

Datasheet

LuxaLight Pixel LED-strip HD107S Digital SPI RGB Protected High Power (5 Volt, 144 LEDs, 5050, IP64)

LS5RGB144HD107SPLX

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Product description

This **LuxaLight** professional digital RGB LED strip is designed for applications where flexible, customized lighting is required, with a high level of control over each individual LED pixel. The strip consists of **144 segments**, each **6.95 mm long**. The **HD107S IC is embedded in the 5050 LED housing**, allowing each LED to be individually controlled. This enables detailed light effects and precise color and brightness adjustments. The strip features a **black PCB** and an **IP64 rating**, meaning it is dust-tight and provides protection against **moist environments**, making it suitable for both indoor and outdoor applications. The **high PWM rate of the IC** allows for smooth filming of these pixels with cameras up to **87 fps**, ensuring clear and accurate visual performance.

LED Strip Configuration:

- **Voltage:** 5V
- **Number of segments:** 144
- **Length per segment:** 6.95 mm
- **Total LEDs on the strip:** 144 RGB LEDs per meter
- **Adhesive:** The strip is equipped with **4905 VHB (Very High Bond)** tape, ensuring strong and durable adhesion to various surfaces.
- **PCB Color:** Black PCB
- **PCB thickness:** The PCB has a thickness of **3 oz/ft²**, providing robust support and efficient heat dissipation.
- **IP Rating:** **IP64**, suitable for **indoor and outdoor applications**, offering protection against dust and moisture.

HD107S IC

The LED strip uses the **HD107S IC**, which is **embedded in the 5050 LED housing**. The **HD107S** is an advanced controller that provides PWM dimming (pulse width modulation) for the RGB LEDs, allowing for very smooth and precise control over the color range and brightness. Additionally, the LEDs can be **individually controlled**, enabling detailed light effects and color adjustments.

Key Features of the HD107S IC:

- **Pixel Addressing:** Each LED can be individually controlled for precise color and brightness adjustments.
- **Color Management:** Supports **RGB LEDs**, ensuring optimized color rendering and flexibility for color tuning.
- **Communication:** The IC uses a serial data interface, passing data from the first to the last IC, enabling the integration of long chains of LED strips.
- **Stability and Performance:** The **integrated clock** of the IC, with a **clock drive frequency of 20 MHz**, ensures stable operation by providing a consistent time reference for data transmission. This clock-driven approach minimizes timing errors, signal shifts, and maintains synchronization of the LED strip. It enhances the reliability of the system, even in complex setups, ensuring stable communication and performance even under varying environmental conditions. By regulating communication through the clock, the IC improves the robustness of the system against voltage fluctuations, power irregularities, and other operational inconsistencies. This ensures precise and synchronized control of each individual LED.
- **High PWM Rate (2600Hz):** The high PWM rate of the IC allows for smooth pixel filming with cameras up to **87 fps**, providing clear and precise video recording of the LED strip.

Technical specifications

General											
Brand	LuxaLight										
LEDs / meter	144										
LED type	5050										
Length per reel	2 m										
LED strip width	12.00 mm										
LED strip thickness	3.00 mm										
PCB color	Black										
Warranty	2 years										
Lifetime	50000 hours										
Lighting											
Luminous Flux	1178 lm										
Luminous flux red	317 lm										
Luminous flux green	680 lm										
Luminous flux blue	181 lm										
Wave length Red	620 ~ 630 nm										
Wave length Green	515 ~ 530 nm										
Wave length Blue	460 ~475 nm										
BIN	3 SDCM										
Beam angle	120 °										
Electronics											
Working voltage	5V										
Current / meter	8.64 A / meter										
Power consumption per meter	43.20 W / meter										
PCB material	Copper										
Pinout	<table border="1"> <thead> <tr> <th>Symbol</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>V+</td> <td>V+</td> </tr> <tr> <td>GND</td> <td>Ground</td> </tr> <tr> <td>D1</td> <td>Data in</td> </tr> <tr> <td>CL</td> <td>Clock</td> </tr> </tbody> </table>	Symbol	Function	V+	V+	GND	Ground	D1	Data in	CL	Clock
Symbol	Function										
V+	V+										
GND	Ground										
D1	Data in										
CL	Clock										
Control											
Number of channels	3										
IC type	HD107S										
Environmental											
Operating temperature	-20 ~ +60 °C										
Storage temperature	-40 ~ +80 °C										

