

## BTF-LIGHTING SK68125M60RGBNWB30

# BTF-LIGHTING SK6812 RGBW LED Strip User Manual

Model: SK68125M60RGBNWB30 | Brand: BTF-LIGHTING

## 1. INTRODUCTION

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The BTF-LIGHTING SK6812 RGBW LED Strip is an advanced individually addressable lighting solution. It integrates four colors (Red, Green, Blue, and Natural White) into a single LED, offering enhanced color mixing and pure white illumination. This strip is designed for dynamic lighting effects and is compatible with a range of programmable controllers.

Key features include:

- **Individually Addressable LEDs:** Each LED can be controlled independently for color and brightness, allowing for complex lighting patterns and animations.
- **RGB + Pure White (4-in-1 LED):** Provides a wider color gamut and the ability to produce true white light, which is more energy-efficient than mixing RGB for white.
- **High Brightness and Color Depth:** Features 256 brightness levels and 32-bit color display for vibrant and smooth transitions.
- **Chainable Design:** Equipped with 3-pin JST-SM connectors for easy extension or cutting at designated points.
- **Versatile Compatibility:** Supports various programmable controllers such as K-1000C, SP630E, SP639E, SP617E, SP530E WiFi Alexa, and other DIY controllers.

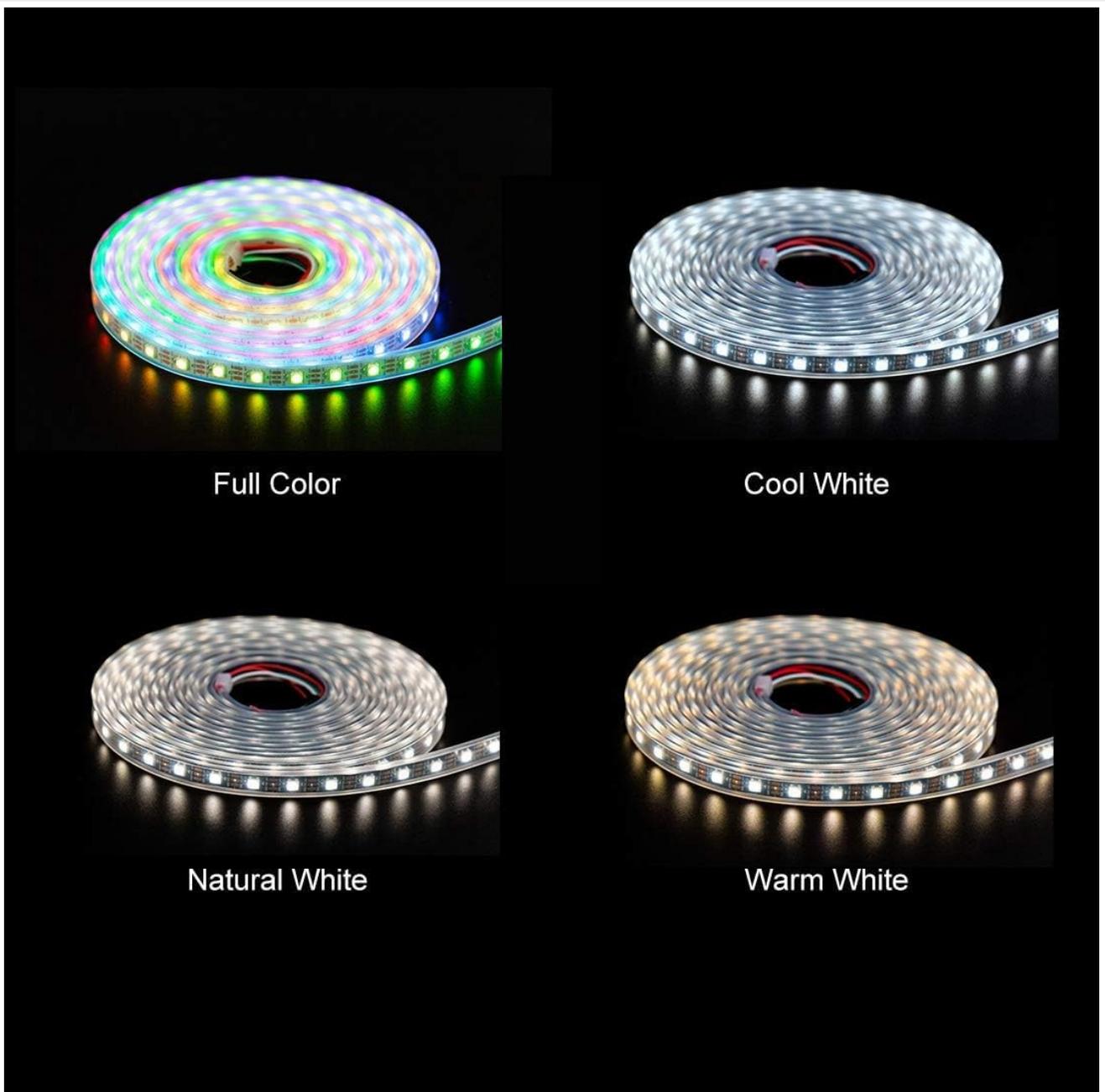


Figure 1: The SK6812 RGBW LED Strip displaying various colors including full RGB, cool white, natural white, and warm white.

