BTF-LIGHTING FCOB-24V-840L-W-IP30-SPI

BTF-LIGHTING WS2811 Dual IC RGBCCT FCOB LED Strip User Manual

Model: FCOB-24V-840L-W-IP30-SPI

1. INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your BTF-LIGHTING WS2811 Dual IC RGBCCT FCOB LED Strip. This LED strip features addressable RGB and Tunable White (3000K-6000K) lighting, high density FCOB technology for uniform illumination, and is designed for indoor use.

Figure 1: BTF-LIGHTING WS2811 Dual IC RGBCCT FCOB LED Strip.

2. SAFETY INFORMATION

- **UL Listed:** This product is UL Listed, ensuring compliance with safety standards.

- **Voltage:** Operate only with a DC24V power supply. Using an incorrect voltage can damage the strip and pose a safety risk.

- **Indoor Use:** This LED strip has an IP30 rating, meaning it is non-waterproof and intended for indoor applications only. Avoid exposure to moisture or high humidity.

- **Heat Dissipation:** Ensure adequate ventilation around the LED strip, especially when operating at full brightness, to prevent overheating and prolong lifespan. Mounting in an aluminum channel is recommended for optimal heat dissipation.

- **Cutting:** Only cut the LED strip at designated cut marks to avoid damaging the circuit.

- **Coiling:** Do not operate the LED strip when coiled or rolled up, as this can lead to excessive heat buildup.
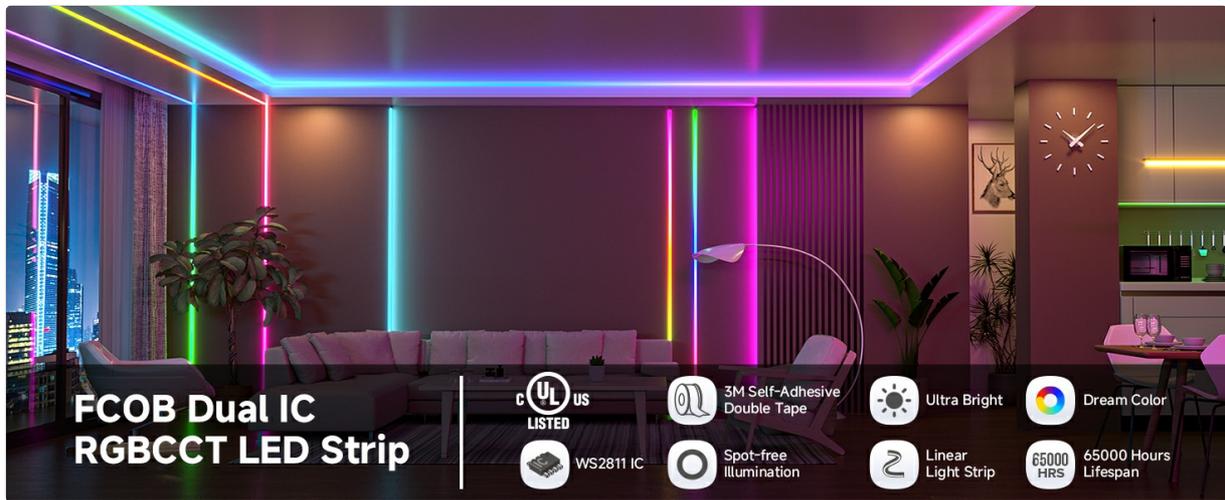
Figure 2: Safety and efficiency highlights, including UL Listing and 65,000+ hours lifespan.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1x 16.4FT WS2811 IC RGBCCT 840LED/m Light Strip
- 1X 3 pin JST connector

Note: A DC24V power supply and a compatible controller (e.g., SP530E or SP630E) are required for operation and are sold separately.

4. SETUP

4.1 Preparation

- Ensure the installation surface is clean, dry, and smooth for optimal adhesion.
- Unroll the LED strip completely before testing or installation.

4.2 Physical Installation

The LED strip features a strong self-adhesive backing for easy mounting. It is flexible and can be bent to fit various shapes and corners.

