BTF-LIGHTING FCOB-24V-784L-W-IP66-SPI

BTF-LIGHTING FCOB IP66 COB LED Strip WS2814 IC RGBW 4000K 16.4FT User Manual

Model: FCOB-24V-784L-W-IP66-SPI

1. Introduction

This manual provides instructions for the BTF-LIGHTING FCOB IP66 COB LED Strip WS2814 IC RGBW 4000K 16.4FT. This flexible, high-density LED strip features addressable WS2814 ICs, offering vibrant RGB colors and natural white light at 4000K. Its IP66 waterproof rating makes it suitable for various indoor applications, including damp environments. A compatible controller (sold separately) is required for operation.

2. Product Features

- **Addressable WS2814 IC:** Built-in WS2814 ICs (14 ICs/meter), with each IC controlling 56 LEDs. This allows for advanced lighting effects such as chasing, fading, and gradient transitions for both RGB and the dedicated natural white light.
- **FCOB Technology:** Utilizes Flip Chip on Board (FCOB) technology for uniform, dot-free illumination and a wide 180-degree beam angle, providing smooth and consistent light output.
- **RGBW Color Spectrum:** Offers a full range of RGB colors plus a dedicated 4000K natural white light, enhancing color richness and versatility.
- **IP66 Waterproof Rating:** Designed with heat-shrink tubing, providing resistance against dust and light water splashes, making it suitable for damp indoor areas like bathrooms or kitchens.
- **Flexible and Cuttable:** The LED strip is highly flexible for easy installation around corners and curves. It can be cut at designated marks every 2.8 inches (71mm) to fit specific project lengths.
- **High Density:** Features 784 LEDs per meter, ensuring bright and continuous light.

- **DC24V Operation:** Requires a DC24V power supply for optimal performance.
- **10mm Width:** Compact design for discreet installation.

Image: Comparison showing the uniform light of FCOB WS2814 IC compared to the visible dots of SMD WS2814 IC.

Image: Diagram highlighting the benefits of the upgraded WS2814 IC RGBW COB LED Strip, including better heat dissipation, reduced power consumption, and smooth continuous light without dark spots.

Image: Visual comparison demonstrating the wider 180-degree beam angle of BTF-LIGHTING FCOB LED strips versus the narrower 120-degree beam angle of standard SMD LED strips, showing more uniform light distribution.

3. Package Contents

The package includes the following items:

- 1x FCOB IP66 COB LED Strip (16.4FT / 5 meters)
- 1x 3PIN Male Connector
- 3x Fixed Clips
- 2x Wire to Strip Connectors

Note: A power supply and a compatible controller are NOT included and must be purchased separately.

4. Setup & Installation

4.1 Power Supply and Controller Requirements

This LED strip operates on DC24V. A compatible DC24V power supply and an addressable LED controller (e.g., WS2814 compatible) are required for functionality. Ensure the power supply capacity matches the total power consumption of your LED strip length.

4.2 Cutting and Connecting the LED Strip

The LED strip can be cut at designated cut marks, which are located every 2.8 inches (71mm). Use sharp scissors to ensure a clean cut. After cutting, use the provided wire-to-strip connectors or solder connections to re-establish electrical contact. If the cut ends are exposed to damp environments, they must be properly sealed to maintain the IP66 waterproof rating.

