SuperlightingLED FSLRGBWW-24V-5050-560X12

24VDC Highest Density 5-in-1 5050 RGBWW LED Strip User Manual

Model: FSLRGBWW-24V-5050-560X12 | Brand: SuperlightingLED

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your 24VDC Highest Density 5-in-1 5050 RGBWW LED Strip. This 16.4ft (5m) LED strip is designed to produce thousands of vivid colors and tunable white light (Warm White to Daylight), making it ideal for various indoor lighting applications.

Image: The 16.4ft (5m) 5-in-1 RGBWW LED strip, coiled for packaging, showcasing its compact design and multi-color capabilities.

2. Safety Information

Please read all safety instructions carefully before installation and use. Failure to follow these instructions may result in electric shock, fire, or other hazards.

- Ensure the power supply is disconnected before any installation or maintenance.
- Use only a 24VDC power supply compatible with the strip's wattage requirements (minimum 150W for 16.4ft).
- This product is rated IP20 and is **non-waterproof**. It is intended for indoor use only. Avoid exposure to moisture or high humidity.
- Do not bend the LED strip excessively. Avoid bending more than 2 inches at any point to prevent damage to the PCB or LEDs.
- Do not connect the LED strip directly to AC power.
- Keep out of reach of children.

3. Package Contents

Verify that all items listed below are included in your package:

- 1x 16.4Ft (5m) 5-in-1 RGBWW LED Strip
- 1x Board-to-Board LED Connector
- 1x Board-to-Wire LED Connector

4. Setup and Installation

4.1. Pre-installation Checks

Before permanent installation, unroll the LED strip and connect it to a compatible 24VDC power supply and an RGBWW/RGBCCT controller (sold separately) to test its functionality. Ensure all LEDs illuminate correctly and respond to color and dimming commands.

4.2. Cutting the LED Strip

The LED strip can be cut to your desired length. Each cutting point is marked every 7 LEDs (62.5mm / 2.46 inches). Always cut along the designated center line to avoid damaging the PCB.

