SIRS-E®
BRILLIANCE BORN IN THE USA

StripFlexLED™
LED STRIP LIGHT PRO

MADE IN USA
c UL us
E479339

60 White LEDs per meter
Made in the USA | www.sirs-e.us

PLEASE READ IN ITS ENTIRETY BEFORE PROCEEDING WITH THE INSTALLATION.

It's crucial to thoroughly read these guidelines to grasp how LED strip lighting functions. By understanding how it can be configured, cut to size, connected, and installed, you can design your lighting layout appropriately. **While installing strip lighting is a straightforward DIY project, it requires basic wiring skills and tools for stripping, splicing, and connecting wires.**

IMPORTANT

- Use only with low-voltage, constant voltage DC power supplies; do not connect the LED strip light directly to a 120-volt household power source.
- Do not power the LED strip while coiled on reel, as the LEDs will overheat.
- The mounting surface will act as a heat sink to dissipate heat.
- Do not stare directly into the LED lights when illuminated.
- Never connect more than one power supply to a run of LED lighting.
- Do not install the strip light where it can come in direct contact with water, and avoid long-term use in high-humidity environments.
- Use only insulated staples and plastic clips to secure cords and wires.
- Route and secure wires so they will not become pinched or damaged.
- Use certified CL2 or better cabling for wire runs inside walls.
- Do not install low-voltage DC wiring in the same runs as 120-volt AC power.

All wiring must be in accordance with national and local electrical codes and should be a low-voltage Class 2 circuit. If you are unsure about how to install and wire this product, consult a qualified professional.

Planning

StripFlexLED™ lighting is designed for indirect lighting applications, ensuring that the LEDs themselves are not directly visible to the eye. Each installation is unique, and the desired lighting effect depends largely on personal preference. Factors such as installation location, wall colors, mounting angles, and reflections off walls, surfaces, and objects can influence the final appearance of the lighting. Even subtle changes to the LED strip's position and angle can significantly alter the overall lighting effect.

Installation considerations

- How will you switch your LED lighting on and off?
- Do you want to be able to dim your lighting?
- What is the best layout configuration for your installation?
- Where will you locate your power supply?
- What are the best ways to mount the LED strip lighting?
- How will you cut, connect, and conceal the wires to your lighting?

Choosing a power supply

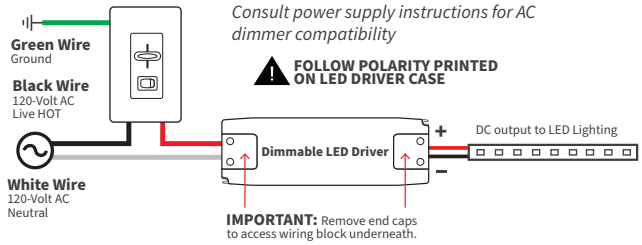
Power supplies, commonly known as transformers, AC/DC adapters, or LED drivers, come in various sizes and wattages. The StripFlexLED™ LED strip operates on low voltage, necessitating a power supply to convert standard 120-volt household AC power to 12-volt DC power.

- Never connect StripFlexLED™ LED strip lighting directly to 120-volt household power.
- Never use both a 120-volt and low-voltage dimmer in the same circuit.
- Only use StripFlexLED™ with SIRS-E® lighting approved LED drivers and power supplies. Using other power supplies will void warranty.

The type of power supply you choose will be based on how you want to turn on/off or dim your lighting.

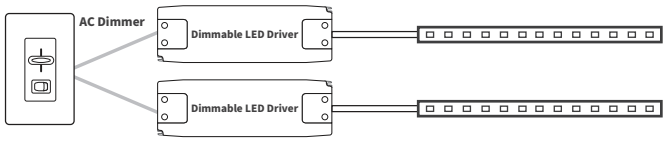
Using standard 120-volt AC dimmers *(e.g., Lutron® style)*
To use an AC dimmer, your SIRS-E® Universal Dimming LED Driver/Power Supply must clearly state on the package and case label that it is dimmable with 120-volt AC dimmers. Using a 120-volt dimmer with a power supply model that is NOT dimmable will damage the power supply.