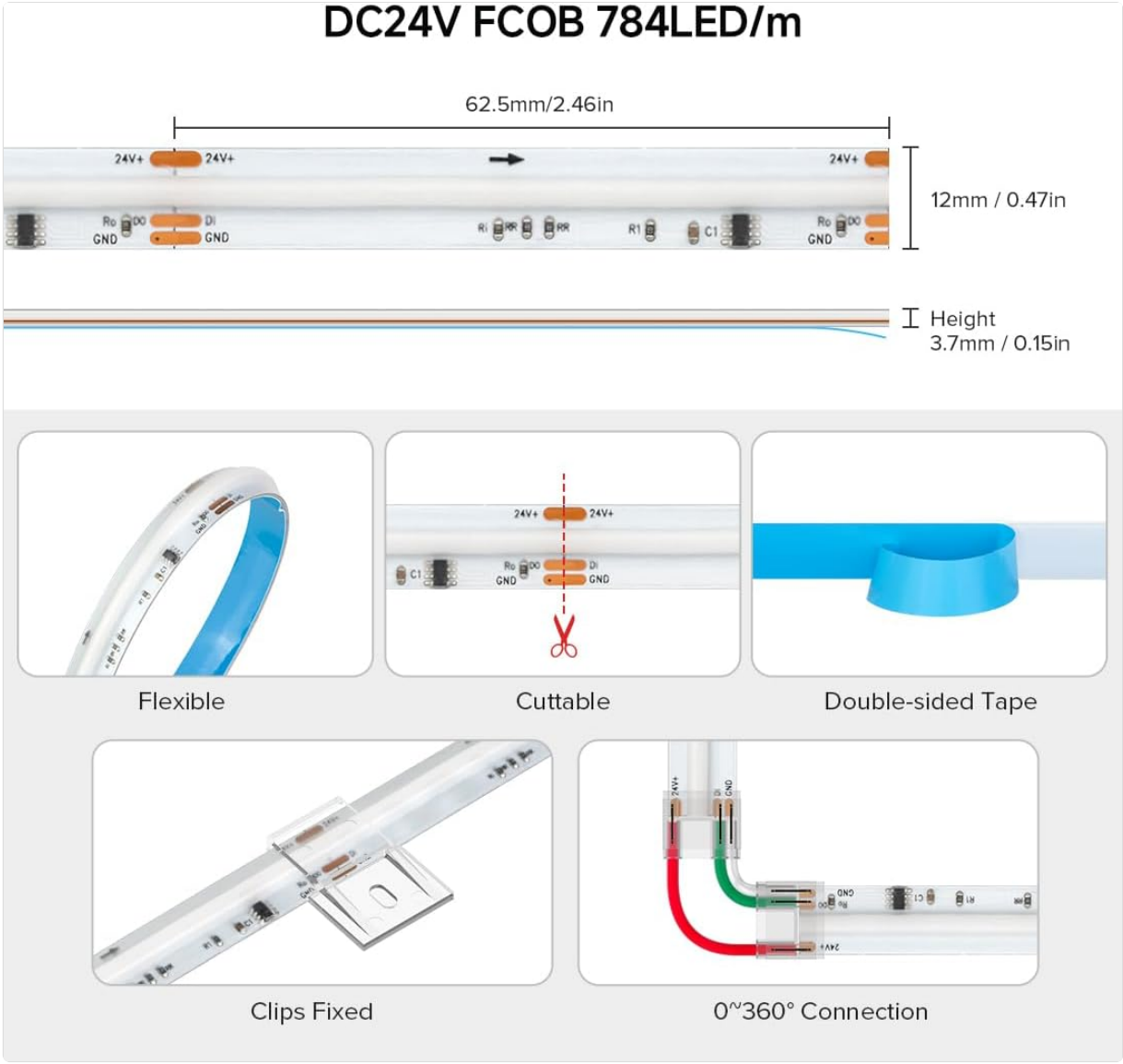

Image: Visual guide illustrating the LED strip's flexibility, designated cut points, application of double-sided tape, use of fixed clips, and connection methods.

4.3 Mounting the LED Strip

The LED strip features double-sided adhesive tape on its back for easy mounting on clean, dry surfaces. For additional security, especially on uneven surfaces or for long-term installations, use the included fixed clips. Ensure the surface is free of dust and grease before applying the adhesive.

Image: Hands demonstrating the application of the double-sided tape on the LED strip for mounting.

4.4 Wiring Diagram (Example)

Connect the LED strip to a compatible controller and a DC24V power supply. The WS2814 IC requires a data signal (DI) and ground (GND) connection from the controller, in addition to the 24V power. Follow the specific wiring instructions provided with your chosen controller.