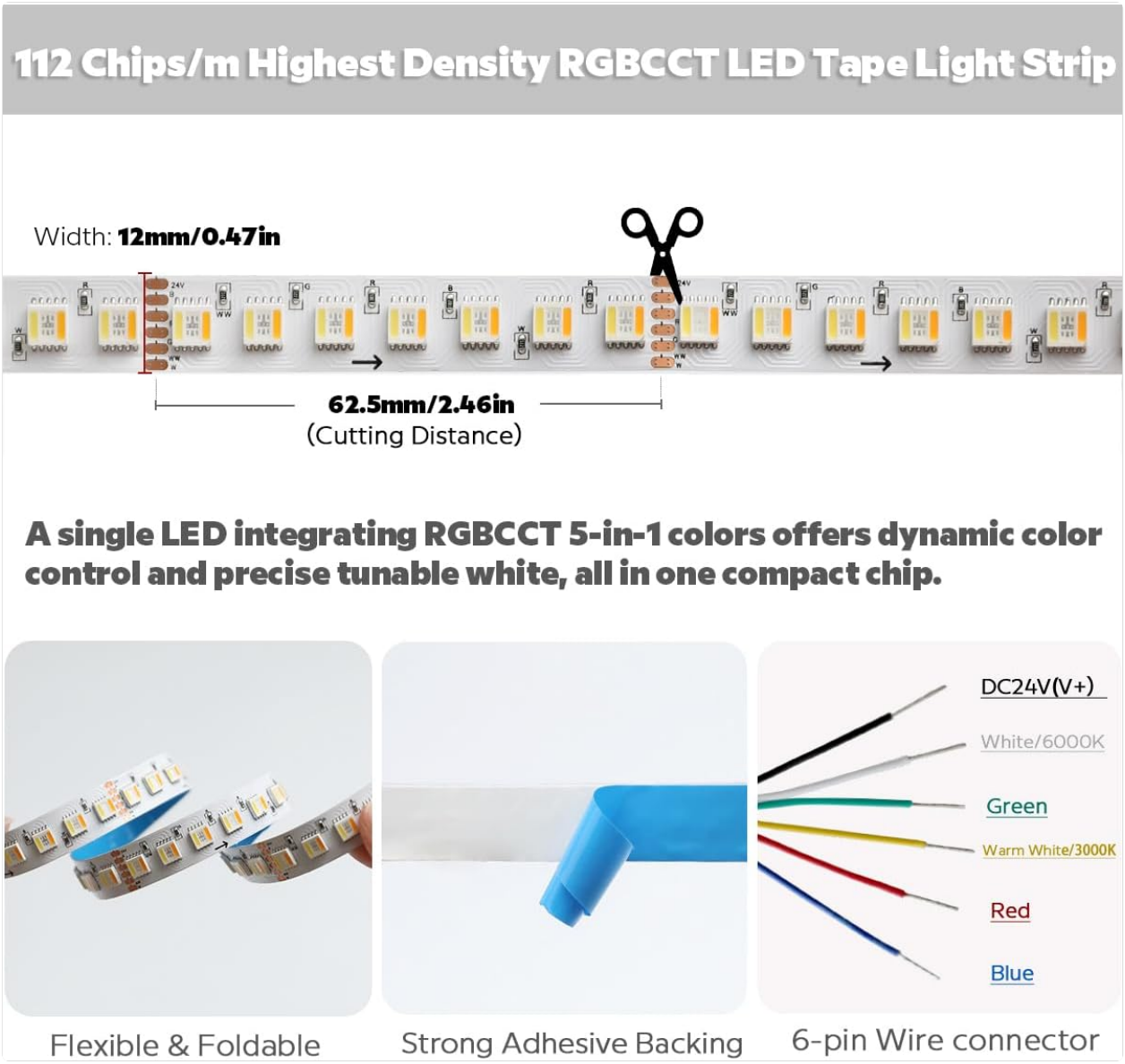
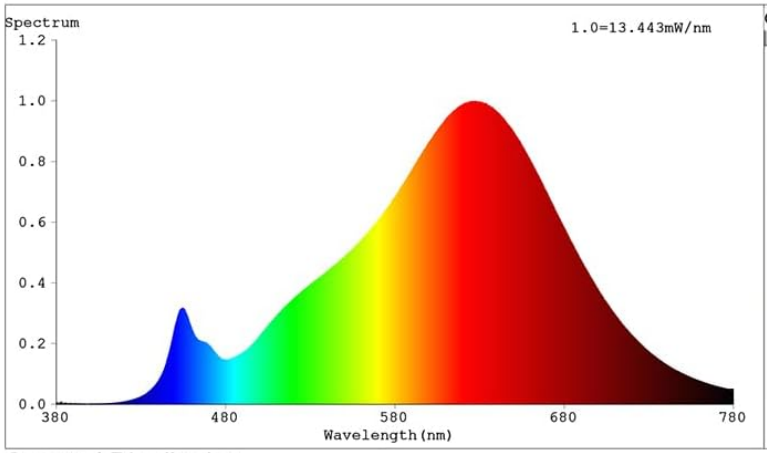


Image: Detailed diagram illustrating the 12mm (0.47in) width, 62.5mm (2.46in) cutting distance, and the 5-in-1 RGBCC LED chip structure. It also shows the flexible nature of the strip, strong adhesive backing, and the 6-pin wire connector.

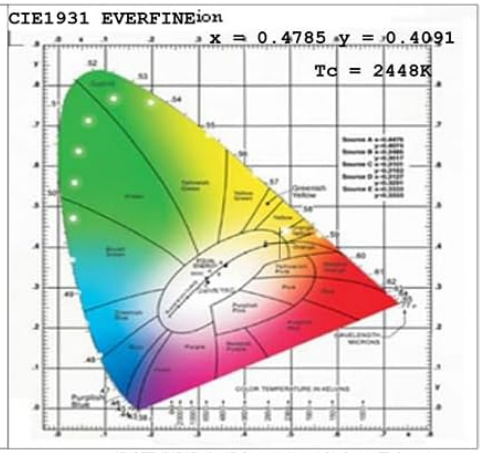
4.3. Connecting the LED Strip

This LED strip requires a 24VDC power supply and an RGBWW/RGBCCT controller for operation. These components are not included and must be purchased separately.

