

24 Volt Eco Flex LED Neon

Part Numbers: LFN-2700K, LFN-5800K



Eco Flex LED Neon is an adaptable and flexible option for achieving the creative potential of neon while getting all the benefits of LED, in a cost-effective package. With 15 meter run lengths that only need to be powered from one end, our team engineered Eco Flex LED Neon to be UL-Listed and to cut down on labor and installation costs. Its rugged silicone casing provides protection for both indoors and outdoors and diffusion for a hotspot-free appearance.

Traditional glass neon has been the medium of choice in the sign industry for decades, and gained popularity in the architectural and accent lighting industry over the years as well. However, a large drawback to glass neon is that it is fragile, expensive to maintain, and difficult to customize or repair. This new and improved version of neon is durable, rugged, waterproof, bright, energy efficient, and easy-to install.

Eco Flex LED Neon is capable of producing lighting effects that were never possible with traditional glass Neon. It is easy to control using any of our controllers, dimmers or any DMX controller and easy to customize with our various end caps, connectors and wire exists. This is a fantastic product for commercial, studio, architectural and decorative lighting installations.

It is easy to customize and create impressive large-scale effects using Eco Flex LED Neon. Based on the needs of the project, Eco Flex LED Neon can achieve a waterproofing level of up to IP65. We provide all of the tools, accessories, and instructions that are needed to customize your project. Also, there are self-locking aluminum clips that are compatible with Eco Flex LED Neon.

Specifications

Voltage:	24VDC
Power consumption:	9.6 watts per meter (2.97 watts per foot)
Dimensions:	12mm x 25mm (0.47" x 0.99")
LED quantity:	120 LEDs per meter
Minimum cutting length:	50mm (1.97")
LEDs per cut segment:	6
Minimum bending diameter:	90mm (3.54")
Waterproof rating:	IP65 (Only applies to specific connectors described below)
Certifications:	UL, RoHS
Warranty:	1 year limited

Warning

- Before making any cuts or performing installation/maintenance, be sure all electricity is disconnected.
- Only the Eco Flex Waterproof Connector and the Eco Flex Silicone End Cap can be used to achieve an IP65 rating. Both must be installed correctly to achieve an IP65 rating.
- Operate LED Neon lighting according to instructions only.
- Confirm the polarity of connectors before inserting.
- Connect and cut this product correctly. **Must use cutting shears designed to cut LED Neon (listed in companion parts tab).**
- Incorrect operation will damage the circuitry.

Caution

- Use only factory-recommended connectors and accessories.
- Recommended operating temperature is below 45°C (110°F) ambient temperature.
- Do not bend and handle light when ambient temperature is below 0°C (32°F), as the lights can become brittle and susceptible to damage below 0°C.

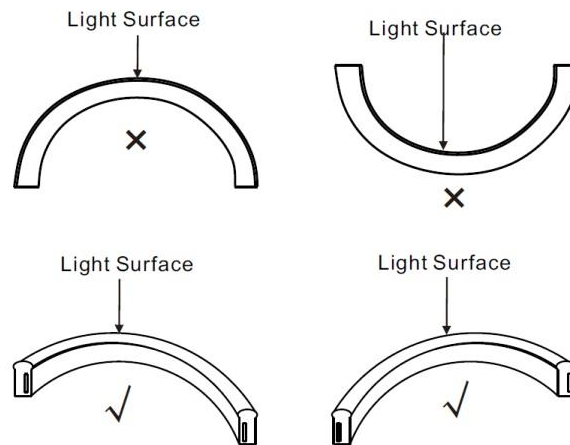
Custom LED Neon

Available customization options for Eco Flex LED Neon include:

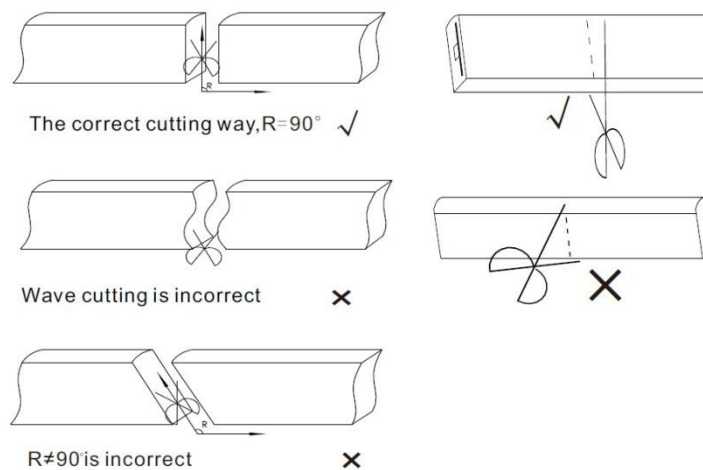
- Length: Eco Flex LED Neon can be cut to any custom length 15 meters or less along the minimum cutting increment for that specific LED neon product.
- Accessories: DIY IP65 connector sets, mounting clips and more.

