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› BTF-LIGHTING 5050 RGBW LED Tape Light User Manual

BTF-LIGHTING RGBWW45M505060LB30

BTF-LIGHTING 5050 RGBW LED Tape Light User Manual

Brand: BTF-LIGHTING

Model: RGBWW45M505060LB30

1. PRODUCT OVERVIEW

The BTF-LIGHTING 5050 RGBW LED Tape Light is a versatile lighting solution featuring 4 colors (Red, Green, Blue, and Warm White 2700K-3000K) integrated into a single 5050 SMD LED. This 5-meter (16.4ft) strip contains 300 LEDs (60 LEDs/meter) and offers a wide spectrum of 16 million colors, along with dedicated warm white light for enhanced illumination. It is designed for various indoor decorative and functional lighting applications.

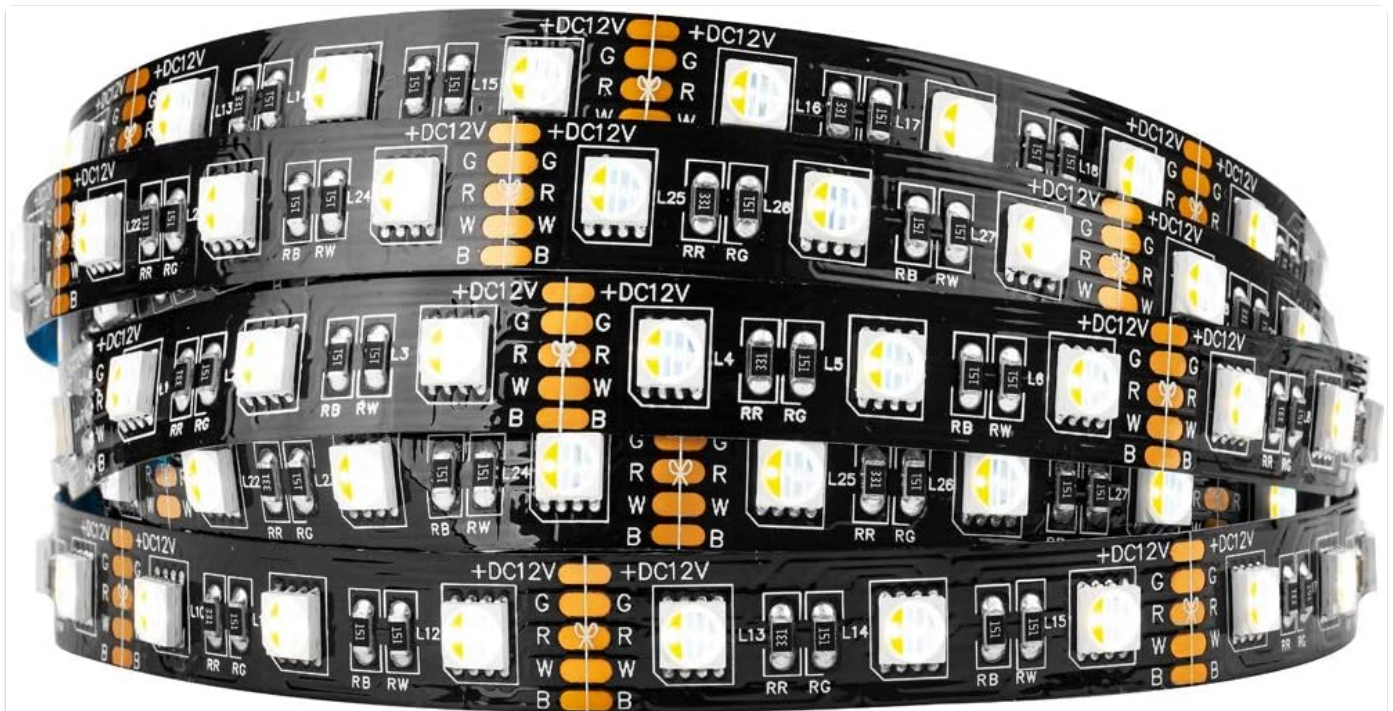
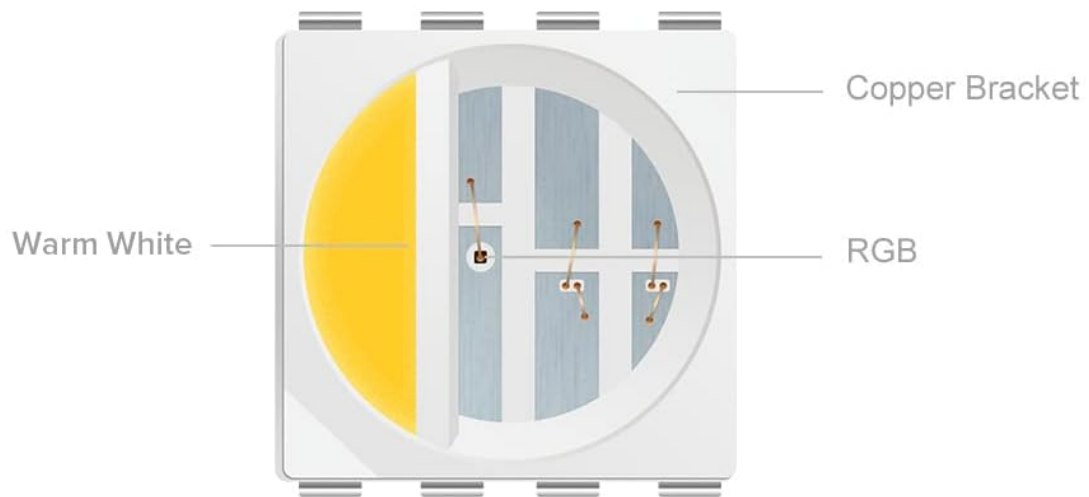