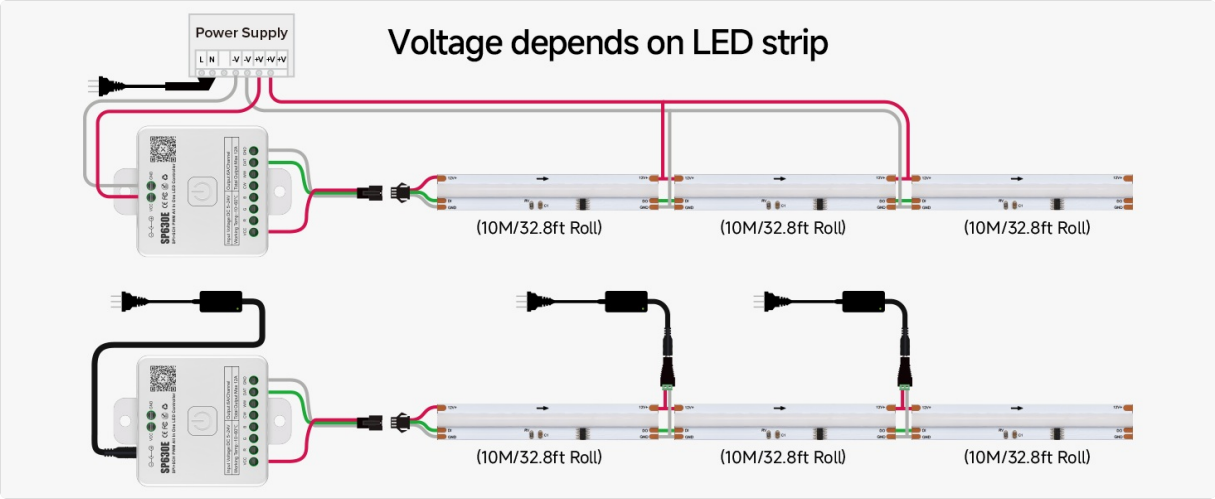

Image: Example parallel connection diagram showing how to connect multiple FCOB WS2814 RGBW IC LED strips to an SP530E WiFi Alexa Bluetooth Controller, signal amplifier, and power supply.

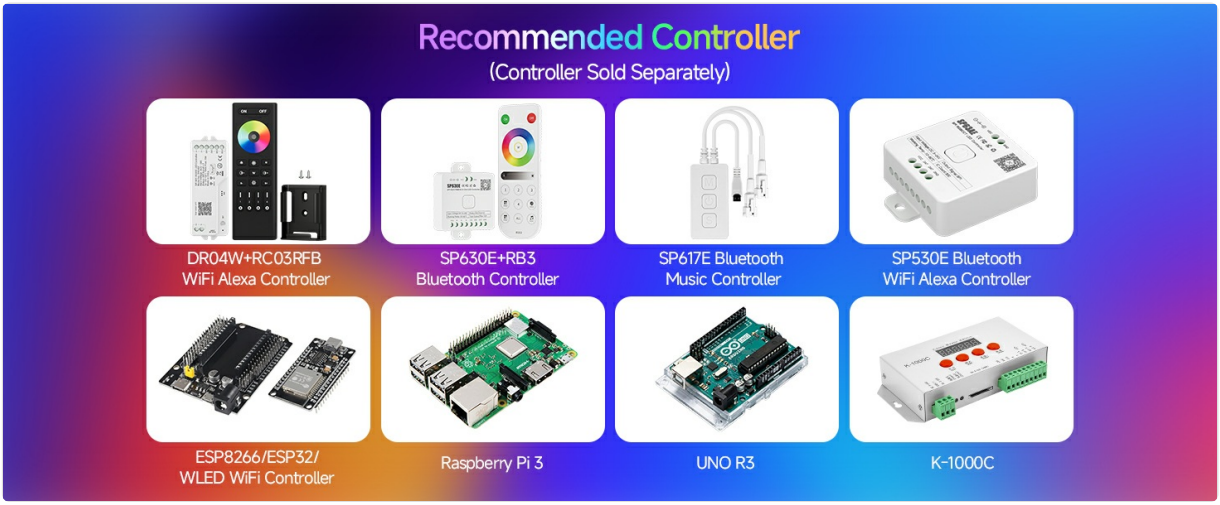

Image: Diagram illustrating how voltage depends on the LED strip length and the need for power injection for longer runs to prevent voltage drop.

5. Operating Instructions

The BTF-LIGHTING FCOB LED Strip requires a compatible addressable LED controller (sold separately) to function. Once connected to a power supply and controller, you can manage the lighting effects through the controller's interface or associated application.