- **Adhesive Mounting:** Peel off the protective layer from the 3M adhesive tape on the back of the strip and firmly press the strip onto the desired surface.
- **Clips Fixed:** For added security, especially on uneven surfaces or for long-term installations, use mounting clips (sold separately) to secure the strip.
- **Cutting:** The strip can be cut at designated marks, approximately every 2.5 inches (62.5mm), to adjust its length. Ensure cuts are made precisely on the copper pads.
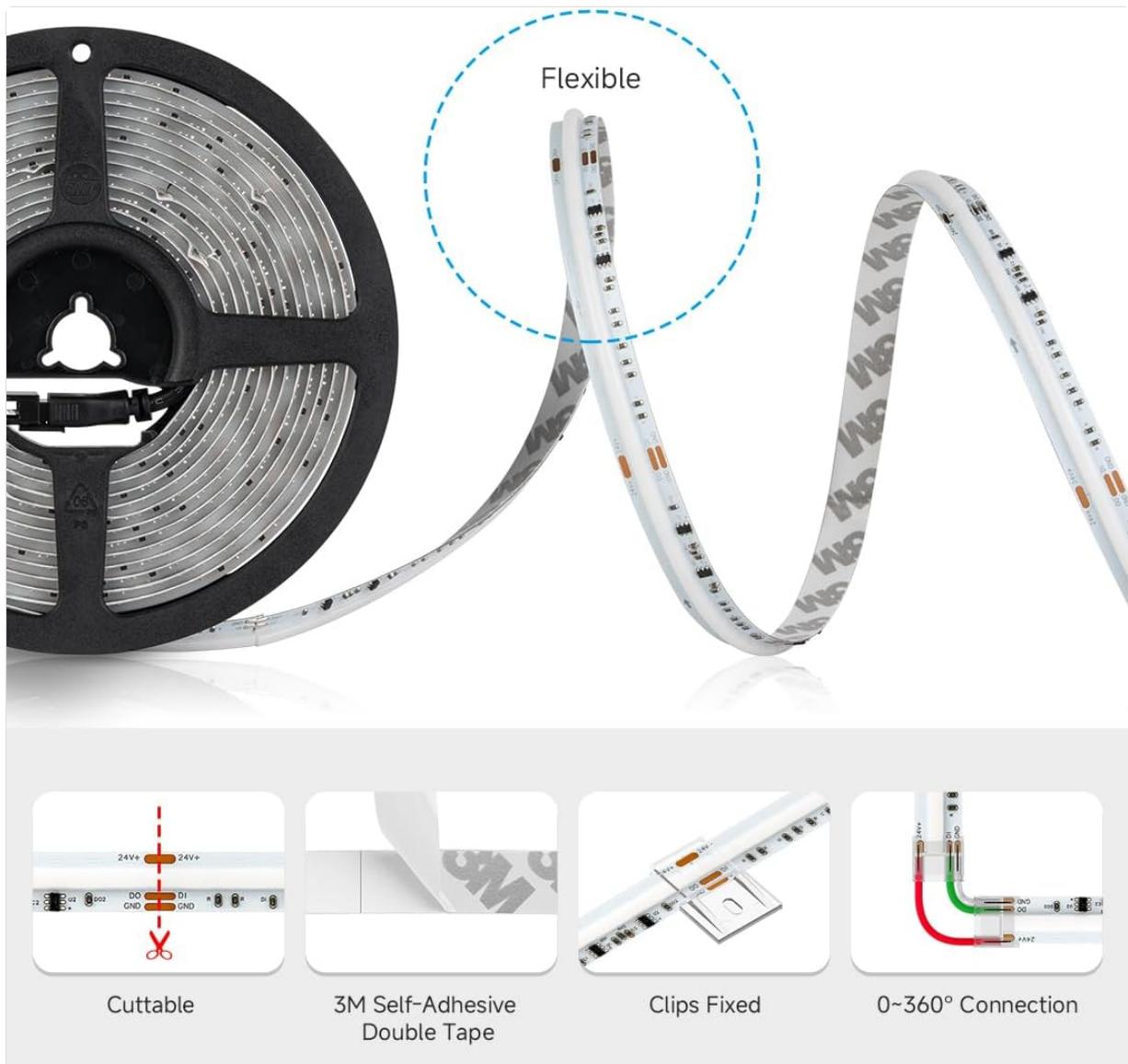
Figure 3: Features for physical installation: flexibility, cuttable sections, 3M adhesive, and clips.