Image: The BTF-LIGHTING 5050 RGBW LED Tape Light, coiled for packaging, showcasing its flexible design and individual LED chips.

2. KEY FEATURES

- **4-in-1 RGBW LEDs:** Each SMD integrates Red, Green, Blue, and Warm White (2700K-3000K) chips, allowing for a vast array of colors and a dedicated warm white light.
- **High Density & Brightness:** Features 60 LEDs per meter, totaling 300 LEDs over 5 meters (16.4ft), providing bright and uniform illumination.
- **Dimmable & Durable:** Offers 1%-100% brightness adjustment and boasts a lifespan exceeding 50,000 hours.
- **Cuttable & Linkable:** The strip can be cut every 3 LEDs at designated marks, and features 5-Pin connectors for easy series connection.
- **Controller Compatibility:** Designed to work with various RGBW controllers, including Tuya Zigbee 3.0 (LM052, C04Z), Bluetooth APP (LM053), WiFi Alexa Google Home (WB5, C04W), and RF Remote (RC03RFB+1XC04RF) controllers. (Note: Controller and power supply are sold separately).
- **Versatile Applications:** Ideal for architectural lighting, home decoration (bedrooms, kitchens), bars, hotels, clubs, theaters, stores, and restaurants.

High-Quality LED



Flexible FPCB Design



IP30/IP65: Double-Sided Tape

Image: Detailed diagram illustrating the internal components of a high-quality 4-in-1 RGBW LED, highlighting the Warm White and RGB sections.

LED Contrast

4 COLORS IN 1

Warm White
(2700K)



RGB

5050 RGB+W



RGB



Warm White
(2700K)

Image: Visual comparison demonstrating the integrated 4-in-1 RGBW LED design versus separate RGB and Warm White LEDs, emphasizing the compact and efficient nature of the 4-in-1 chip.

3. SETUP INSTRUCTIONS

3.1 Package Contents

Before beginning installation, ensure all components are present:

- 1 x RGBW 4-in-1 LED Strip Light (5 meters / 16.4 feet)
- 1 x 5-Pin Connector

Note: A DC12V power supply and an RGBW controller are required for operation and are not included in this package. These must be purchased separately.

Package



Image: The product package contents, including the coiled LED strip and the accompanying 5-Pin connector.

3.2 Installation Steps

1. **Prepare Surface:** Ensure the installation surface is clean, dry, and smooth.
2. **Measure and Cut (Optional):** If a shorter length is needed, cut the LED strip only at the designated cutting marks (every 3 LEDs).
3. **Connect to Controller:** Connect the 5-Pin connector of the LED strip to your compatible RGBW controller. The PIN order is +12V-G-B-R-W. Ensure correct polarity.
4. **Power Connection:** Connect the RGBW controller to a suitable DC12V power supply. The recommended power supply is DC12V10A (120W).
5. **Mounting:**
 - For IP30 and IP65 versions: Peel off the backing from the double-sided adhesive tape on the back of the LED strip and firmly press the strip onto the desired surface.
 - For IP67 versions: This version does not have adhesive tape. Use appropriate mounting clips or channels (not included) to secure the strip.
6. **Test Functionality:** Before final placement, briefly connect the power and test the LED strip with your controller to ensure all colors and functions operate correctly.



