Datasheet

LuxaLight LED-strip Full Spectrum White 5500K Protected (24 Volt, 140 LEDs, 2835, IP64)

LS24FSW140X2835PLX

Version: 2025-03-03.2

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 Full Spectrum LED Strip** is designed as a high-quality lighting solution for applications that require high light output, precision, and excellent color rendering. With a color temperature of **5500K**, this LED strip provides a balanced light spectrum, making it ideal for a wide range of environments, such as horticulture, research settings, and plant growth applications. The strip is equipped with **140 full spectrum LEDs per meter**, ensuring even and intense light distribution, which is crucial for photosynthesis, plant growth, and scientific research.

The **5500K** color temperature provides cool white light, perfect for environments where bright and natural light is needed for plant growth and research. This LED strip is ideal for applications that require high-quality lighting, such as in cultivation facilities, vertical farming, and controlled research environments.

Key Features:

- **Full Spectrum Lighting:** The LED strip delivers full spectrum light, providing even and powerful illumination that is suitable for promoting photosynthesis and plant growth. This ensures optimal light quality in controlled environments.
- **140 LEDs per Meter:** The strip contains **140 full spectrum LEDs per meter**, providing high light density and even light distribution across the surface, which is essential for consistent, high-quality lighting for plant growth and research.
- **High Lumen Output:** The LED strip offers impressive light intensity, which is essential for promoting photosynthesis and supporting healthy plant growth. This makes it ideal for commercial horticulture applications, research facilities, and controlled growing environments.
- **Flexible Integration:** The LED strip can be easily integrated into existing systems or fixtures, offering versatility for applications in horticulture, plant research, and other lighting needs.
- **Energy-Efficient and Durable:** Thanks to LED technology, this strip provides long-lasting and reliable performance while reducing energy consumption. This makes it a cost-effective and sustainable solution for long-term lighting applications.
- **PCB Thickness of 3 oz/ft²:** The PCB has a thickness of **3 oz/ft²**, providing strong support and efficient heat dissipation, making the strip reliable and durable for long-term use.
- **Use of 3M 4905 VHB Tape:** The strip is equipped with **3M 4905 VHB tape**, ensuring strong and reliable adhesion to various surfaces, making installation in different environments and applications easy and durable.

Applications:

- **Horticulture and Plant Lighting:** The **5500K** color temperature and full spectrum light make this LED strip ideal for commercial greenhouses, vertical farming, and other horticultural applications, where bright, natural light is essential for photosynthesis and plant growth.
- **Plant Research and Growth Optimization:** This LED strip provides the balanced light spectrum needed for scientific research into plant growth, photosynthesis, and biological processes, where controlled light conditions are necessary.
- **Vertical Farming and Controlled Environment Agriculture (CEA):** The powerful lighting provided by this strip makes it suitable for use in greenhouses, hydroponic systems, and other controlled growing environments, where a specific light spectrum and high lumen output are required for maximum yield and healthy plant growth.
- **Plant Quality Control:** This LED strip is also ideal for quality control of plants, crops, or other biological products in commercial agriculture environments, providing consistent lighting that mimics natural growth conditions.

Benefits:

- **Full Spectrum Lighting:** The full spectrum provides powerful lighting for photosynthesis and plant growth, supporting healthy development processes for plants in commercial and research environments.
- **High Lumen Output:** The high lumen output of this LED strip ensures sufficient light intensity to promote healthy plant growth, especially in applications where intensive lighting is needed, such as horticulture.
- **Flexible Integration:** Thanks to its flexible design, the LED strip can be easily integrated into various systems or fixtures for applications in greenhouses, vertical farming, and other horticultural installations.
- **Efficient Performance:** The LED strip offers reliable and efficient performance, which is essential for intensive growth applications such as horticulture and scientific research, where consistent lighting is required over long periods.
- **Reliable Durability:** The **3 oz/ft² PCB thickness** ensures the strip is resistant to demanding environments, while the **3M 4905 VHB tape** ensures safe and easy installation on various surfaces.