4.3 Electrical Connection

This LED strip requires a DC24V power supply and a compatible addressable LED controller (e.g., SP530E or SP630E) for full functionality.

- **Connect to Controller:** Connect the 3-pin JST connector of the LED strip to the corresponding output on your compatible controller. Pay attention to the data direction arrow on the strip.

- **Power Supply:** Connect the DC24V power supply to the controller. Ensure the power supply capacity meets the strip's power requirements.

- **Series Connection:** Multiple strips can be connected in series. Ensure the total length and power draw do not exceed the controller and power supply limits.

- **Parallel Connection:** For longer installations or to maintain consistent brightness, use a signal amplifier and connect strips in parallel to the power supply.
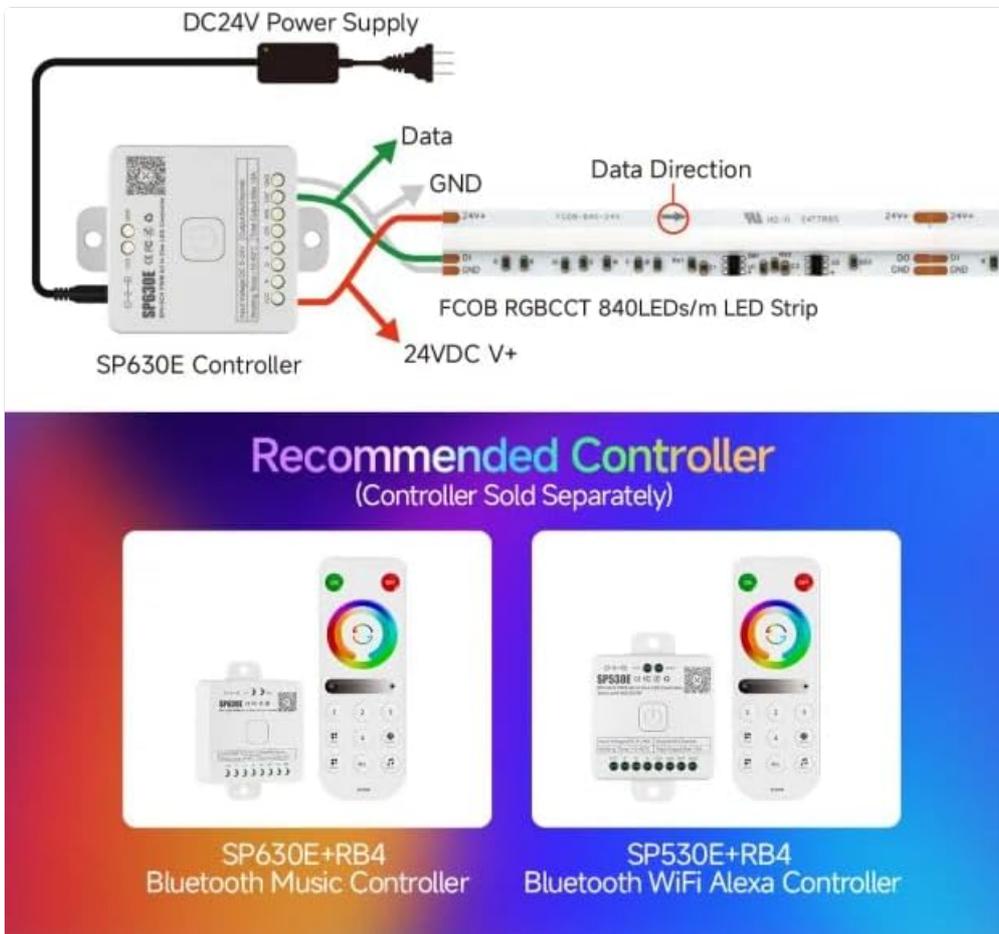
Figure 4: Recommended controller connection diagram (SP630E shown).