# LED Contrast

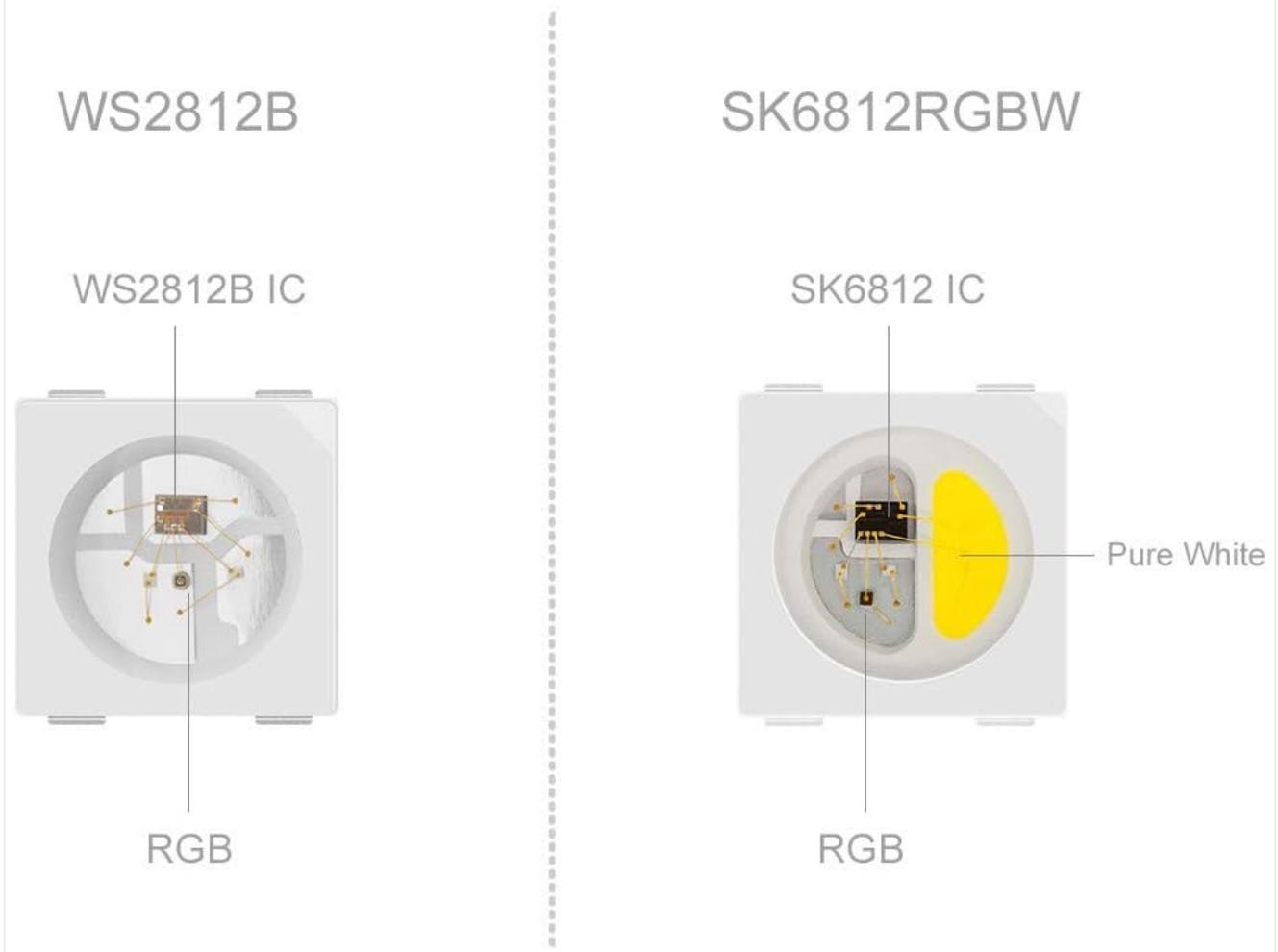


Figure 2: A comparison illustrating the internal structure of WS2812B and SK6812 RGBW LED chips, emphasizing the dedicated pure white LED in the SK6812 for improved white light quality.

## 2. WHAT'S IN THE BOX

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Your BTF-LIGHTING SK6812 RGBW LED Strip package includes:

- 1x SK6812 RGBW LED Strip (16.4ft, 60 pixels/m, 300 LEDs)
- 1x 3-pin JST-SM male connector

**Note:** A power supply and controller are **not** included and must be purchased separately.

# YOU MAY RECEIVE

NEW EDITION



Upgraded Reel



Upgraded Connectors

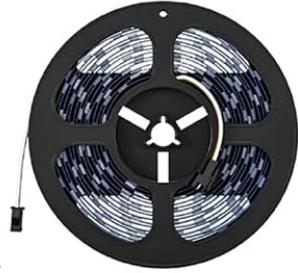
General-Purpose Connectors



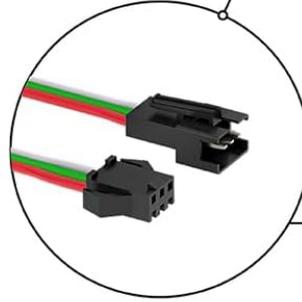
Product Accessories



Previous Version



Previous Version Reel



3Pin-JST SM Connector

Product Accessories



Figure 3: The typical contents of the LED strip package, including the LED strip on a reel, connectors, and a user manual.



Figure 4: A detailed view of the package contents, highlighting the 3-pin male connector and optional voltage-adding wire for power distribution.

### 3. SETUP INSTRUCTIONS

#### 3.1 Power Requirements

The SK6812 RGBW LED strip operates on **DC 5V**. A power supply with a recommended output of **DC 5V 10A (50W)** is required for optimal performance. Ensure your power supply can handle the total wattage of your LED strip configuration.

#### 3.2 Controller Compatibility

This LED strip requires an external controller for operation. Compatible controllers include, but are not limited to:

- K-1000C programmable controllers
- SP630E, SP639E, SP617E APP controllers
- SP530E WiFi Alexa controller
- Various DIY controllers (e.g., Arduino, Raspberry Pi)