Technical specifications

General	
Brand	LuxaLight
Application	Food Inspection (Agro-Food) Line Scan Cameras Machine Vision
LEDs / meter	140
LED type	2835
Length per reel	10 m
Length per segment	50 mm
LED strip width	10.00 mm
LED strip thickness	4.00 mm
PCB color	White
Mantle material	Silicon
Warranty	5 years
Lifetime	70000 hours

Lighting	
Color temperature	5400 ~ 5600 K
CRI	≥ 95
Luminous Flux	≈ 3100 lm
BIN	3 SDCM
Beam angle	120 °
LB waarde	L90B50

Measurement results

PPFD

Product length: 200 mm

Value	Measuring distance
1111 µmol/m2	25 mm
450 µmol/m2	50 mm
248 µmol/m2	75 mm
181 µmol/m2	100 mm
62,9 µmol/m2	200 mm
33,2 µmol/m2	300 mm

Irradiance

Product length: 200 mm

Value	Measuring distance
254 W/m2	25 mm
103 W/m2	50 mm
56,4 W/m2	75 mm
41,2 W/m2	100 mm
14,3 W/m2	200 mm
7,57 W/m2	300 mm

Illuminance

Product length: 200 mm

Value	Measuring distance
69,5 klux	25 mm
28,1 klux	50 mm
15,4 klux	75 mm
11,3 klux	100 mm
3,93 klux	200 mm
2,08 klux	300 mm

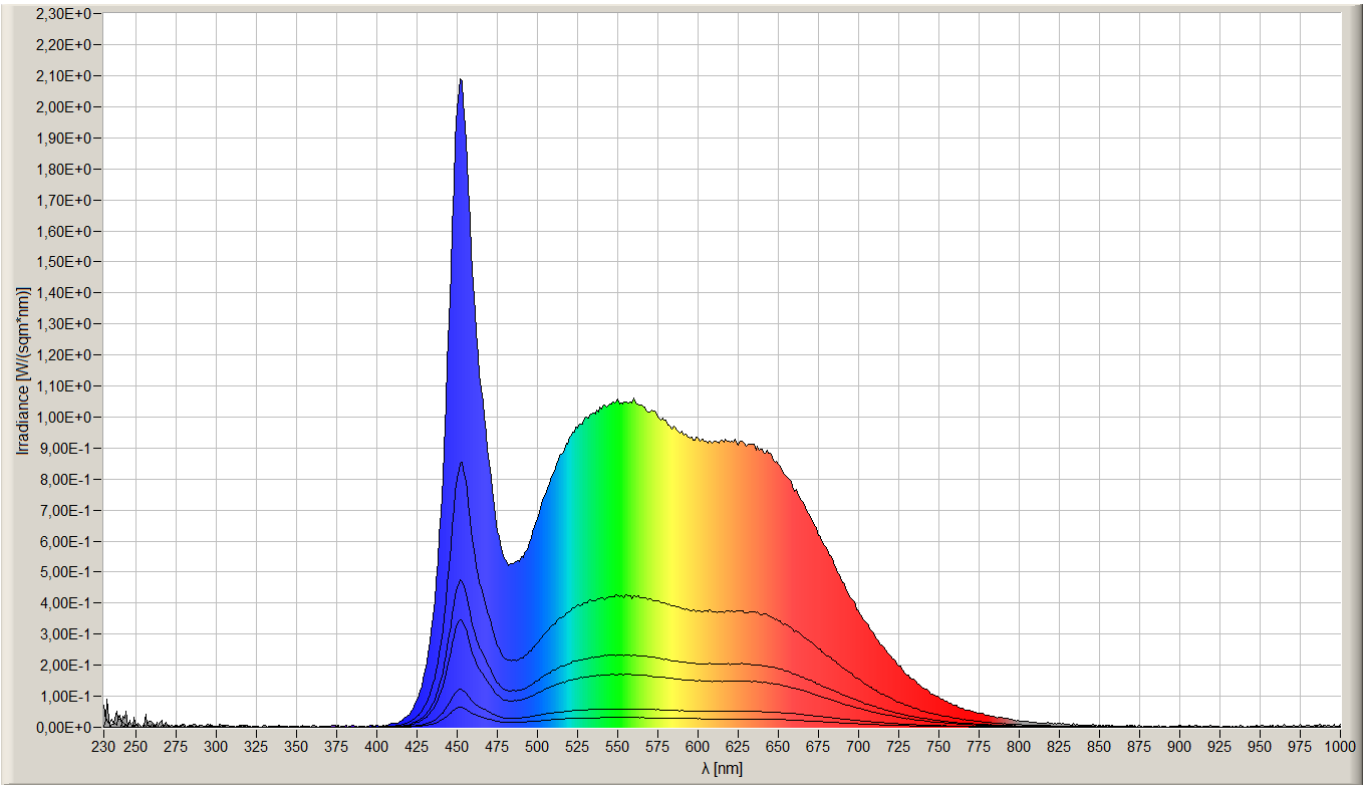
Electronics	
Working voltage	24V
Current / meter	1.00 A / meter
Power consumption per meter	24.00 W / meter
PCB material	Copper

