

Datasheet

Zirqle Industrial LED Fixture Opaline cover Red 640nm 24.2x16mm (24 Volt, 2835, IP64)

LF-24-640-24.2X16-OC

Version: 2025-08-29.1

Product description

The **Zirqle Industrial LED Fixture Opaline Cover Red 640 nm (24.2 × 16 mm)** is designed for applications requiring uniform and diffused red light. The opaline PMMA diffuser ensures smooth illumination with reduced glare and minimal hotspots. With its modular design (220 mm up to 3000 mm) and compatibility with the MaNima Pollux Industrial System, this fixture is an excellent choice for biological research, plant growth studies, machine vision, and display applications.

Key Specifications

Property	Value / Description
Wavelength	640 nm (red), peak ~639 nm
Illuminance (5 cm)	~48,200 lx
PPFD (5 cm, PAR 400–700 nm)	~1,806 $\mu\text{mol}/\text{m}^2/\text{s}$
Cover	Opaline PMMA for diffused, homogeneous emission
Beam angle	120°
Dimensions	220 × 24.2 × 16 mm (fixture profile)
Supply & Protection	24 V DC / ~30 W, integrated NTC sensor, IP64
Electronics (ref.)	24 V, 1.25 A; NTC 5 k Ω , β = 3950
Environmental rating	IP64; -20 °C to +60 °C operating; -40 °C to +80 °C storage

Applications

- Biological and medical research** – red light at 640 nm supports photobiomodulation and cellular studies
- Horticulture and plant growth tests** – provides uniform red illumination for photosynthetic response and controlled growth trials
- Machine vision and inspection** – diffuse red light reduces reflections and enhances material contrast
- Optical calibration and laboratory setups** – homogeneous red reference illumination
- Display and signage systems** – stable red background and signal lighting
- R&D and specialized setups** – adaptable for experimental and advanced industrial applications

Benefits for Engineers

- Homogeneous red illumination** – reliable, uniform emission for process stability
- Hotspot-free performance** – ensures reproducible results in measurement and inspection
- Industrial-grade construction** – IP64, aluminum housing, opaline diffuser
- Scalable modular design** – customizable lengths for application-specific installations
- Ready-to-use integration** – seamless monitoring and pulsing control with MaNima Pollux

Integration with MaNima Pollux Industrial System

- Real-time NTC sensor monitoring
- Pulsing/strobing for increased peak irradiance
- Prevents overheating while maintaining stable performance
- Data output for PLC/SCADA integration
- Open UDP-based API for custom connectivity

Technical specifications

General		
Brand	Zirqle	
Application	Barcode Scanning 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	
Lifetime	70000 hours	
Lighting		
Wave length	640nm	
Beam angle	120 °	
Measurement results		
Illuminance (Lux) (Object size: 1 piece)		24V
	5cm	40245 lx
	10cm	15060 lx
	15cm	7545 lx
	20cm	4665.75 lx
	25cm	3066 lx
	30cm	2343.75 lx
Total PPFD umol/m2 (PAR 400-700nm) (Object size: 1 piece)		24V
	5cm	1693.37 umol/m2
	10cm	644.54 umol/m2
	15cm	333.67 umol/m2
	20cm	208.75 umol/m2
	25cm	140.02 umol/m2
	30cm	107.6 umol/m2
Peak wavelength (Object size: 1 piece)	642 nm	
Peak irradiance (Object size: 1 piece)		24V
	5cm	14.38 W/sqm
	10cm	5.33 W/sqm
	15cm	2.71 W/sqm
	20cm	1.67 W/sqm
	25cm	1.12 W/sqm
	30cm	0.84 W/sqm

Total irradiance (Object size: 1 piece)

	24V
5cm	322.06 W/sqm
10cm	128.39 W/sqm
15cm	66.89 W/sqm
20cm	41.43 W/sqm
25cm	27.27 W/sqm
30cm	21.42 W/sqm