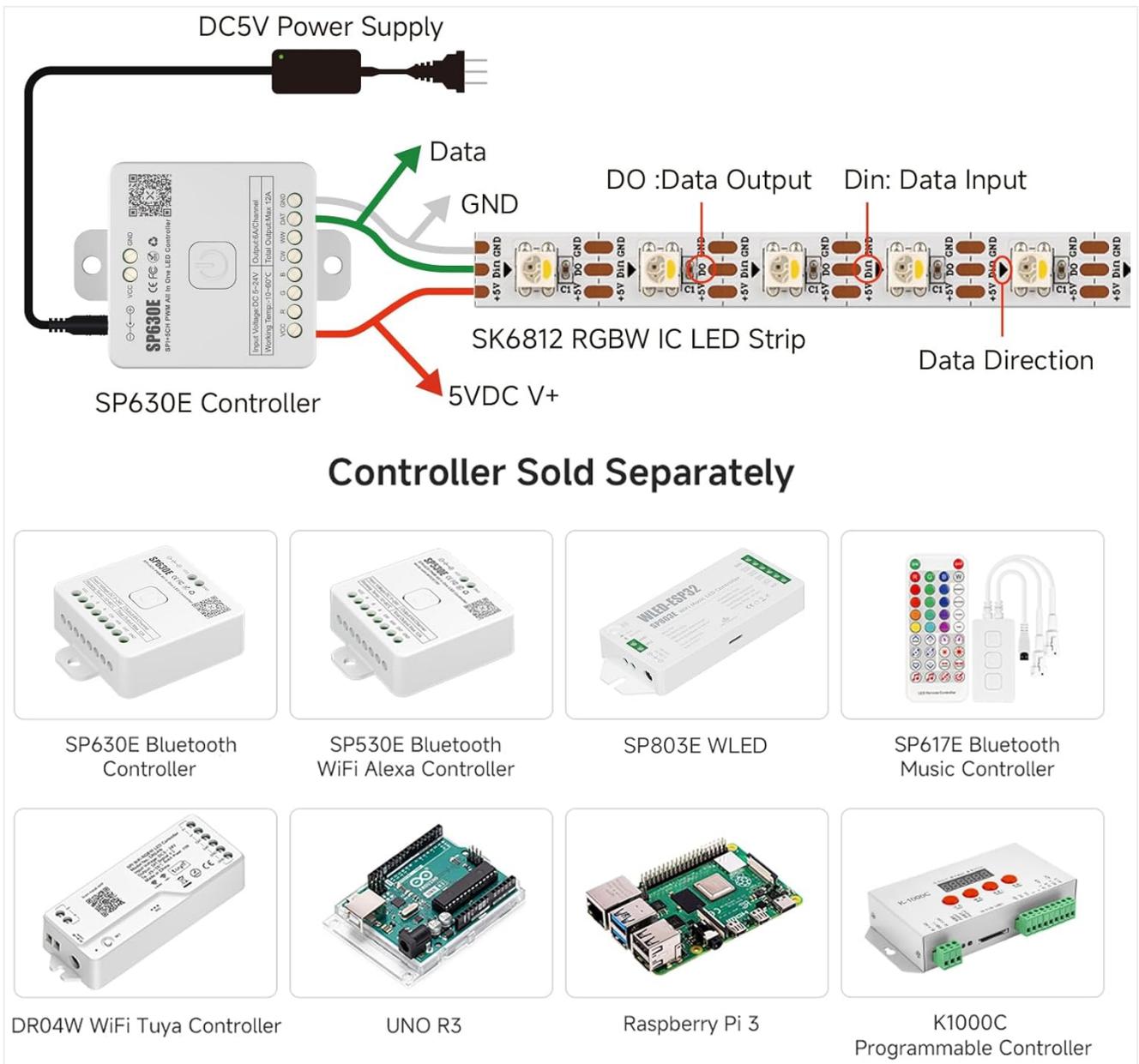


Figure 5: Connection diagram for the SK6812 RGBW LED strip, illustrating the connection points for DC5V power, data input (Din), data output (DO), and ground (GND) to a compatible controller.