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

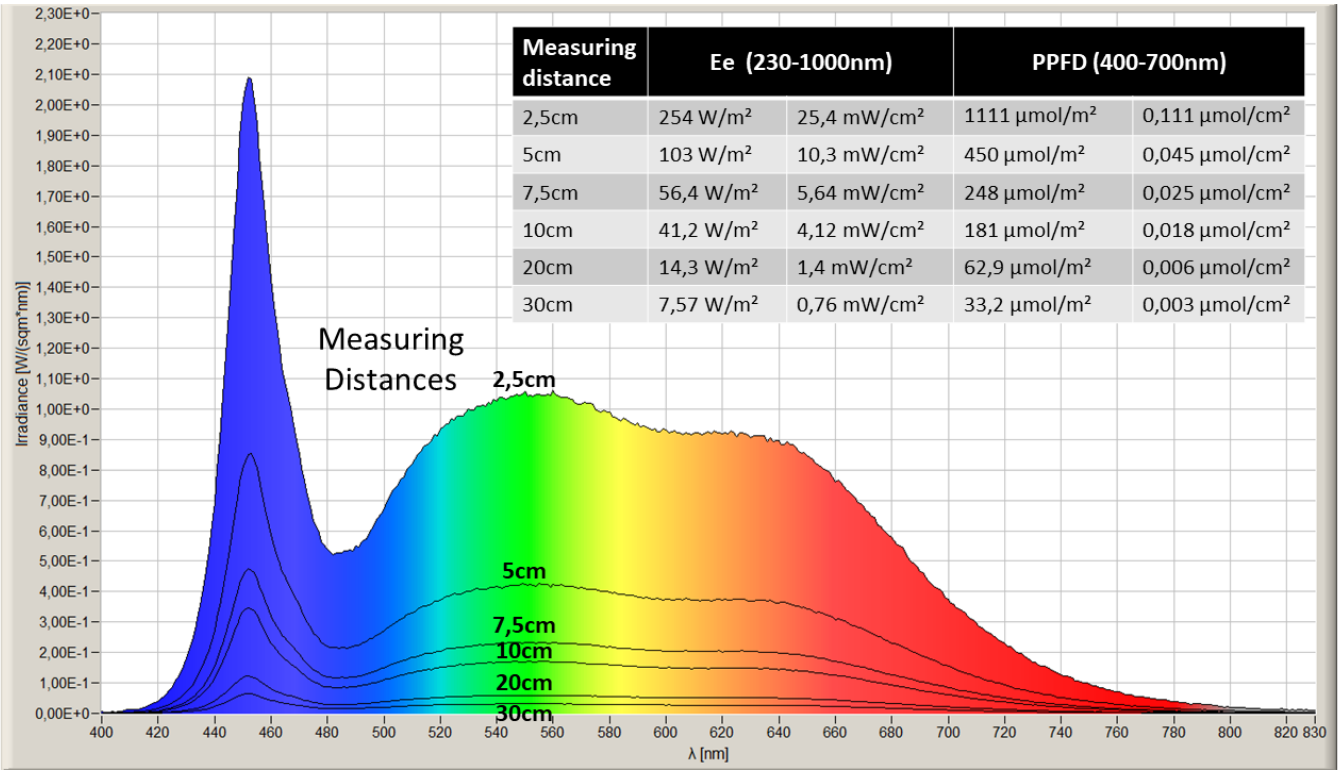
Directives - standards - certificates	
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