Assembly and Installation

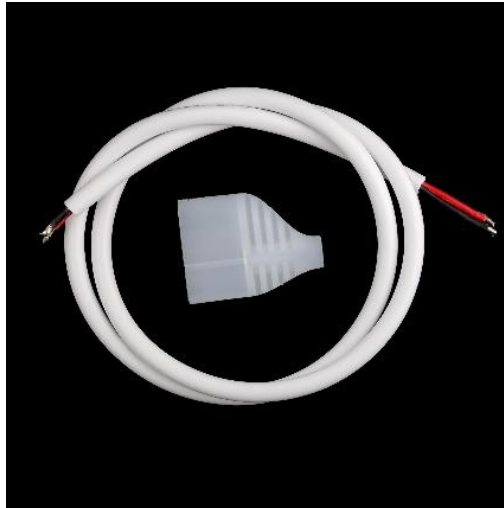
1. Be sure to mount the Eco Flex LED Neon correctly. Eco Flex LED Neon can only be horizontally bent. Vertically bending will cause damage.



2. Eco Flex LED Neon can be cut at specific cut points. Scissor marks on the side of the rope indicate where cuts can be made. Be sure your cut is a straight line, perpendicular to light, as shown below.



Eco Flex Waterproof Connector (LFN-CONN-WP)



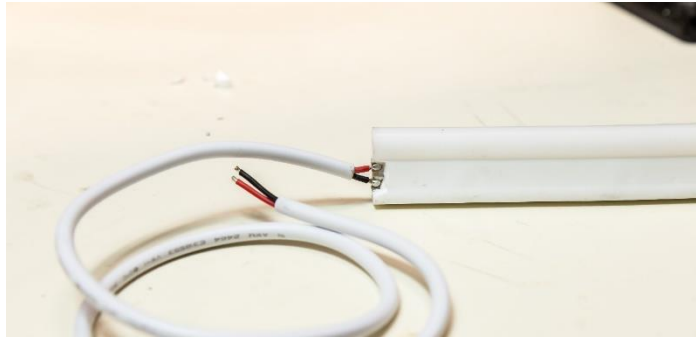
The Eco Flex Waterproof Connector is the only Eco Flex LED Neon connector with an IP65 rating if installed properly.

Installation Steps:

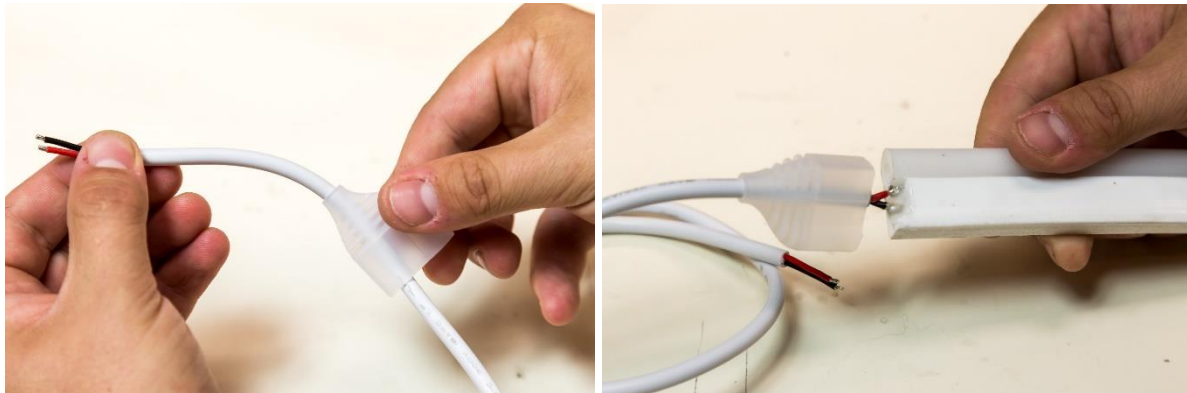
1. Use wire cutters or a razor blade to cut back the silicone sheath and expose the solder pads. Be careful to only cut the silicone and not the LED strip underneath.