Typical wiring diagram when used with an AC dimmer



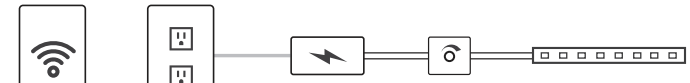
When using a 120-volt AC dimmer, the Dimmable LED Driver/Power Supply must be directly wired to household current.

Large lighting application may require the use of multiple LED drivers/power supplies. For syncronized on/off and brightness control of LED lighting on multiple power supplies, connect a 120-volt AC dimmer to multiple SIRS-E® Universal Dimming LED Drivers.



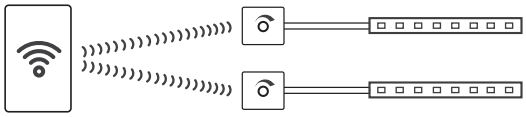
Using SIRS-E® low-voltage LED Dimmers

If installing an in-wall AC dimmer isn't practical, choose SIRS-E® low-voltage dimmer. These dimmers connect on the low-voltage side anywhere between your power supply and LED lighting. Wireless model options are available, useful in situations where installing new wiring can be difficult. Choose from RF designer-style touch pads or Wi-Fi® controllers that work with any smartphone.



Smartphone or Wireless Touchpad | *120-Volt AC Outlet* | *Low-voltage DC Power Supply* | *Low-voltage RF Dimmer or Wi-Fi Receiver*

For large lighting applications and multi-zone lighting control, use multiple SIRS-E® 2-in-1 or Wi-Fi LED dimmers. To learn more, please visit sirs-e.us.



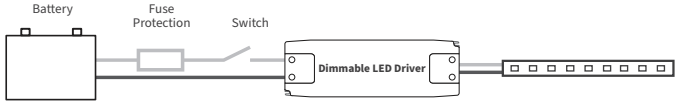
Smartphone or Wireless Touchpad | *Low-voltage RF Dimmer or Wi-Fi Receiver*

For simple on/off control (no dimming)

If an AC outlet controlled by a wall switch is not available for your power supply, consider using the SIRS-E® wireless switch. This device provides switched outlet convenience without the need for running any new wires.

RV, boat, and solar system applications

LED strip lighting can be powered directly by a battery.



A low-voltage LED dimmer can also be used with battery powered systems.

Power Supply Size

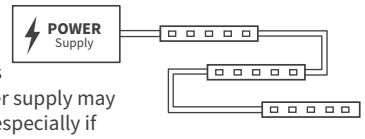
Determining your wattage requirements

LED strip light power requirements are stated in the watts and are based on several factors, including your design configuration. StripFlexLED™ can be installed in a series (strips connected or wired end-to-end) or in an array (multiple legs of LED strips or series of strips wired directly to a single power supply).

CONFIGURATION OPTIONS - TYPICAL DESIGN

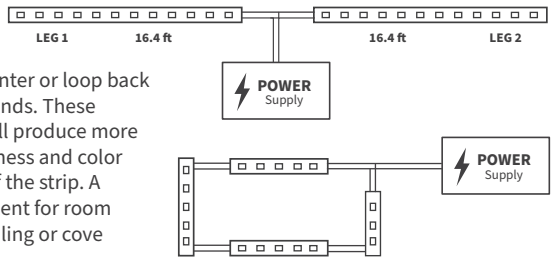
Straight Run

Only one end of the LED strip is powered. Multiple strips can be connected in a series for a continuous run. LEDs farther away from the power supply may appear dimmer due to voltage drop, especially if longer wires are used to connect the strips in between.



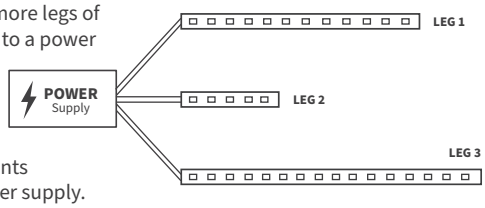
Center Feed / Loop Back

Either power two equal legs of LED strip lights from the center or loop back and power both ends. These configurations will produce more consistent brightness and color over the length of the strip. A loopback is excellent for room perimeter tray ceiling or cove lighting.