5.1 Basic Functions

- **Color Control:** Adjust the RGB colors to create millions of hues. The dedicated 4000K natural white light can also be controlled independently or mixed with RGB.
- **Dynamic Effects:** Utilize the addressable WS2814 ICs to create various dynamic lighting effects such as color chasing, fading, gradient transitions, and more.
- **Dimming:** The strip is dimmable from 0% to 100% brightness via the controller.

- **Color Temperature:** Access different white light temperatures including 3000K Warm White, 4000K Natural White, and 6000K Cool White, depending on controller capabilities.

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Video: Demonstrates the FCOB WS2814 IC RGBW LED Strip's capabilities, including RGB chasing effects and various pure white light color temperatures (3000K Warm White, 4000K Natural White, 6000K Cool White), as well as individual color lights like Red, Green, Blue, Yellow, Pink, and Cyan. It also shows dimming functionality and highlights the bendable, cuttable, and adhesive features.

Image: Examples of the LED strip installed in various room settings, showcasing its dimmable RGBW lighting effects and ability to create different ambiances.

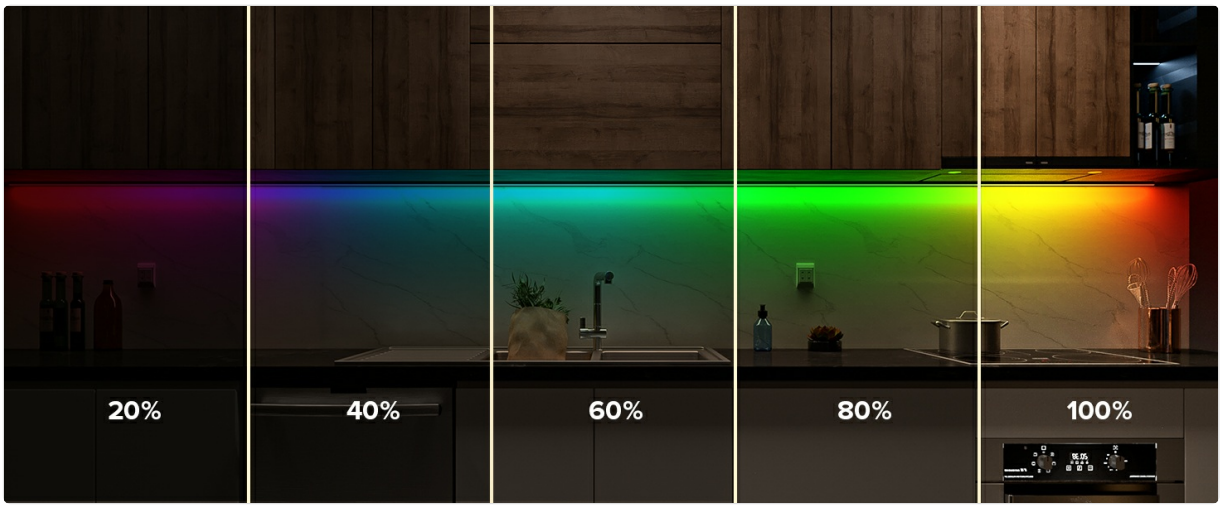

Image: A kitchen scene illustrating the LED strip's dimming capabilities, showing light levels from 20% to 100% brightness.