Spectroradiometric Parameters



Spectral Distribution



CIE1931 Chromaticity Diagram

CIE Color Parameters:

Chromaticity Coordinate: x=0.4785 y=0.4091/u'=0.2753 v'=0.5296(duv=-1.66e-03)

CCT:Tc= 2448K Prcp WaveL: dλ=586.1nm Purity=66.4%

Peak WaveL:λp=626nm Half Width: Δλp=135.2nm Ratio:R=30.6% G=67.5% B=1.9%

Render Index:Ra=92.5 **Color You Can Trust – CRI 90+**

R1 =93	R2 =98	R3 =98	R4 =92	R5 =93	R6 =97	R7 =90	
R8 =80	R9 =59	R10=93	R11=93	R12=86	R13=95	R14=99	R15=89

LEVEL: WHITE:OUT

Photo Parameters:

Flux = 561.9 lm Eff. : 92.11 lm/W Fe = 2.102 W

Electrical parameters:

V = 24.00 V I = 0.2542 A P = 6.101 W PF = 1.000

Image: A wiring diagram showing how to connect the RGBCC LED strip to an RGBCC controller and a 24VDC constant voltage power supply. It also depicts a remote control for the system.

Use the included connectors for easy installation without soldering:

- **Board-to-Board Connector:** Used to connect two cut sections of the LED strip directly.
- **Board-to-Wire Connector:** Used to connect a cut section of the LED strip to wires, typically for connecting to a controller or power supply.

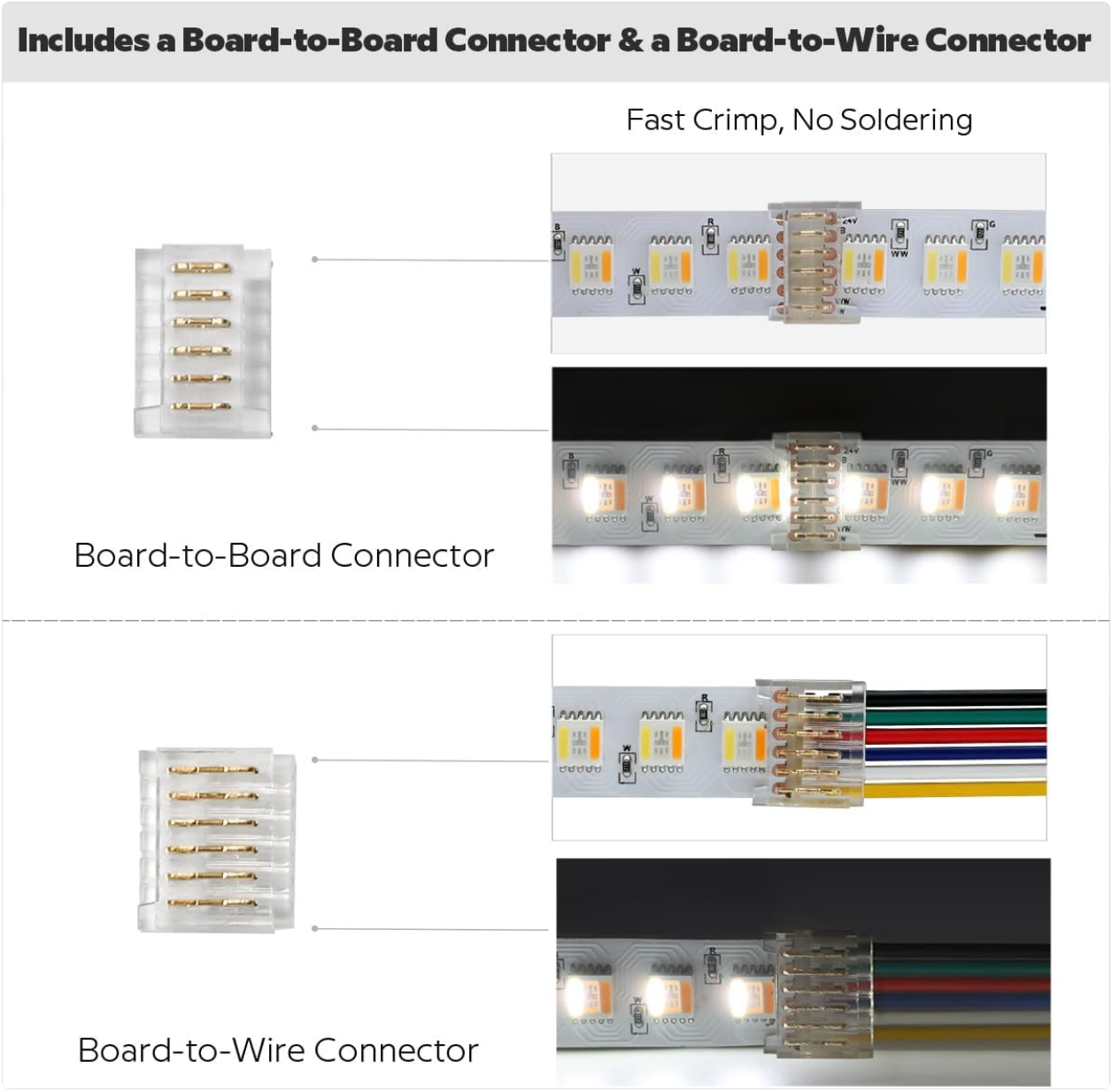


Image: Visual representation of the board-to-board connector and the board-to-wire connector, demonstrating their use for connecting LED strip segments without soldering.