Array

An array uses two or more legs of various lengths wired to a power supply in a parallel connection. You will need to calculate total wattage used in an array to guard againts overloading the poswer supply.



Choosing a higher wattage power supply does not necessarily mean you can run longer lengths of the LED strip light. Howerver, it will allow for more lighting legs in an array design. Exceeding the maximum lengths in the chart below will cause LEDs farthest from the power supply to appear dimmer when at 100% brightness due to voltage drop. Using a higher wattage power supply will not reduce the effect of voltage drop.

MAXIMUM RECOMMENDED LED STRIP LIGHT LENGTH		
Configuration	**Length**	**Watts Used**
Straight Run	32.8 ft. / 10m	45
Center feed / Loop Back	32.8 ft. / 10m	60
Array	Varies based on layout and max wattage of power supply	

How to calculate total wattage required in lighting system

Using the chart below, determine the watts used in each leg of the lighting. A straight run is considered one leg, while a center feed consists of two equal-length legs of lighting. An array can have many legs. Include only the lengths of the LED strip in your calculation, not the connecting wires.

Add together the watts used in each leg of lighting to get the total watts required. Note this is when lighting is at 100% full brightness and when it will use the most watts energy.

Approximate watts used per meter at full brightness - 12V Strip Light											
60 LEDs / meter											
Meters	0.5	1	2	3	4	5	6	7	8	9	10
Feet	1.6	3.3	6.6	9.8	13.1	16.4	19.7	23.0	26.2	29.5	32.8
Watts used	5	9	16	22	25	28	NOT RECOMMENDED				

- Watts used is the power consumed by your LED lighting system, not the watt rating of a power supply.
- Always choose a power supply rated at or greater than your needs.
- Due to voltage drop, longer lengths of LED strip lights will average fewer watts per foot than shorter lengths.
- To accurately measure watts used by your LED strip lighting system, use a multimeter. Watts are calculated by multiplying volts by amps used in your LED system.

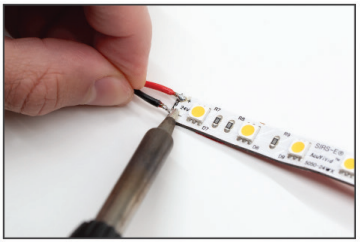
Power Supply Location and Voltage Drop

The shorter the wire leads between the power supply and the LED lighting, the brighter and more consistent your lighting will be. Avoid coiling excess wire. If the LEDs farthest from the power supply appear dimmer, it is likely due to voltage drop — a gradual decrease in voltage from the power supply to your LED lighting. Voltage drop becomes a concern only if you observe noticeable differences in brightness between areas of your lighting. As a practical approach, test your LED lighting before final installation. If voltage drop seems to be an issue, consider using thicker, heavier gauge wires, dividing power with strips from both ends (refer to back and array configurations), or reducing the amount of lighting. Use a voltage drop calculator, which is readily available on various websites accessible by searching through Google.

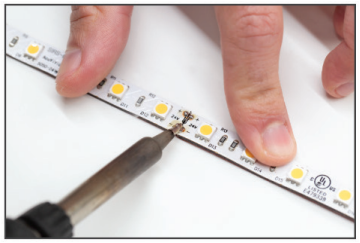
Cutting, Connecting, and Wiring

There are two methods for connecting power wires and splicing together two pieces of LED strip lighting: soldering or using SIRS-E® connectors.

Soldering is a sure method for making strong, reliable electrical connections. For tips on how to solder StripFlexLED™, please visit https://sirs-e.us/blogs/articles/how-to-solder-led-strips



Wire Lead Connection



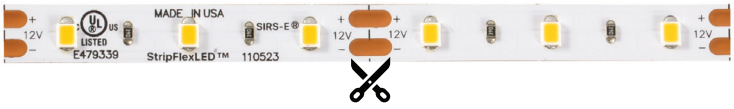
Splice Connection

Soldered connections are necessary for marine and RV applications due to vehicle movement and vibrations.

It is advisable to connect any required power wires to your strip lighting before installation, whenever possible.