Wavelength

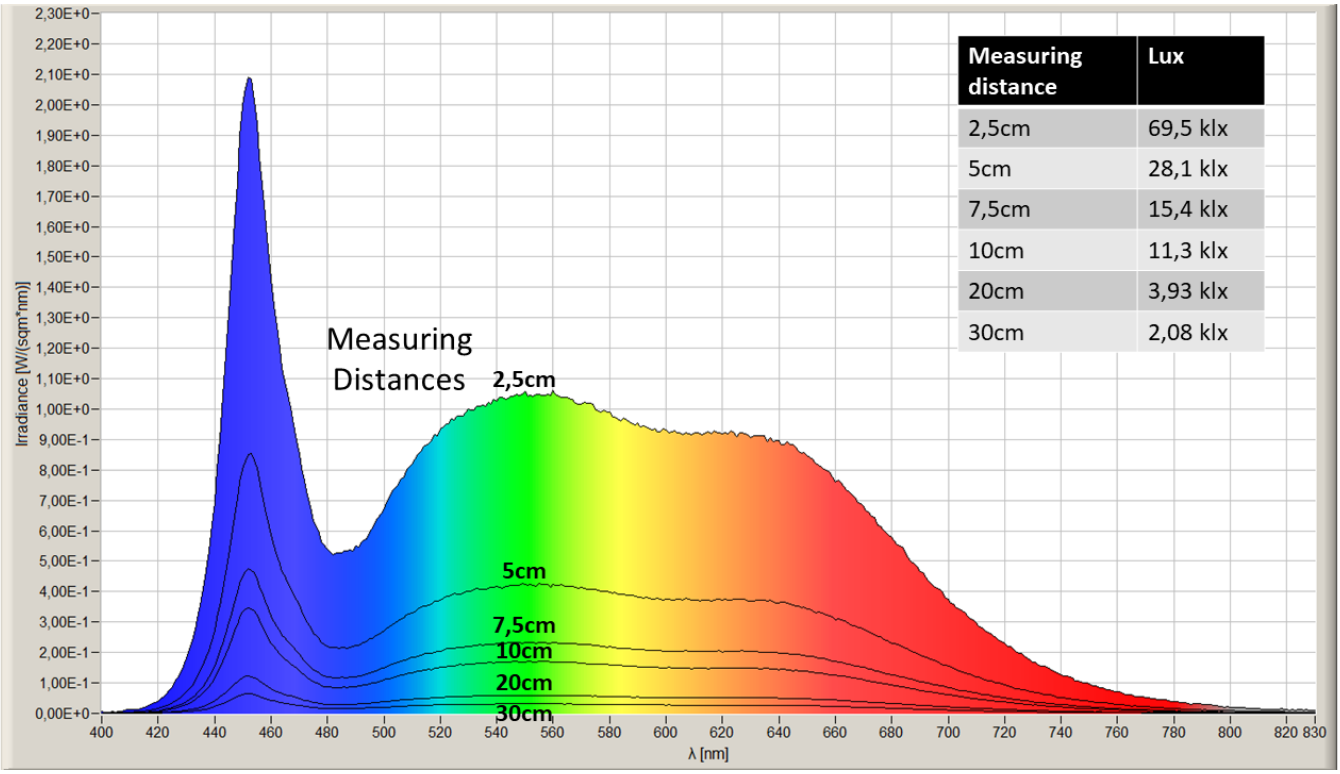


PPFD - Radiance



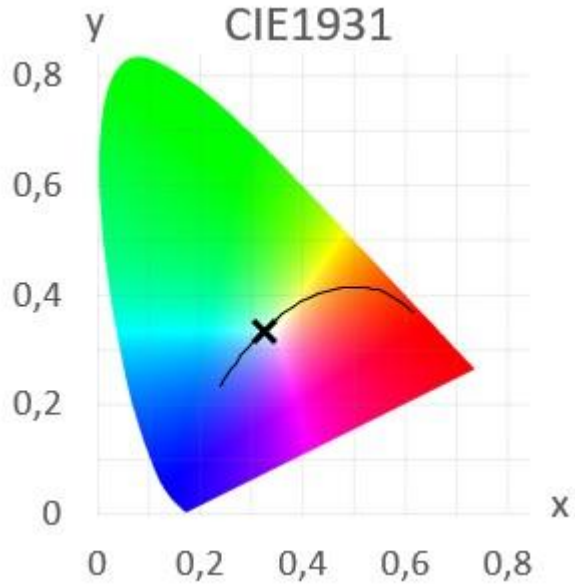
Measuring distance	Ee (230-1000nm)		PPFD (400-700nm)	
2,5cm	254 W/m²	25,4 mW/cm²	1111 µmol/m²	0,111 µmol/cm²
5cm	103 W/m²	10,3 mW/cm²	450 µmol/m²	0,045 µmol/cm²
7,5cm	56,4 W/m²	5,64 mW/cm²	248 µmol/m²	0,025 µmol/cm²
10cm	41,2 W/m²	4,12 mW/cm²	181 µmol/m²	0,018 µmol/cm²
20cm	14,3 W/m²	1,4 mW/cm²	62,9 µmol/m²	0,006 µmol/cm²
30cm	7,57 W/m²	0,76 mW/cm²	33,2 µmol/m²	0,003 µmol/cm²

LUX



Measuring distance	Lux
2,5cm	69,5 klx
5cm	28,1 klx
7,5cm	15,4 klx
10cm	11,3 klx
20cm	3,93 klx
30cm	2,08 klx

CIE1931



While LuxaLight has made every reasonable effort to ensure the accuracy of the information in this brochure, LuxaLight does not guarantee that it is error - free, nor does LuxaLight make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. LuxaLight reserves the right to make any adjustments to the information contained herein at any time without notice. LuxaLight expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalogue are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult LuxaLight for the latest dimensions and design specifications.