Figure 5: Example wiring diagram for connecting the LED strip.

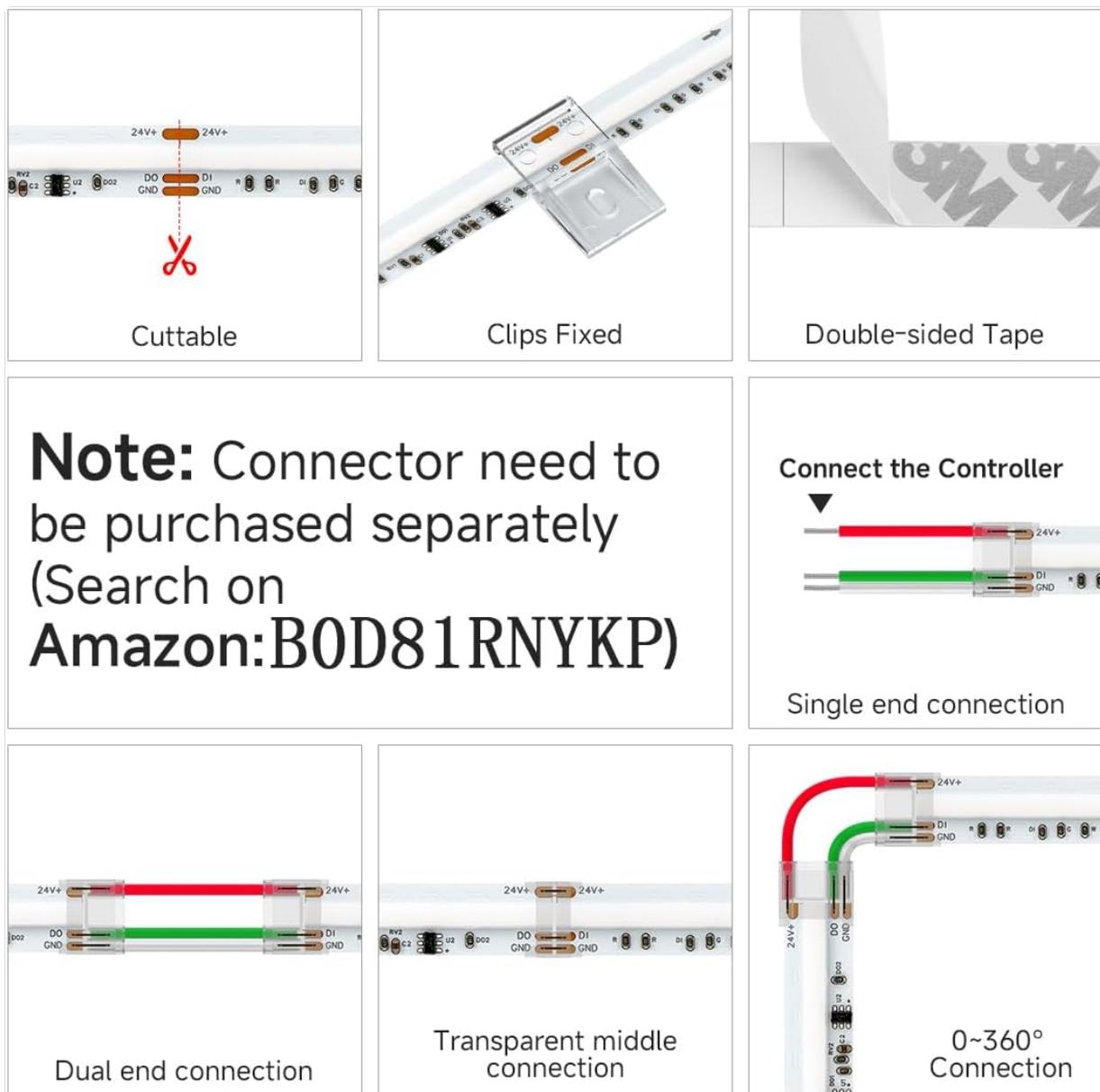|		
Cuttable	Clips Fixed	Double-sided Tape
Note: Connector need to be purchased separately (Search on Amazon:B0D81RNYKP)		Connect the Controller ▼ / Single end connection
Dual end connection	Transparent middle connection	0~360° Connection

Figure 6: Different connector types for LED strip installation.