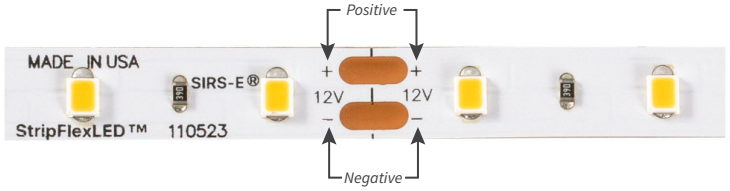
How to cut LED strip light

Whether you are soldering wires or using connectors, cut the LED strip with scissors directly in the center of the copper pad, as shown in the LED strip image below. It is also okay to cut soldered joints.



Cut strip at the center of the copper pads

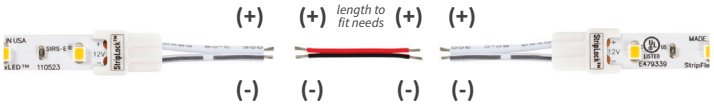
IMPORTANT: Always use the + / - indicators printed on the strip light to maintain the same polarity (+ to + and - to -).



Using StripLock™ Connectors

StripLock™ wire lead connectors are used for going around corners or, when cut in half, to create two power leads or jumper cables to bridge gaps in order to get lighting to other areas.

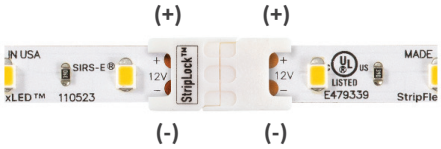
To increase the wire length between two LED strips, simply cut the connector wire in two, and splice in the length of wire needed. 18 gauge or heavier wire is generally recommended. Do not coil excess wire; shorter lengths and thicker wire will mean less voltage drop and higher brightness.



Be sure all wire splice connections are secure and sealed. Options include soldering, electrical tape, crimp connectors, terminal blocks, wire nuts, etc.

StripLock™ Splice Connectors

StripLock™ splice connectors are used to join two strips, creating a continous run of LED lighting.

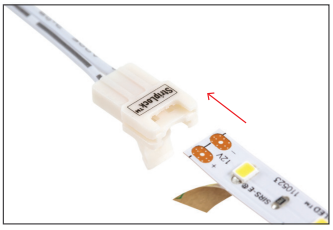


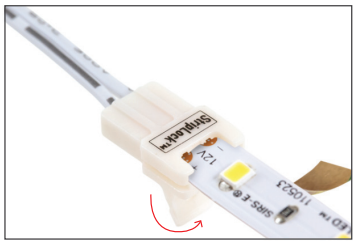
If the + / - marks do not line up, flip the strip and use the opposite end for proper alignment.

Installing StripLock™ Connectors

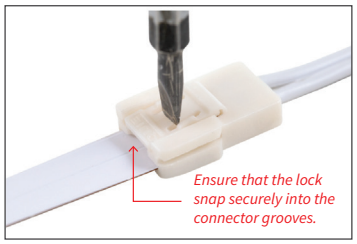
StripLock™ Connectors - both the wire lead and splice models - connect to the copper pads on cut sections of LED strip light. Connect to clean copper pads. Do not use connectors on soldered joints.

- Carefully peel back a small section of the 3M® adhesive strip paper backing - remove only the paper, not the adhesive underneath.
- With the connector in an upright position (logo facing up), carefully insert the LED strip into the channel grooves as shown.
- Use a gentle, side-to-side motion while inserting to make sure the strip is seated fully inside the connector.
- Once the lighting is seated, push to close and securely lock the pressure pad door. If needed, put the strip and connector upside down on a hard surface and use a flat head screwdriver to close and lock the door in place.





Once strip is fully inside the connector, close and lock the pressure pad door.



You can use a flat-head screwdriver to securely lock the door if necessary.

Follow the same basic instrcutions when using splice connectors.

Surface preparation and installation

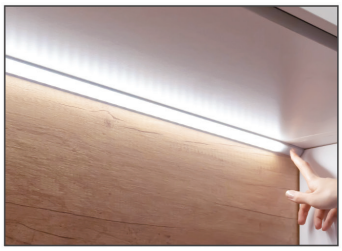
Before removing the 3M® paper backing, test the LED strip in the space you intend to light. Once the paper backing is removed, and the lighting is fully installed, you cannot reposition or move the LED strip light to another location, as the strip may not stick securely.

