Datasheet

LuxaLight Industrial LED Fixture Opaline cover Neutral White 4800k 24.2x16mm (24 Volt, 2835, IP64)

LF-24-4800k-24.2X16-OC

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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.
- **Aluminum Housing for Heat Management:** The fixture is made from **aluminum**, which ensures efficient heat dissipation and optimal performance, even during extended use. This contributes to the long lifespan and performance of the fixture.
- **Opal Cover for Mechanical Protection and Light Spread:** The **opal cover** protects the LEDs from mechanical damage and ensures even light spread, enhancing the fixture's durability and reliability.
- **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 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.
- **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	PMMA opal
LEDs per piece	108.00

Lighting	
Color temperature	4800 K
Beam angle	120 °

Measurement results

PPFD

Value	Measuring distance
2216 µmol/m2	50 mm
1155 µmol/m2	75 mm
772 µmol/m2	100 mm
250 µmol/m2	200 mm
129 µmol/m2	300 mm
82,4 µmol/m2	400 mm
56,1 µmol/m2	600 mm

Irradiance

Value	Measuring distance
501 W/m2	50 mm
261 W/m2	75 mm
175 W/m2	100 mm
56 W/m2	200 mm
29 W/m2	300 mm
19 W/m2	400 mm
13 W/m2	600 mm

Illuminance

Value	Measuring distance
160 klux	50 mm
87 klux	75 mm
54 klux	100 mm
17 klux	200 mm
8,7 klux	300 mm
5,8 klux	400 mm
3,8 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

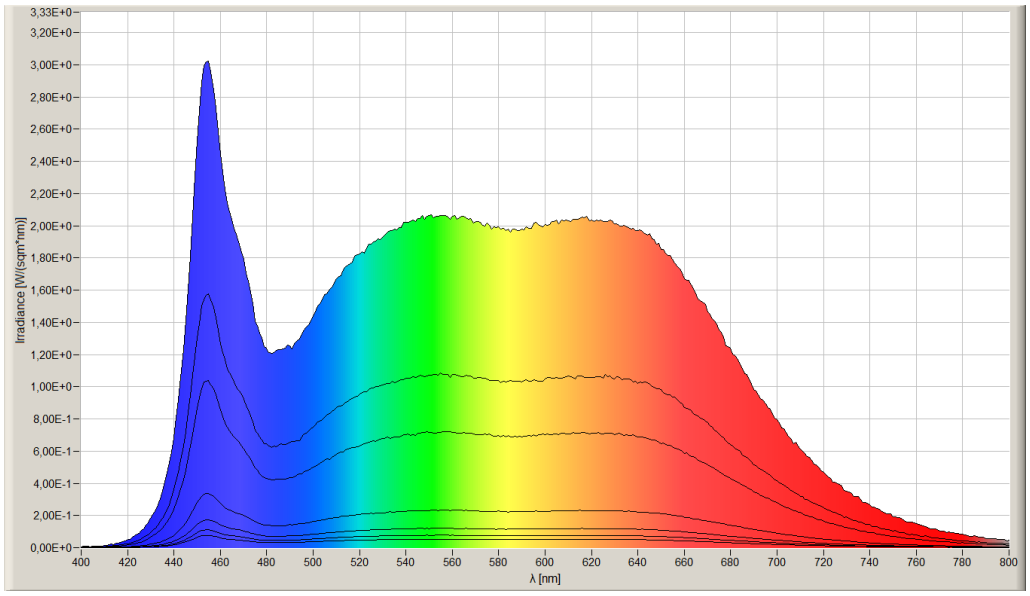
Environmental

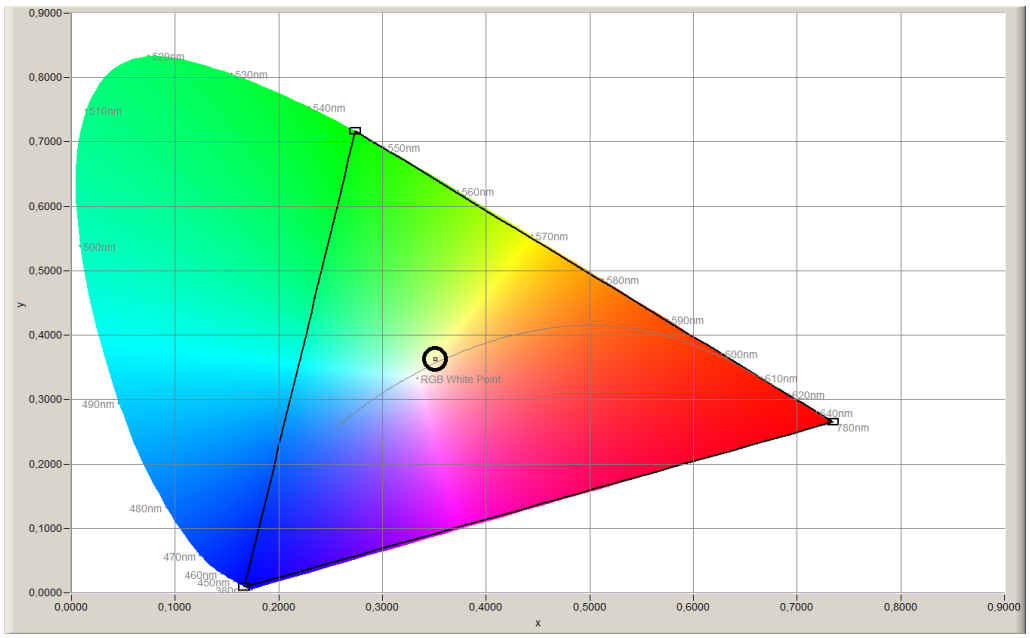
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results





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