5. OPERATING INSTRUCTIONS

This LED strip is designed for use with specific controllers (SP530E, SP630E) to unlock its full range of features.

- **Color Control:** The strip supports 16 million RGB colors and tunable white light from 3000K (warm white) to 6000K (cool white).

- **Chasing Effects:** When paired with a compatible controller, the dual external ICs (28 ICs/m, driving 60 LEDs per dual-chip) enable dynamic chasing, fade-in/fade-out, and other animated lighting effects.

- **Controller Usage:** Refer to your specific controller's manual (SP530E or SP630E) for detailed instructions on selecting colors, adjusting brightness, and activating various lighting modes.
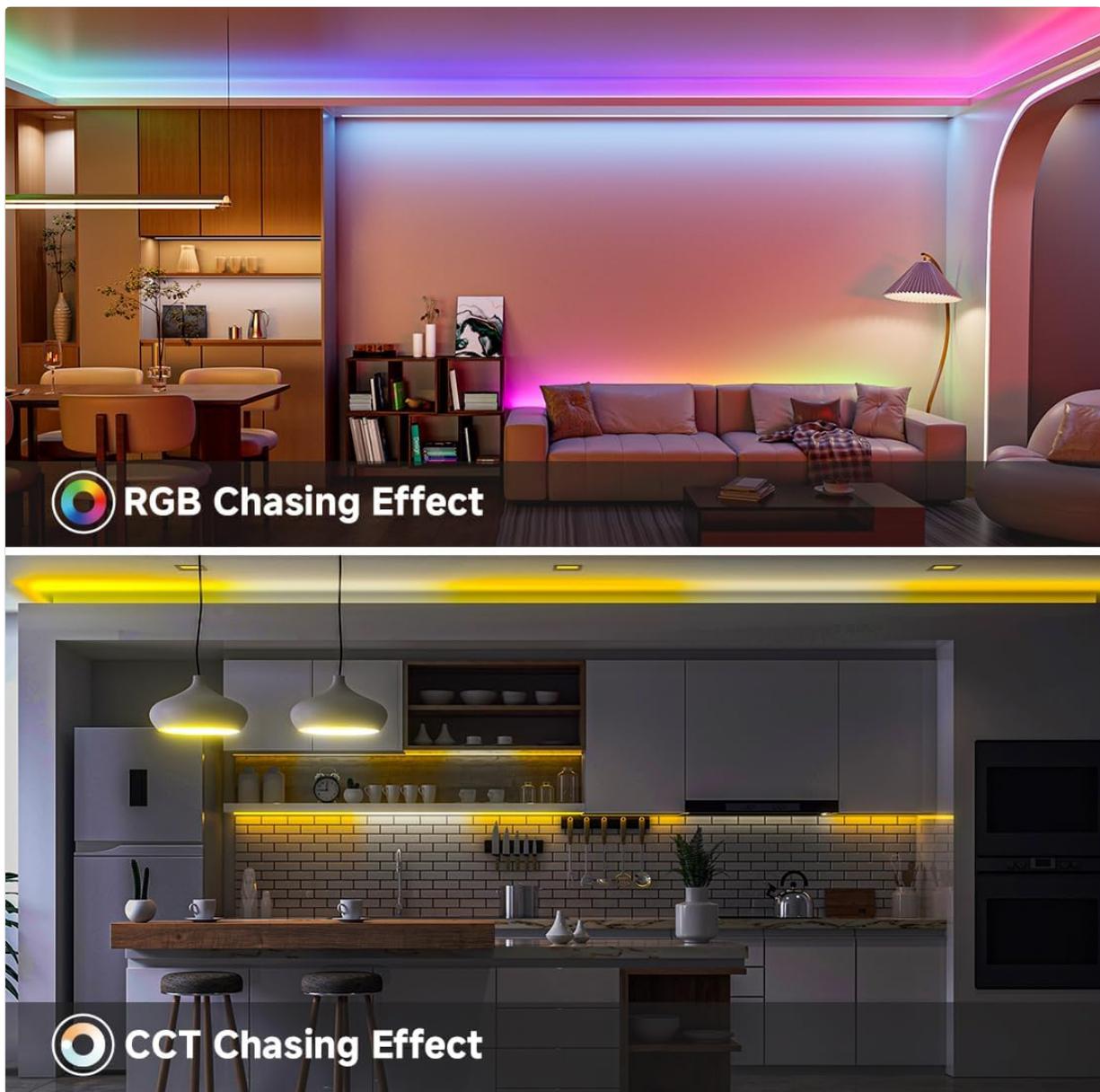
Figure 7: Examples of RGB and CCT chasing effects.