- 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

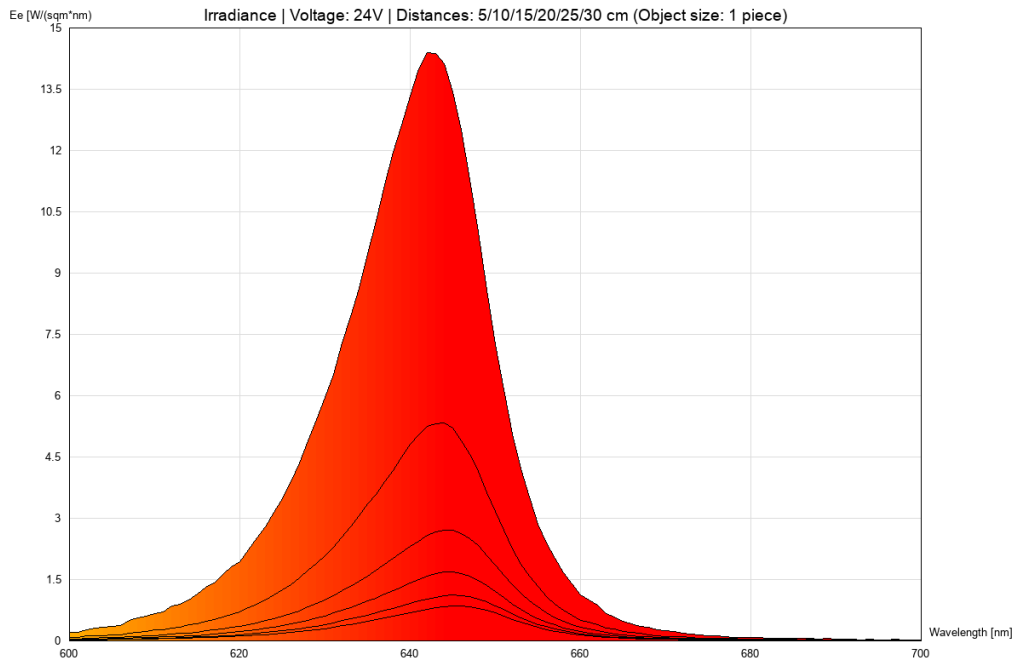
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

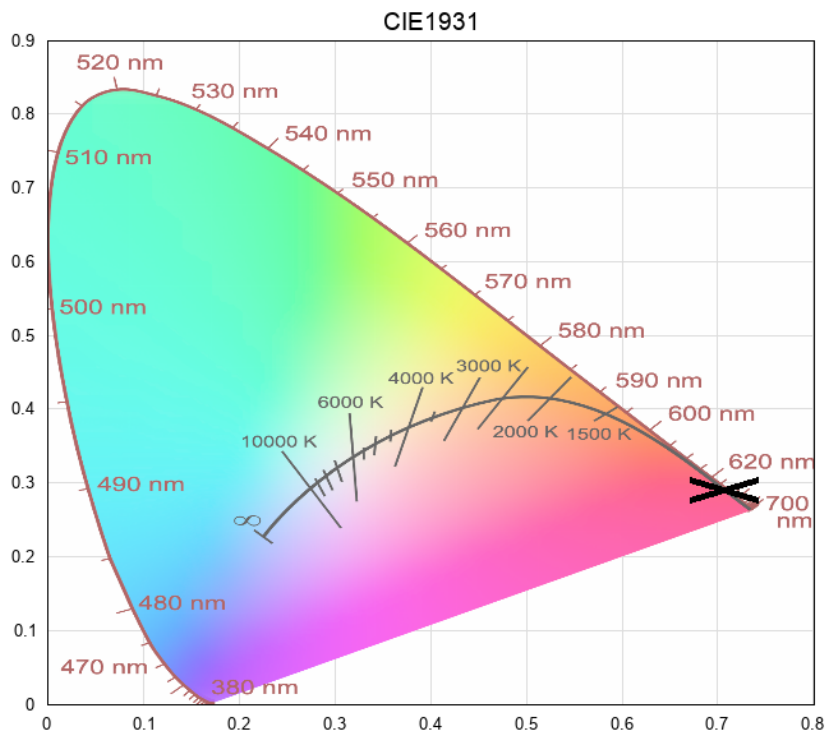
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - 600-700-red (24V)



cie1931



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