### 3.3 Connection Steps

1. **Connect Power:** Connect the DC 5V power supply to the LED strip's +5V and GND terminals.
2. **Connect Data:** Connect the data output (DO) of your controller to the data input (Din) of the LED strip. Ensure the data direction is correct (indicated by arrows on the strip).
3. **Ground Connection:** Ensure a common ground connection between the power supply, controller, and LED strip.
4. **Multiple Strips:** For extending the strip, use the 3-pin JST-SM connectors to link multiple strips. Ensure adequate power injection for longer runs to prevent voltage drop.

### 3.4 Mounting

The mounting method depends on the IP rating of your specific LED strip:

- **IP30 / IP65 (Non-Waterproof / Silicone Coating):** These strips typically have adhesive tape on the back for convenient attachment to surfaces. Ensure the surface is clean and dry before application.
- **IP67 (Silicone Sheathing Waterproof):** These strips do not have double-sided tape and are designed to be

fixed using screws and clips.

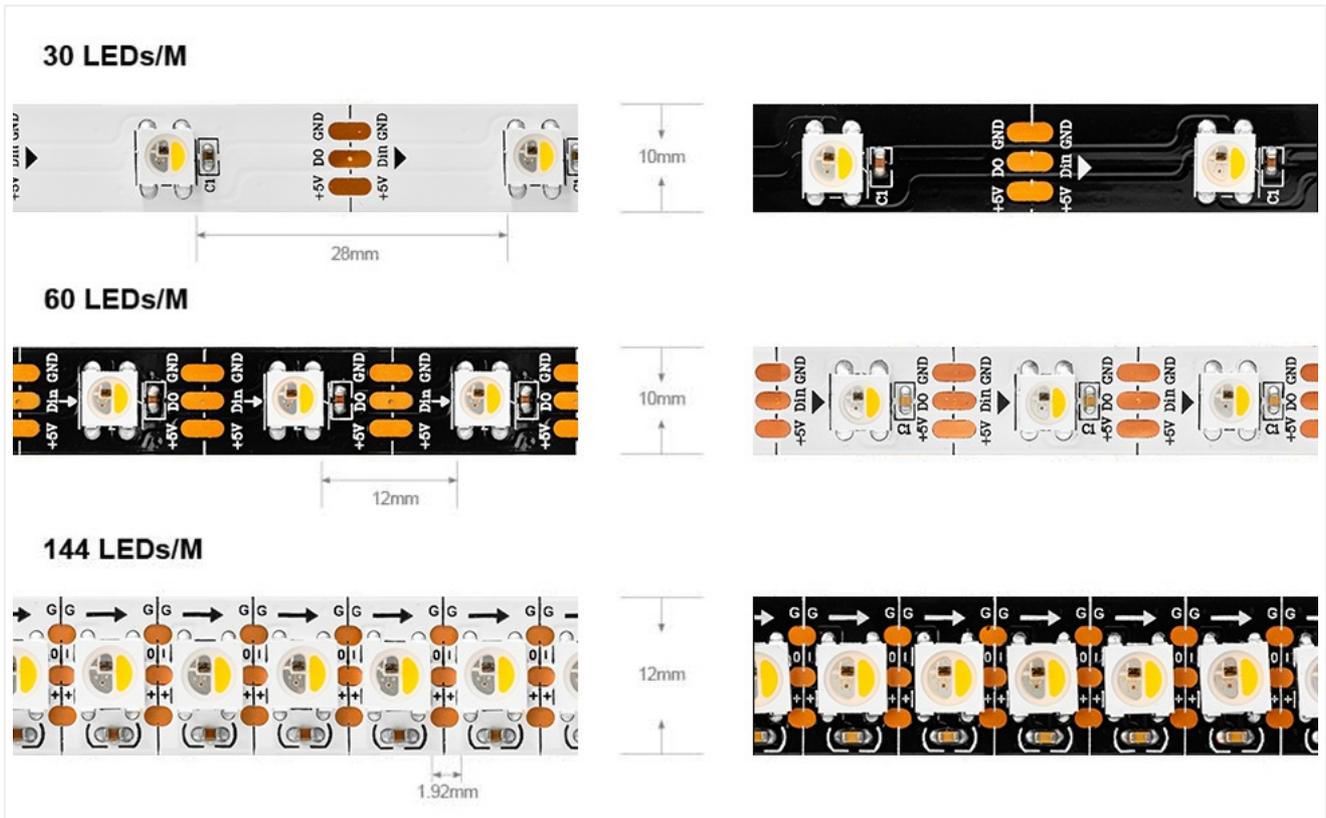


Figure 6: Illustration of the LED strip's cuttable sections and the physical characteristics of IP30, IP65, and IP67 rated strips, including their recommended mounting methods.

## 4. OPERATING INSTRUCTIONS

Once properly connected to a compatible controller, the SK6812 RGBW LED strip can be operated to achieve various lighting effects:

- **Color Control:** Utilize your controller's interface (app, remote, or programming) to select from millions of colors, including pure white. Adjust individual pixel colors or apply uniform colors across the strip.
- **Brightness Adjustment:** Most controllers allow for brightness adjustment from 1% to 100%.
- **Dynamic Effects:** Explore a wide range of pre-programmed dynamic effects such as chasing, flowing water, raindrops, jump flashes, and more. The specific effects available depend on your chosen controller.

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Video 1: An official product video from BTF-Lighting demonstrating the various color capabilities and dynamic effects of the SK6812 RGBW LED Strip.

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Video 2: An official product video from BTF-Lighting showcasing the upgraded features and performance of the SK6812 RGBW lamp beads.

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Video 3: An official product video from BTF-Lighting demonstrating the SP617E controller's functionality with SK6812 RGBW LED strips, including app control and various lighting modes.