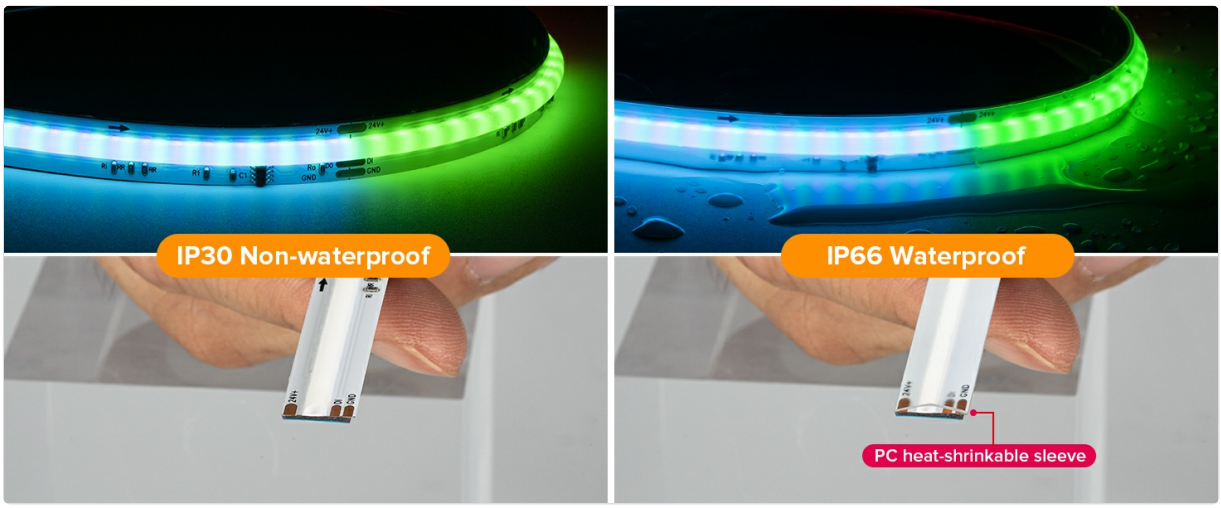

Image: A collage of various application scenes, including living rooms, bedrooms, kitchens, and commercial spaces, demonstrating the versatility of the LED strip.

6. Maintenance

- **Cleaning:** Gently wipe the LED strip with a soft, dry cloth to remove dust. Avoid using harsh chemicals or abrasive materials.
- **Connections:** Periodically check all connections to ensure they are secure and free from corrosion.
- **Waterproofing:** If the strip has been cut, ensure all exposed ends are properly sealed with appropriate waterproof sealant to maintain the IP66 rating, especially if used in damp environments.
- **Storage:** If storing the LED strip, keep it in a cool, dry place away from direct sunlight and extreme temperatures.

7. Troubleshooting

Problem	Possible Cause	Solution
LED strip does not light up.	No power, incorrect wiring, faulty power supply/controller.	◦ Ensure the DC24V power supply is connected and functioning. ◦ Verify all wiring connections (24V, GND, Data) are correct and secure. ◦ Check if the controller is powered on and configured correctly.
Colors are incorrect or inconsistent.	Incorrect controller settings (e.g., color order), data line interference.	◦ Adjust the color order settings in your controller software (e.g., WLED settings: WS2814 RGBW, Color Order: BRG, Swap: W & G, Auto-calculate white channel from RGB: Accurate). ◦ Ensure the data line is not excessively long or running parallel to power lines without proper shielding.

Problem	Possible Cause	Solution
Sections of the strip are dim or not working.	Voltage drop, damaged section, poor connection.	◦ For longer runs, consider injecting power at multiple points along the strip to compensate for voltage drop. ◦ Inspect the affected section for physical damage or loose connections.
Controller not responding.	Controller not powered, out of range, software issue.	◦ Ensure the controller has power. ◦ If using wireless control, check the distance and any obstructions. ◦ Restart the controller and its associated application.

8. Specifications

Feature	Detail
Model Number	FCOB-24V-784L-W-IP66-SPI
LED Type	FCOB WS2814 IC RGBW LED
IC Type	WS2814 (14 ICs/meter, 1 IC controls 56 LEDs)
Color	RGB + Natural White (4000K)
Length	16.4 Feet (5 meters)
LEDs per Meter	784 LEDs/m
Voltage	DC24V
Width	10mm
Cut Interval	2.8 inches (71mm)
Waterproof Rating	IP66 (Heat-shrink tubing)
Beam Angle	180 degrees
Average Life	65,000 Hours
Material	Plastic
Indoor/Outdoor Usage	Indoor (suitable for damp environments)