4.4. Mounting the LED Strip

The LED strip features an adhesive backing for easy mounting on clean, dry, and smooth surfaces. Peel off the protective layer and firmly press the strip onto the desired location. Ensure the surface is free of dust, grease, or moisture for optimal adhesion.

5. Operating Instructions

Once properly installed and connected to a compatible RGBWW/RGBCCT controller, you can control the LED strip's functions.

5.1. Color Control (RGB+CCT)

The 5-in-1 design allows for a wide spectrum of colors and tunable white light:

- **RGB Colors:** Access thousands of vibrant colors for atmospheric and entertainment lighting.
- **Tunable White (CCT):** Adjust the white light from Warm White (approx. 2800K) to Daylight (approx. 6500K) to suit different moods and tasks.

Image: The LED strip showcasing its ability to produce different color temperatures of white light (6000K, 3000K) and primary RGB colors (Red, Green, Blue).

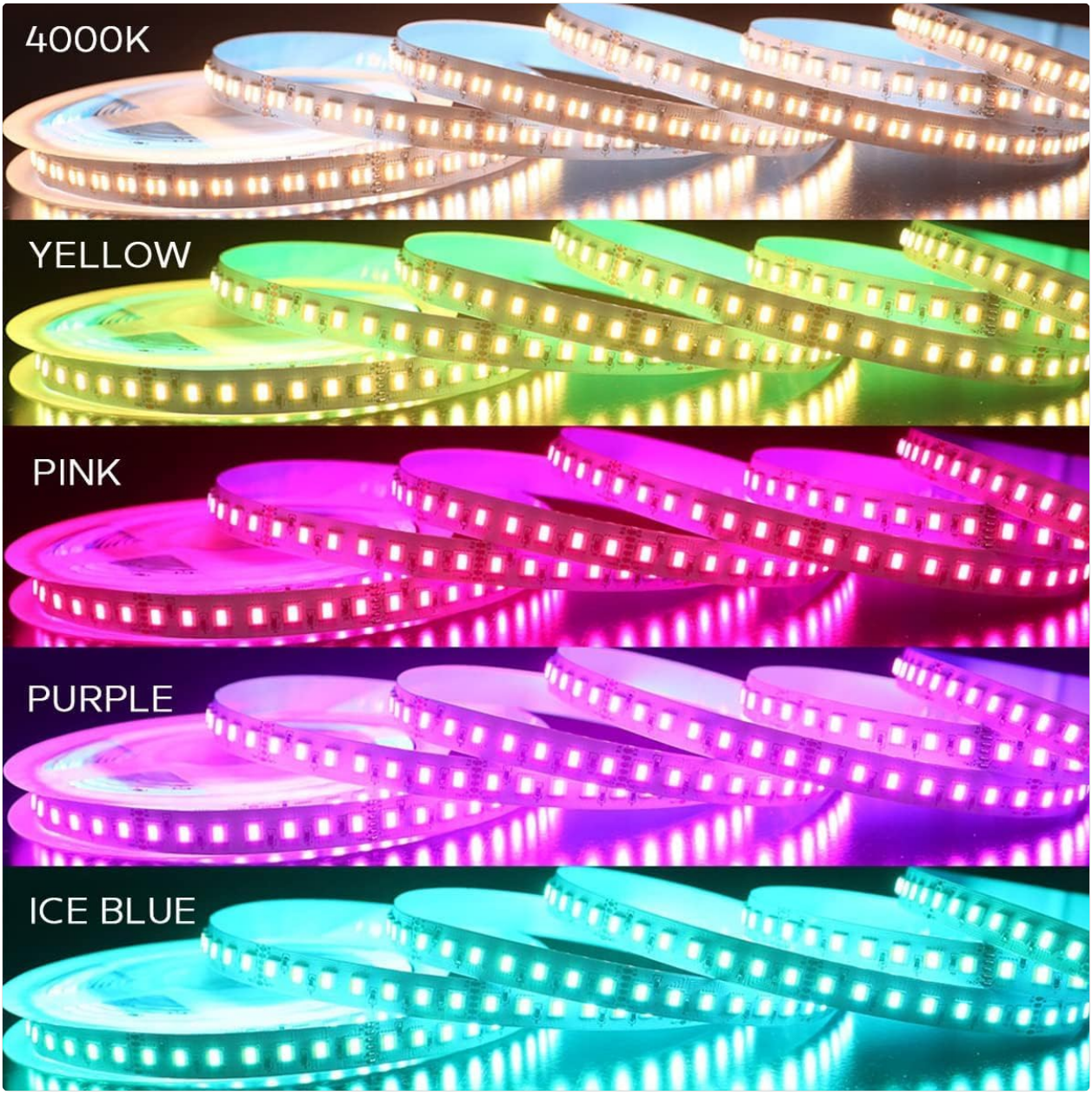


Image: The LED strip demonstrating additional color options, including 4000K white, yellow, pink, purple, and ice blue, highlighting its versatility.

5.2. Dimming

The LED strip is fully dimmable. Use your compatible RGBWW/RGBCCT controller to adjust the brightness level to your preference.

6. Maintenance

The LED strip requires minimal maintenance. To ensure longevity and optimal performance:

- **Cleaning:** Gently wipe the strip with a dry, soft cloth to remove dust. Do not use liquid cleaners or abrasive materials.
- **Inspection:** Periodically check the connections and the strip for any signs of damage or wear.
- **Environment:** Ensure the strip remains in a dry, indoor environment, away from direct heat sources or extreme temperatures.

7. Troubleshooting

Problem	Possible Cause	Solution
LED strip does not light up.	No power, incorrect wiring, faulty power supply/controller.	Check all connections. Ensure 24VDC power supply is connected and functioning. Verify controller is powered and correctly wired.