## 5. MAINTENANCE

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To ensure the longevity and optimal performance of your LED strip, follow these maintenance guidelines:

- **Cleaning:** Gently wipe the LED strip with a dry, soft cloth to remove dust. Avoid using harsh chemicals or abrasive materials.
- **Adhesive Longevity:** For IP30/IP65 strips, if the adhesive backing loses its stickiness over time, consider using additional mounting clips or a stronger double-sided tape designed for LED strips.
- **Environmental Conditions:** Ensure the strip is used within its specified operating temperature range (-20°C to +50°C). Avoid exposing non-waterproof (IP30) strips to moisture or high humidity.

## 6. TROUBLESHOOTING

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If you encounter issues with your LED strip, refer to the following common troubleshooting steps:

- **No Light/Partial Light:**
  - Verify that the power supply is correctly connected and providing the specified DC 5V.
  - Check all connections, especially the 3-pin JST-SM connectors, for secure contact.
  - Ensure the data input (Din) and data output (DO) are connected in the correct direction.
  - Confirm that the controller is powered on and sending signals.
- **Incorrect Colors/Flickering:**
  - Ensure your controller is configured for the correct LED type (SK6812 RGBW).
  - Check for voltage drop, especially on longer runs. Consider injecting power at multiple points along the strip.
  - If using multiple power supplies for the strip and controller, ensure they share a common ground to prevent signal interference.
- **Adhesive Not Sticking (IP30/IP65):**
  - Clean the mounting surface thoroughly with rubbing alcohol and allow it to dry completely before applying the strip.
  - If the pre-applied adhesive is insufficient, use additional mounting clips or a high-quality double-sided adhesive tape.

## 7. SPECIFICATIONS

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Feature	Detail
Model Number	SK68125M60RGBNWB30
LED Type	SK6812 RGBW (4 colors in 1 LED)
Color	RGB + Natural White (4000K-5000K)
Length	16.4 feet (5 meters)
LEDs per Meter	60 LEDs/meter
Total LEDs	300 LEDs

Feature	Detail
Input Voltage	DC 5V
Max Power Consumption	90 Watts (18W/meter)
Recommended Power Supply	DC 5V 10A (50W)
PCB Color	Black
Water Resistance Level	IP30 (Non-waterproof)
Operating Temperature	-20°C to +50°C
Connectivity Protocol	Controller dependent (e.g., Wi-Fi for compatible controllers)
Control Method	Controller dependent (e.g., Voice for compatible controllers)
Material Type	Metal+PCB+Plastic
Item Weight	30 Grams



**IP65 Silicone Coating Waterproof**

Dust Prevention Water Proofing Designs.It Works Indoor Only.