Image: A detailed view of the LED strip, highlighting the connection points and the segments where it can be safely cut.

4. OPERATING INSTRUCTIONS

Once properly installed and connected to a compatible RGBW controller and DC12V power supply, the LED tape light can be operated via your chosen controller's interface (e.g., mobile app, remote control).

4.1 Color Control

The 4-in-1 RGBW LEDs allow for a wide range of lighting options:

- **RGB Colors:** Access millions of colors by mixing Red, Green, and Blue components.
- **Warm White:** Utilize the dedicated Warm White (2700K-3000K) chip for a pure, energy-efficient white light.
- **Mixed Colors:** Combine RGB with Warm White to create unique shades and pastels.

4.2 Brightness Adjustment

Adjust the brightness from 1% to 100% using your controller to suit your desired ambiance.

4.3 Important Usage Notes

- When lighting up a single color (Red, Green, or Blue), each LED consumes approximately 0.1W.
- When lighting up two colors (e.g., Red + Green), each LED consumes approximately 0.2W.
- When lighting up three colors (Red + Green + Blue), each LED consumes approximately 0.3W.
- When lighting up all four colors (Red + Green + Blue + Warm White), each LED consumes approximately 0.4W.
- It is not recommended to operate the strip at maximum brightness with Red + Blue + Green mixed white for extended periods, as this can lead to significant voltage drop and reduced performance.
- The strip is touchable and safe for children.

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Video: Demonstration of the BTF-LIGHTING 5050 RGBW LED strip light showcasing various color changes and brightness adjustments in a kitchen setting.



Image: A selection of compatible RGBW controllers, including Bluetooth, Zigbee, WiFi, and RF options, that can be used with the LED strip.

5. MAINTENANCE

The BTF-LIGHTING 5050 RGBW LED Tape Light is designed for long-term, low-maintenance operation. To ensure optimal performance and longevity:

- **Cleaning:** Gently wipe the surface of the LED strip with a dry, soft cloth if dust accumulates. Avoid using harsh chemicals or abrasive materials.
- **Environmental Conditions:**
 - Operating Temperature: -25°C to +50°C (-13°F to +122°F)
 - Storage Temperature: -40°C to +50°C (-40°F to +122°F)
- **Power Supply:** Always use a stable DC12V power supply within the recommended wattage range to prevent damage to the LEDs.
- **Avoid Overloading:** Do not connect more LED strip length than your power supply and controller can safely handle.

6. TROUBLESHOOTING

If you encounter issues with your LED tape light, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
LED strip does not light up.	No power, incorrect wiring, faulty controller/power supply.	Check power supply connection. Verify 5-Pin connector polarity (+12V-G-B-R-W). Test controller and power supply with another device if possible.
Some LEDs are not working or show incorrect colors.	Damaged LED segment, poor connection at cut point, controller issue.	Inspect the strip for physical damage. Ensure connections at cut points are secure. Reset or reconfigure the controller.
Colors are not accurate or appear washed out.	Incorrect controller settings, voltage drop over long runs, incompatible controller.	Calibrate colors via the controller app. Ensure the controller is an RGBW type. For long runs, consider injecting power at multiple points or using a higher gauge wire.
Strip flickers or dims unexpectedly.	Insufficient power supply, loose connection, overheating.	Ensure power supply wattage meets the strip's requirements (max 120W for 5m). Check all connections. Ensure adequate ventilation around the strip and controller.

7. PRODUCT SPECIFICATIONS

Specification	Detail
Model Number	RGBWW45M505060LB30
LED Type	5050 RGBW (4 colors in 1 LED)
LED Quantity	60 LEDs/meter (300 LEDs/5m)
Strip Length	5 meters (16.4 feet)
Input Voltage	DC12V
Power Consumption	0.1-0.4W/LED (6W-24W/meter, Total: 30W-120W)
Recommended Power Supply	DC12V10A (120W)

Specification	Detail
Color Temperature (Warm White)	2700K-3000K
PCB Width	12mm
PCB Color	Black
Waterproof Level	IP30 (Non-waterproof)
Operating Temperature	-25°C ~ +50°C
Storage Temperature	-40°C ~ +50°C
PIN Order	+12V-G-B-R-W

8. WARRANTY AND SUPPORT

For warranty information, technical support, or any inquiries regarding your BTF-LIGHTING product, please contact BTF-LIGHTING customer service directly. Refer to the product packaging or the official BTF-LIGHTING website for contact details. You can also visit the [BTF-LIGHTING Store on Amazon](#) for more product information and support resources.