Some LEDs or sections do not light up.	Damaged section, poor connection at cut point, pin de-tinning.	Inspect the affected section for physical damage. Re-check connections at cut points. If a unit is damaged due to pin de-tinning, use the provided board-to-board connector to replace the damaged unit by cutting along the center line.
Colors are incorrect or not changing.	Incorrect controller type, faulty controller, wiring issue.	Ensure you are using an RGBWW/RGBCCT compatible controller. Check wiring to ensure correct color channels are connected.
Flickering lights.	Insufficient power supply, loose connection, faulty strip section.	Verify power supply wattage meets or exceeds the strip's requirements (130W for 16.4ft, recommend 150W+). Check all connections for looseness. If problem persists, isolate the flickering section.
Adhesive not sticking.	Surface not clean/dry, unsuitable surface material.	Ensure mounting surface is thoroughly cleaned and dry before application. For porous or uneven surfaces, consider using additional mounting clips or stronger adhesive tape.

8. Specifications

Feature	Detail
Item Type	5-In-1 Higher Density RGBWW LED Strip
LED Chip	Epistar Chip (SMD5050 5-IN-1 LED chip)
Working Temperature	-4°F (-20°C) ~ 122°F (50°C)
Storage Temperature	-40°F (-40°C) ~ 176°F (80°C)
Light Color	RGB+CCT (2800K-6500K color temperature)
Dimension	16.4ft/roll (5m/roll)
Cuttable Unit	Every 7 LEDs (62.5mm / 2.46in)
LED Quantity	112 LEDs per meter, 560 LEDs per roll
Input Voltage	24VDC
Strip Width	12mm (0.47in)
Working Power	26W/m, 130W /16.4ft Max
Lamp Luminous Flux	780 Lumen/Ft

Feature	Detail
PCB	4Moz
Beam Pattern	120 degree
Waterproof Rating	Non-waterproof IP20 (For Indoor Decor)
CRI	90+
Lifespan	50,000+ hours

9. Warranty and Support

For warranty information and technical support, please contact SuperlightingLED customer service through the platform where you purchased the product. Please have your order number and product model (FSLRGBWW-24V-5050-560X12) ready for faster assistance.
Additional resources for compatible controllers and power supplies can be found at:

- Remote Controller (B08CRCQ75W)
- Controller (B08CR5WY5X)
- 24V 200W Power Supply (B07PVRWFXD)