**IP67 Silicone Sheathing Waterproof**

Dust Prevention Water Proofing Designs.It Can Work Outside.

Figure 7: Visual representation of different LED densities (30, 60, and 144 LEDs per meter) and their physical dimensions.

## YOU MAY RECEIVE

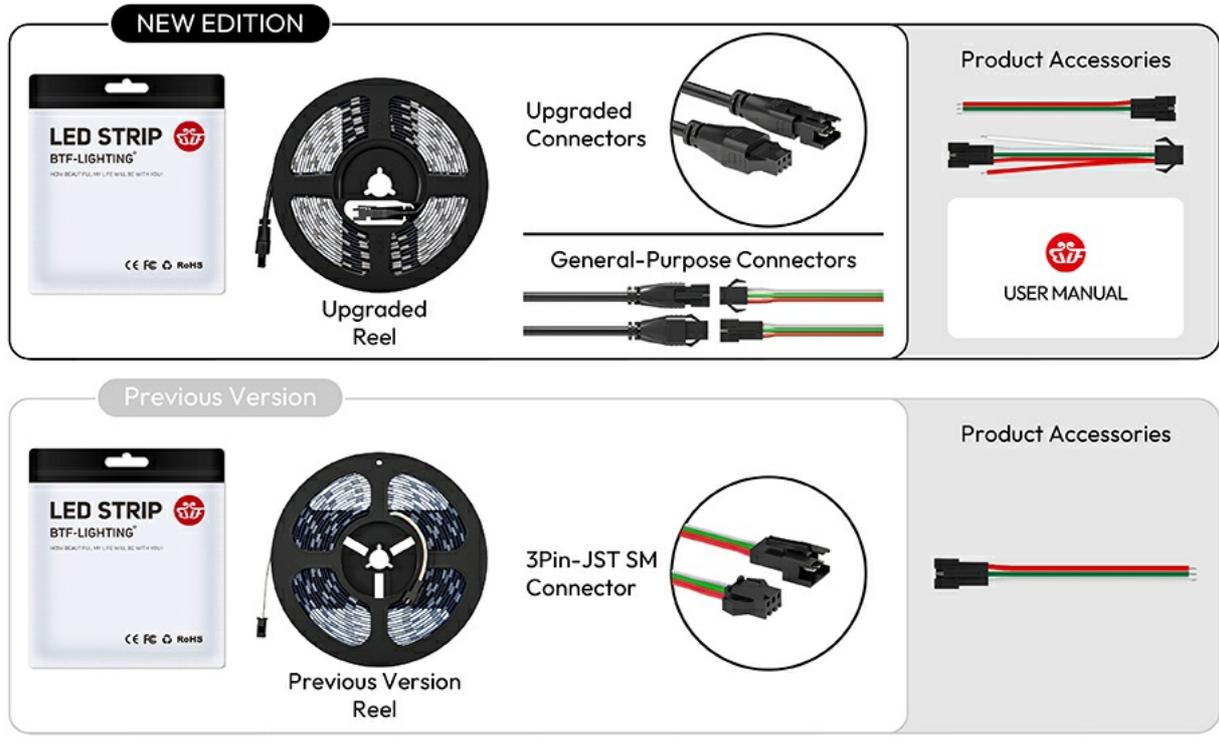


Figure 8: A visual guide to the different IP (Ingress Protection) ratings, showing IP30 (non-waterproof), IP65 (silicone coating waterproof), and IP67 (silicone sheathing waterproof) versions of the LED strip.

## 8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or visit the official BTF-LIGHTING website. Keep your purchase receipt for warranty claims.