5.1 FCOB Technology Benefits

Flip-chip on board (FCOB) technology provides a high-density light-emitting unit, resulting in brighter, softer, and more uniform light compared to traditional SMD LED strips. This eliminates visible hotspots and creates a seamless glow.
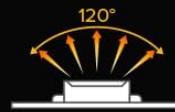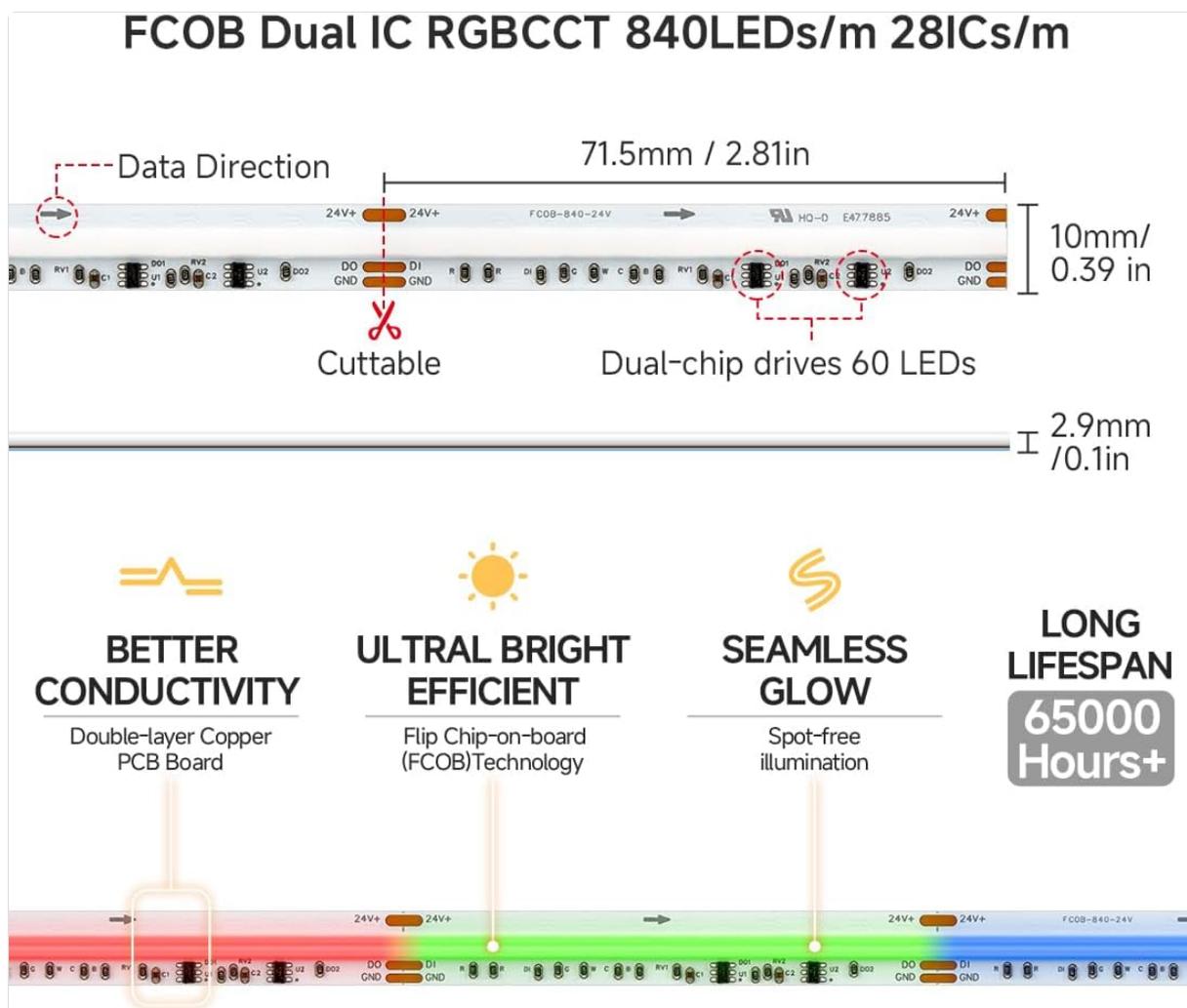
Figure 8: FCOB RGBCCT IC vs. SMD RGBCCT IC comparison.