Do not power LED strip while coiled on reel, as the LEDs will overheat. It is normal for the strip to feel warm to the touch when holding it. Once installed, the mounting surface will act as a heat sink to dissipate heat.

Power the LED strip light and temporarily hold or strip into position with painter's strip - do not remove 3M® paper backing. Do not stare directly into the LEDs.

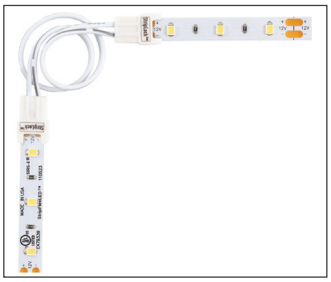
Try various angles and positions to achieve the desired level of illumination and lighting appearance. If the LEDs create undesirable bright spots on walls or reflections, reposition the strip light farther away from surfaces or try a different mounting angle.

See placement options for under cabinet lighting on page 4.

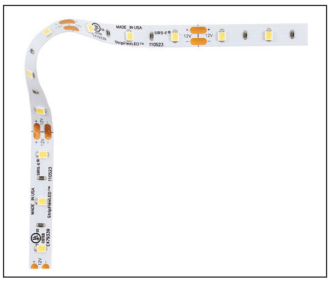


Going around corners

Although LED strip lighting is thin and flexible, it is not designed to make sideways or lateral bends and turns, as this can damage the lighting. Use a connector to navigate around corners or create soft bends with a loop, allowing the strip lighting to change direction sideways.



Using a wire lead connector to make a corner turn

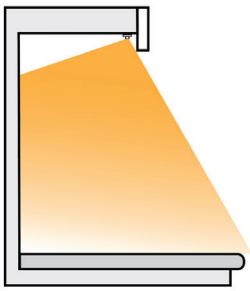


Use loop bend technique for coves and above cabinet installations

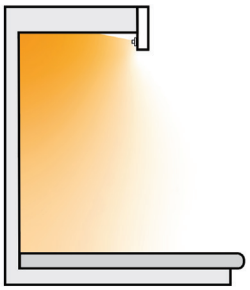
- Mounting surfaces should be smooth, clean, completely dry, dust free and above 60°F (15°C) before installing/sticking the LED strip in place. Thoroughly clean all mounting surfaces with isopropyl alcohol. Do not use common rubbing alcohol and household cleaners which may leave behind residues.
- For best adhesion, lightly sand the surface where you will mount the strip lighting with fine grit sandpaper (150-300 grit). Sand in a circular motion rather than straight-line motion.
- When installing on painted surfaces, paint should be fully cured based on manufacturer's cure time.
- Be careful not to peel off the 3M® adhesive from LED strip; just remove the tan paper backing.
- 3M® sticky back strip requires pressure to activate the adhesive. Working from one end to the other, firmly press the strip down with your fingers, taking care not to press on the individuals LEDs.
- Support power wire leads, especially when mounting under cabinets and shelves.

Placement options for under cabinet lighting

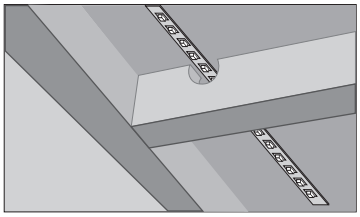
For maximum light output, mount the LED strip towards the front of the cabinet with the LEDs facing down. To focus light on the work surface and also illuminate your backsplash, position the strip light an inch or two back from the front of the cabinet. This mounting position works best with dull or matte finished surface.



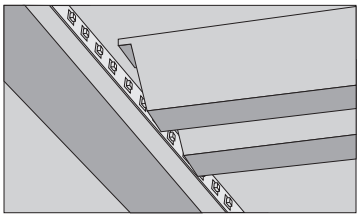
If your countertop is reflective, install the LED strip lighting on the inside back of the cabinet's lip frame with the LEDs facing the backsplash. This method helps eliminate unwanted light reflections and bright spots on the countertop. Given the wide beam angle of the strip light, this mounting position will still provide ample lighting.



