# Datasheet

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

**LF-24-4800K-24.2X16-TC**

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LuxaLight B.V.
Hastelweg 260B
5652 CN Eindhoven
Nederland

KvK-nummer: 57580561
BTW-nummer: NL852642209B01
IBAN: NL87 INGB 0007 8159 75
BIC/SWIFT code: INGBNL2A

Email: info@luxalight.eu
Website: www.luxalight.eu
Tel.: +31 (0)40 - 202 49 04

## 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 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 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** 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)<br>Hyper - spectral Imaging<br>Line Scan Cameras<br>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

| 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 |

Irradiance

| Value | Measuring distance |
|---|---|
| 742 W/m2 | 50 mm |
| 383 W/m2 | 75 mm |
| 244 W/m2 | 100 mm |
| 78 W/m2 | 200 mm |
| 42 W/m2 | 300 mm |
| 27 W/m2 | 400 mm |
| 17 W/m2 | 600 mm |

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<br>Beta value: 3950 |

## Environmental

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

## Directives - standards - certificates

| | |
|---|---|
| Directives | RoHS<br>CE |
| Safety standards | EN60598-1<br>EN62031<br>IEC62471 |

## Measurement results