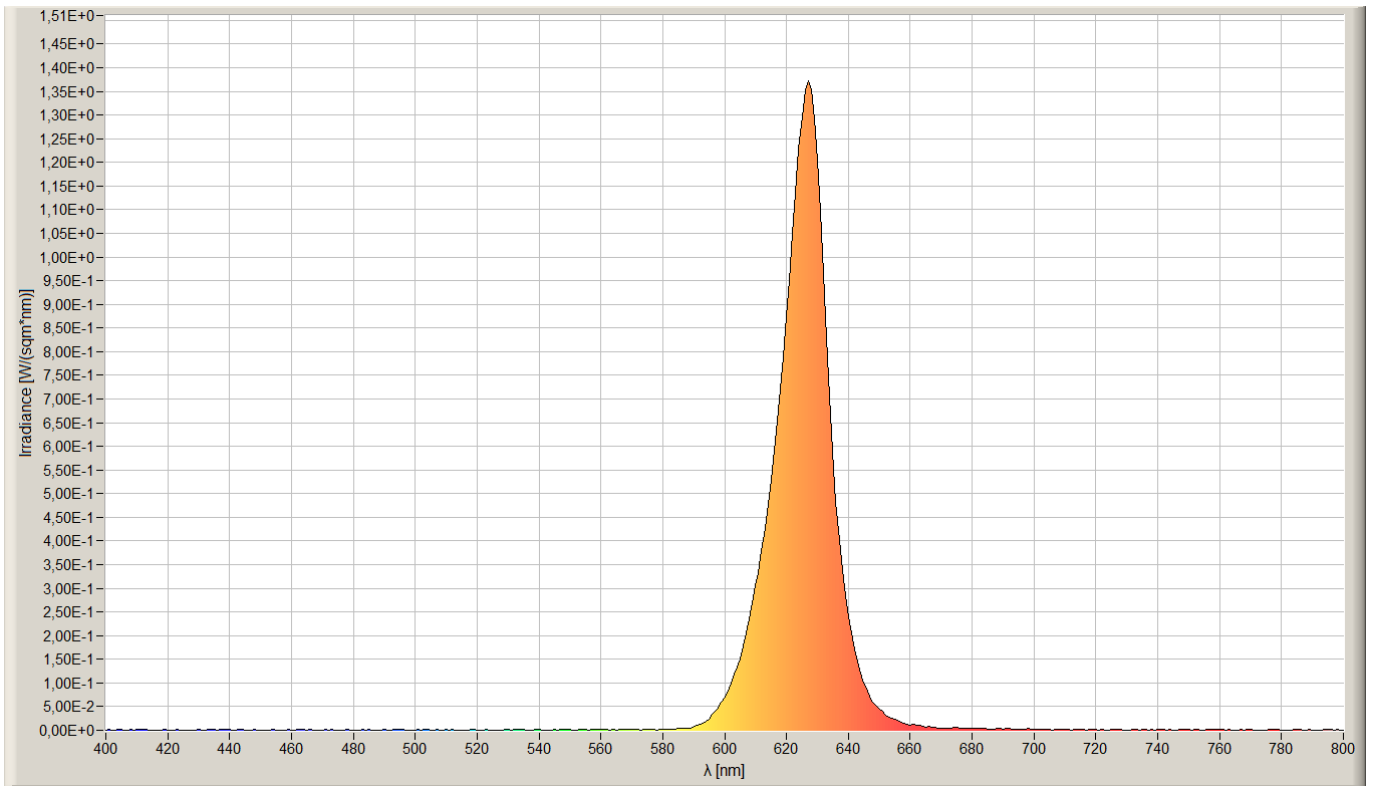
IP class IP 64

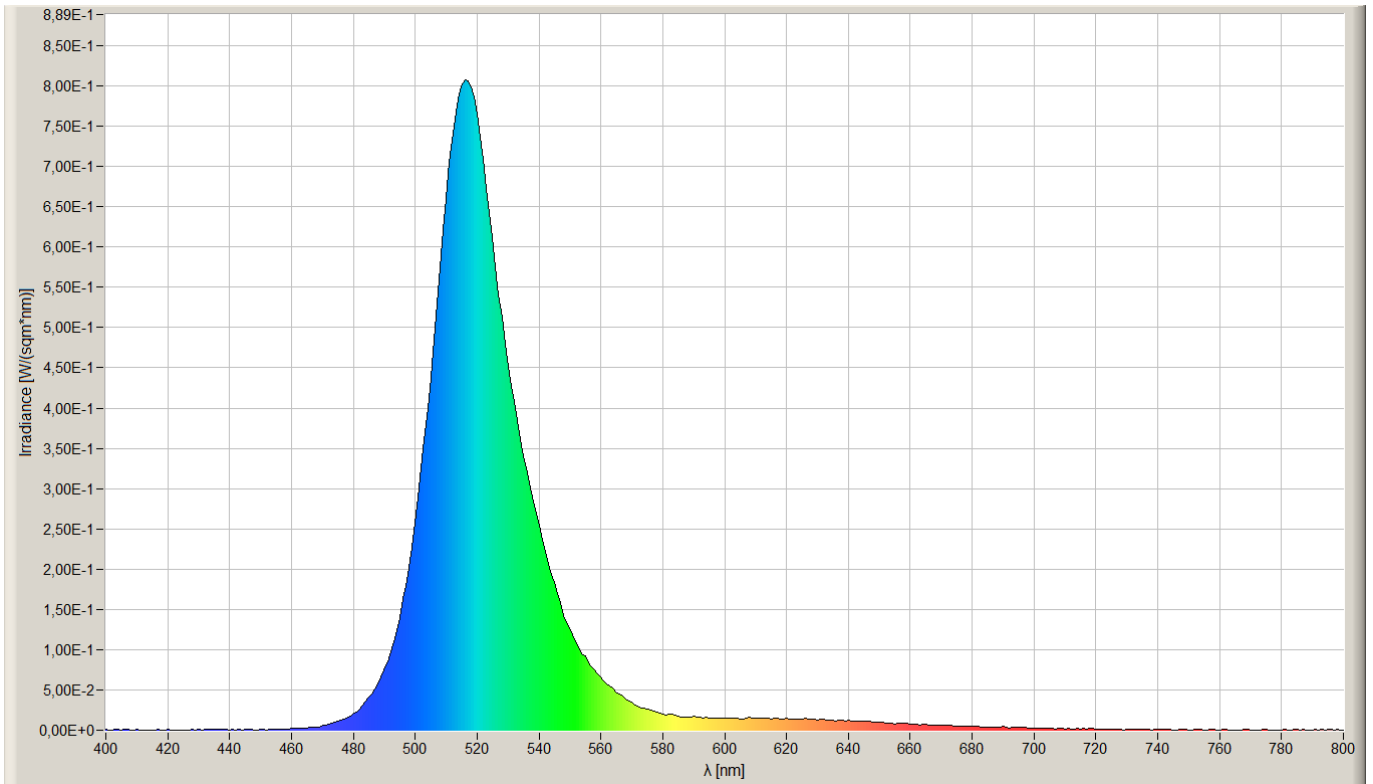
Directives - standards - certificates

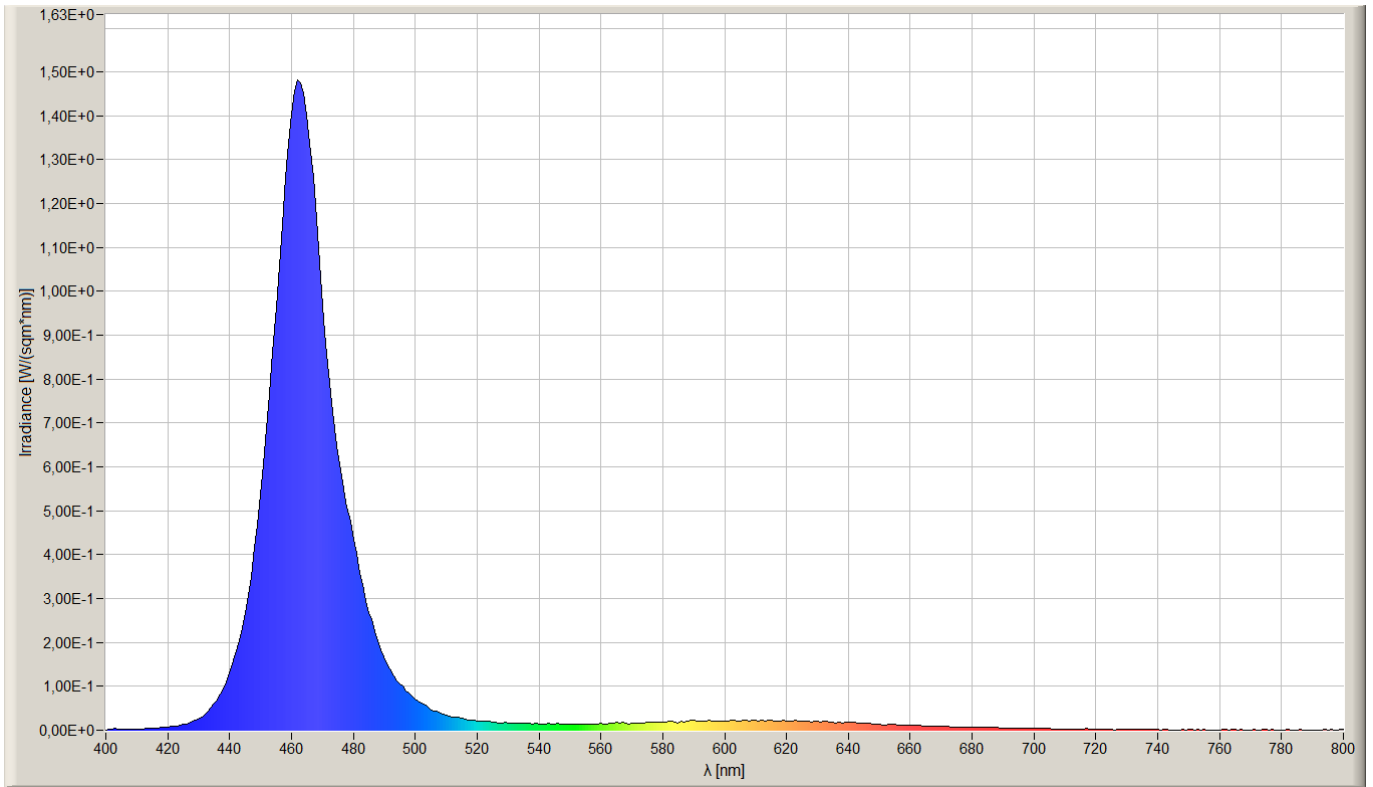
Directives RoHS
CE

Safety standards EN60598-1
EN62031
IEC62471

Measurement results







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