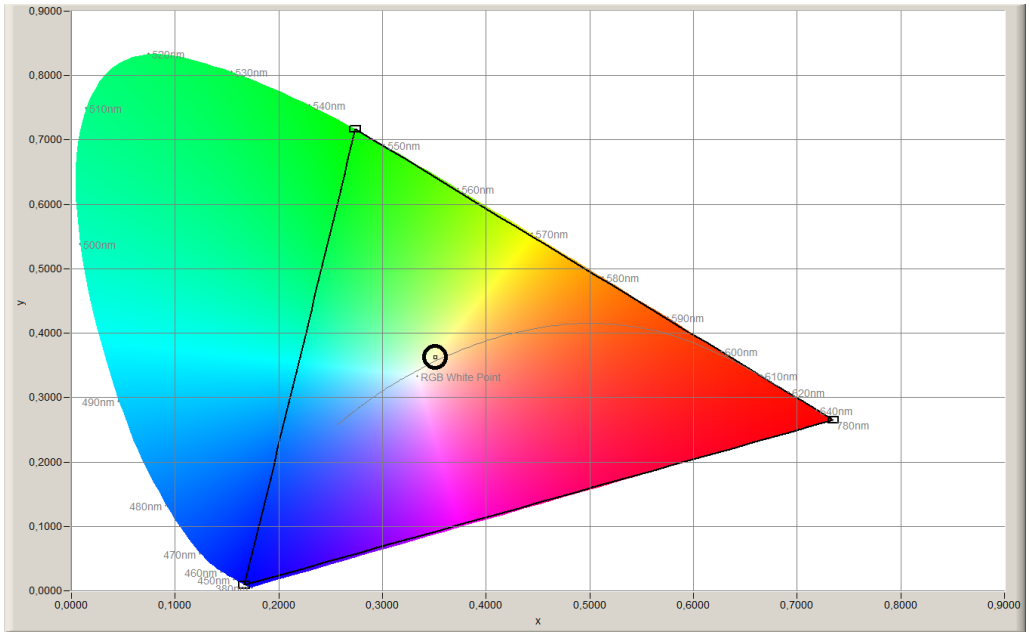
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 68

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results





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