

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: 2025-03-28.1

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 PPF Output (3226 $\mu\text{mol}/\text{m}^2/\text{s}$ at 5 cm):** The LED fixture produces a high light intensity, ideal for promoting photosynthesis and healthy plant growth. This makes it an excellent choice for **scientific research** and other related applications that require powerful lighting.
- **Aluminum Housing for Heat Management:** The fixture is made of **aluminum**, which ensures efficient heat dissipation and optimal performance, even during extended use. This contributes to the long lifespan and performance of the fixture.
- **Transparent Cover for Mechanical Protection:** The transparent cover protects the LEDs from mechanical damage, increasing 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 PPF 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 PPF 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 PPF Output:** The high PPF output of **3226 $\mu\text{mol}/\text{m}^2/\text{s}$ at 5 cm** ensures sufficient light intensity, promoting healthy plant growth, especially in **scientific research** environments and commercial applications.
- **Integration Flexibility:** The LED fixture can easily be integrated into existing systems or enclosures, offering flexibility for applications in **growing facilities, vertical farming, laboratories, and other horticulture and research-related environments**.
- **Efficient Performance:** The LED fixture provides reliable and efficient performance with consistent light output, making it ideal for intensive growth applications such as **horticulture and scientific research**, where long-lasting and dependable lighting is required.
- **Real-Time Temperature Monitoring for Consistent Performance:** The integrated **NTC sensor**, when used in combination with **Pollux Industry**, ensures continuous temperature monitoring, preventing overheating and maintaining optimal performance over time. This contributes to maximizing the LED fixture's output, which is 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																
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																	
PPFD	<table border="1"> <thead> <tr> <th>Value</th> <th>Measuring distance</th> </tr> </thead> <tbody> <tr> <td>3278 µmol/m2</td> <td>50 mm</td> </tr> <tr> <td>1687 µmol/m2</td> <td>75 mm</td> </tr> <tr> <td>1079 µmol/m2</td> <td>100 mm</td> </tr> <tr> <td>344 µmol/m2</td> <td>200 mm</td> </tr> <tr> <td>184 µmol/m2</td> <td>300 mm</td> </tr> <tr> <td>118 µmol/m2</td> <td>400 mm</td> </tr> <tr> <td>77,1 µmol/m2</td> <td>600 mm</td> </tr> </tbody> </table>	Value	Measuring distance	3278 µmol/m2	50 mm	1687 µmol/m2	75 mm	1079 µmol/m2	100 mm	344 µmol/m2	200 mm	184 µmol/m2	300 mm	118 µmol/m2	400 mm	77,1 µmol/m2	600 mm
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Illuminance

Value	Measuring distance
211 klux	50 mm
108 klux	75 mm
69 klux	100 mm
22 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
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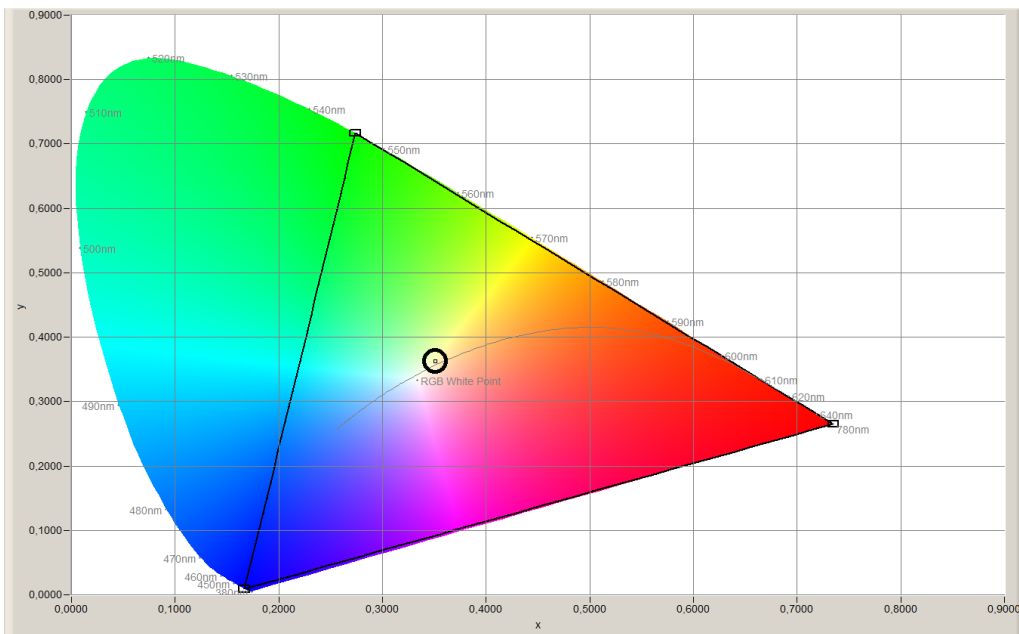
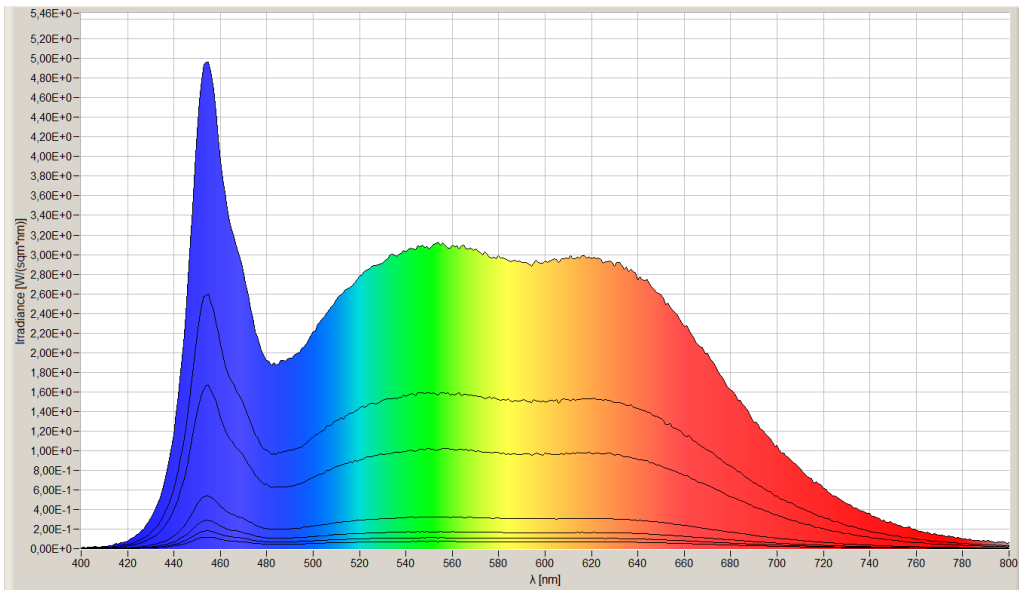
Environmental

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



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