Figure 9: FCOB Dual IC RGBCCT strip details and benefits.

6. MAINTENANCE

- **Cleaning:** Gently wipe the LED strip with a dry, soft cloth to remove dust. Do not use liquid cleaners or abrasive materials.
- **Heat Management:** To maximize the lifespan of the LED strip (rated for over 65,000 hours), ensure it is installed in a location with good airflow. For prolonged use at high brightness, consider mounting the strip in an aluminum profile to aid heat dissipation.
- **Inspection:** Periodically check connections for any signs of wear or damage.

7. TROUBLESHOOTING

- **Strip Not Lighting Up:**
  - Ensure the DC24V power supply is correctly connected and functioning.
  - Verify the controller is compatible (SP530E or SP630E) and properly connected to the strip.
  - Check the data direction arrow on the strip and ensure it aligns with the controller's output.
  - Confirm the controller is powered on and set to an active mode.
- **Inconsistent Colors or Effects:**
  - Ensure all connections are secure and free from corrosion.
  - If using WLED, ensure correct settings are applied: FW1906 GRBCW + RGB order + Swap WW & CW. Adjust length parameter as needed.

- Check for voltage drop on longer runs. Consider power injection or a signal amplifier for consistent performance.

  - **Strip Gets Hot:**

    - This is normal to some extent, especially at high brightness. However, excessive heat indicates poor heat dissipation.
    - Ensure the strip is not coiled or covered.
    - Consider mounting the strip in an aluminum channel to dissipate heat more effectively.

  - **Cut Section Not Working:**

    - Ensure the cut was made precisely on the designated copper pads.
    - Verify the connector used for the cut section is properly installed and making good contact.

8. SPECIFICATIONS

Feature	Detail
Model Number	FCOB-24V-840L-W-IP30-SPI
Brand	BTF-LIGHTING
Light Source Type	LED (FCOB)
LED Type	WS2811 Dual IC RGBCCT
LED Density	840 LEDs/meter
IC Density	28 ICs/meter (Dual-chip drives 60 LEDs)
Length	16.4 Feet (5 meters)
Width	10mm (0.39 inch)
Voltage	DC24V
Color Temperature	3000K-6000K (Tunable White)
Light Color	Multicolor (RGB) + Tunable White
Ingress Protection (IP) Rating	IP30 (Non-waterproof)
Cuttable Interval	Every 2.5 inches (62.5mm)
Lifespan	Over 65,000 hours
Special Features	Addressable WS2811 IC Chip, Chasing LED Strip, Dimmable and Flexible, Uniform Rainbow Color

9. WARRANTY AND SUPPORT

BTF-LIGHTING provides a **12-month worry-free warranty** for this product. For troubleshooting, replacement, or any questions regarding purchase or installation, please contact BTF-LIGHTING customer service. They offer 24/7 support to assist you.
For further assistance, please visit the BTF-LIGHTING Store on Amazon or refer to the contact information

provided with your purchase.

10. PRODUCT VIDEO

Your browser does not support the video tag.

Video 1: Product demonstration of the BTF-LIGHTING WS2811 Dual IC RGBCCT FCOB LED Strip.

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