Mounting LED strip lighting in a continuous run is achieved by drilling a 1/2-inch hole through the side frame lips of the cabinet. When mounting on the back side of the front frame lip, use a multi-tool oscillating saw to make small vertical cuts in the dividers. These cuts create slots allowing the strip lighting to pass from one cabinet to the next.



LED light installed through a drilled hole.

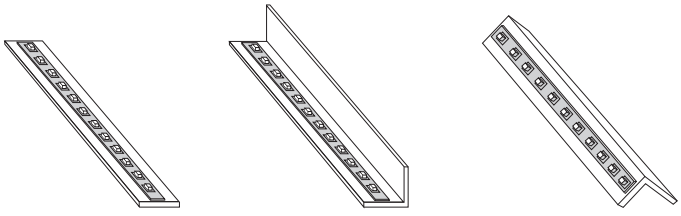


LED strip light installed through a slot cut into cabinet divider.

Create a visual barrier when mounting under a cabinet or shelf without a lip to conceal the LED strip light. Use a piece of angle trim, quarter-round molding, or any other desired type of trim to hide the LEDs.

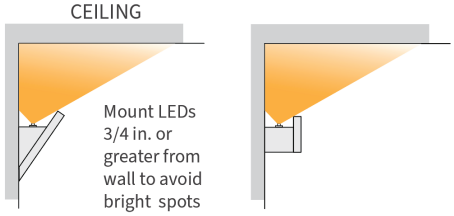
Above Cabinet Uplighting

Many cabinet tops have uneven surfaces. To achieve beautiful, indirect uplighting above cabinets, mount StripFlexLED™ on a rigid strip (e.g., thin lattice or corner guard molding) and place it on top of the cabinets. Adjust the strip's angle to achieve the desired illumination.



Cove Lighting

Experiment with different mounting positions to achieve your desired lighting effect. For a seamless glow without bright light spots, keep the LED strip light strip at least 3/4-inch away from walls.



Troubleshooting

The LED strip doesn't work

- Make sure your LED power supply is receiving 120-volt power.
- Confirm you have maintained correct polarity (+ to + and – to –) when joining LED strips and when connecting to the 12-volt power supply.
- Check all strip light connections, as well as any switch or dimmer connections, from the power supply to the LED strip light. Consider using a multimeter to ensure the light strip is receiving 12-volt power.

Only part of the LED strip light strip is lit

- Check connections to the part of the strip that is not lit.
- Confirm that you have maintained correct polarity to the unlit section.
- StripFlexLED™ is made with three LEDs connected as one series. If you experience a partial failure, you can carefully cut out the damaged section and splice in a new section as needed to repair.

LED strip lights blink on and off

- Your power supply is not adequate for the length of the LED strip light you are using. Install a higher wattage power supply or reduce the wattage used by shortening the length of your LED strip lighting.

LEDs farthest from the power supply are noticeably dimmer

- This issue arises from a voltage drop. To address it, either shorten the length of the 12-volt power feed wires or use thicker power feed wires between the 12-volt power supply and the strip lighting.
- Use shorter lengths of LED strip lighting. Refer to the '**Configuration Options**' section in these guidelines. You might also consider a different configuration.

SPECIFICATION

Input Voltage	12 V DC [2]
Light Output	~1000+ (lumens) per meter (~330 per ft.)*
Cuttable	Approx. every 2 inches (50mm)
Beam Angle	120°
Color Rendering Index (CRI)	±95
LED Light Source	High Power SMD 2835
LED Count	60 LEDs per meter
Country of Origin	USA

**Light output is based on a 1-meter (3.3 ft) length. Voltage drop can affect lumen output for longer lengths.*

Limited three-year warranty

Improper installation, abuse, or failure to use this product for its intended purpose will void the warranty. This warranty applies only when all components, including LED power supplies, have been provided by SIRS-E® Lighting or approved for use by them. The warranty does not cover labor or any other costs or expenses related to the removal or installation of defective, repaired, or replaced products.

MADE IN USA

c UL us E479339

SIRS-E®

BRILLIANCE BORN IN THE USA

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sirs-e.us