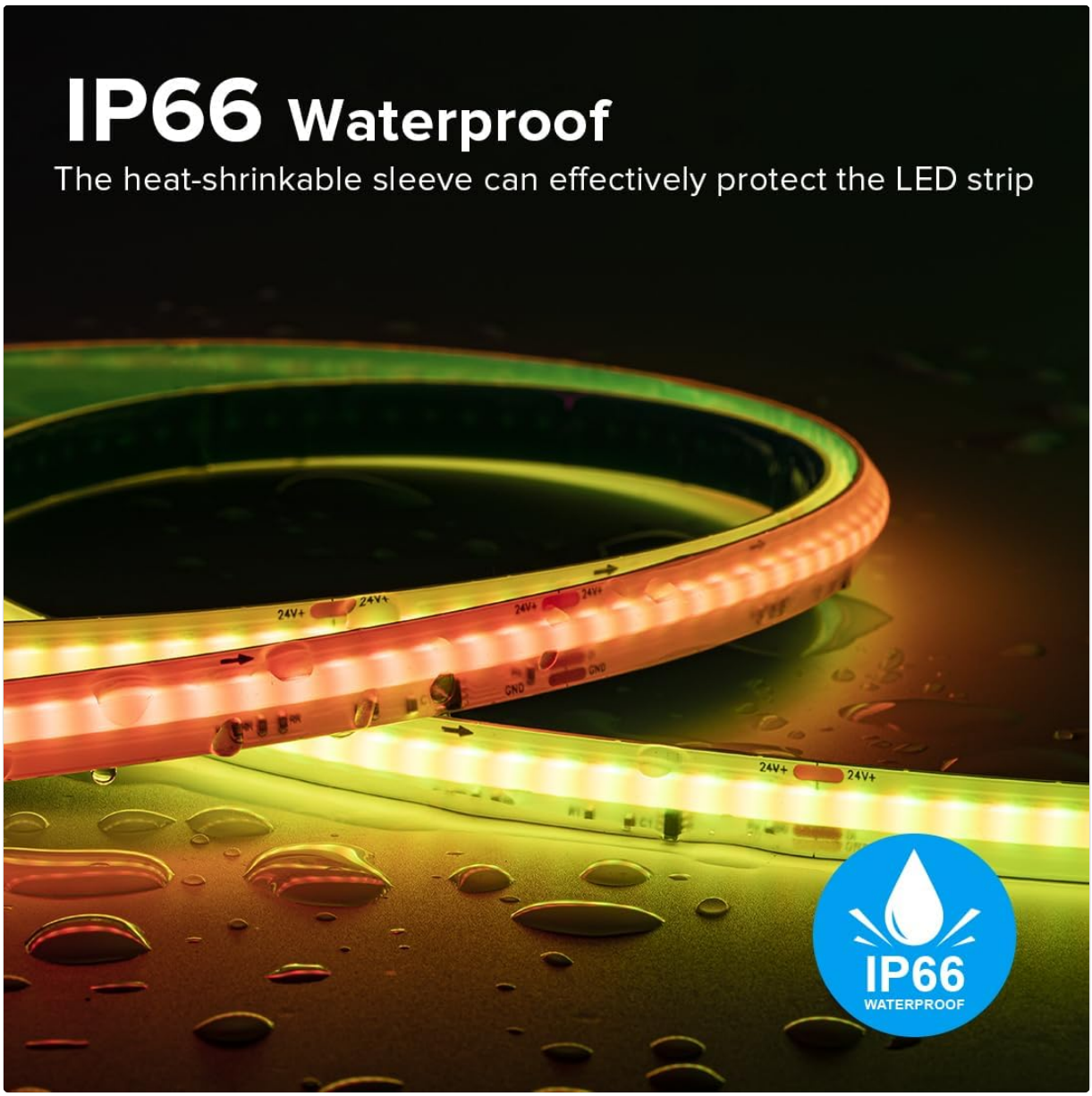

Image: Close-up view of the IP66 waterproof LED strip, showing its heat-shrinkable sleeve protection against water splashes.

Image: Visual comparison highlighting the difference between an IP30 non-waterproof LED strip and an IP66 waterproof LED strip with a PC heat-shrinkable sleeve.

9. Warranty & Support

For warranty information and technical support, please refer to the official BTF-LIGHTING website or contact your retailer. Keep your purchase receipt for any warranty claims.
Manufacturer: SHENZHEN BTF-LIGHTINGTECHNOLOGY CO.,LTD