2. Solder the wire to the solder pads. Ensure that the wire orientation is correct as shown below.



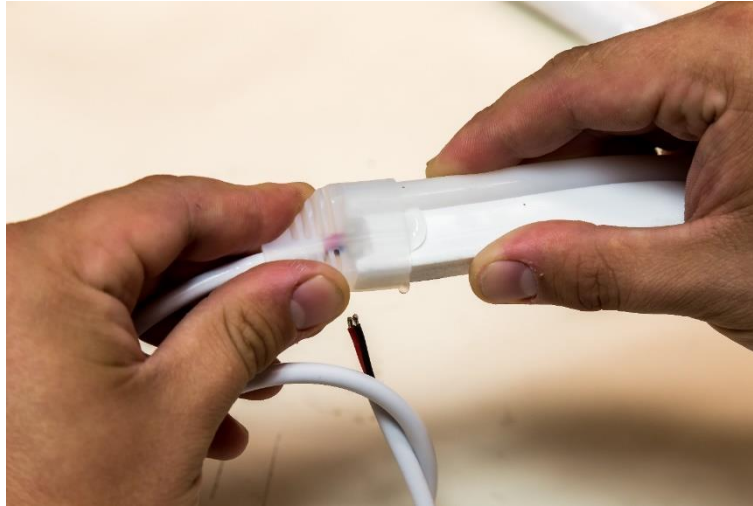
3. Pour Silicone Waterproofing Glue over the solder pads and then thread the cable through the end cap. You may also slide the end cap onto the wire before soldering if you do not want to slide the end cap the entire length of the wire.



4. Fill the cap 1/3-1/2 way with glue to ensure a tight seal around both the LED Neon segment and the cable. Avoid forcing glue inside the hollow upper section of the silicone sheath.



5. Affix the cap tightly to the LED Neon and around the cable.



6. Let the LED Neon segment hang dry for 12 hours, as shown below. Moving the cap before it has fully dried might prevent a proper IP65 seal from forming.



Eco Flex Connectors (LFN-CONN, LFN-CONN-S, LFN-CONN-L)



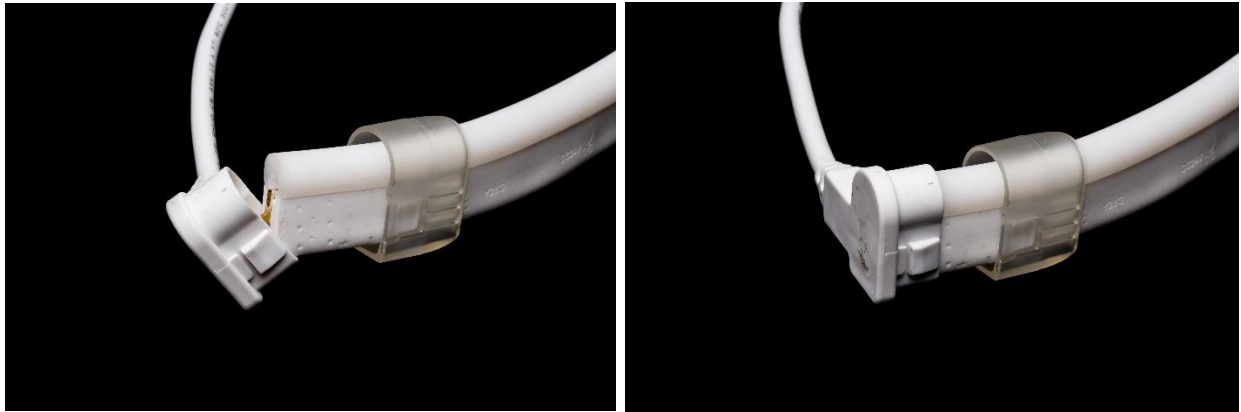
Eco Flex Connectors are easy to install and require no soldering or glue. The front exit, bottom exit and side exit connectors are all installed using the same installation steps shown below. Once assembled, these connectors form a permanent connection with the LED Neon.

Installation Steps:

1. Slide clear cap over the LED Neon segment in the orientation shown below. The wider opening is closer to the edge of the LED Neon.



2. Slide the connector into the end with the two prongs aligning with the back of the LED strip inside the sheath, on the opposite side of the LEDs.. Plug the LED Neon into a 24V power supply and ensure that the LED Neon illuminates.



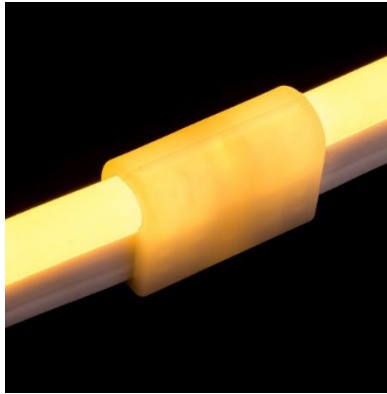
3. Insert the metal securing clips into both sides as shown below. Make sure the teeth of the securing clips are facing towards the LED Neon segment. On the side exit connector, the clip needs to slide into a groove or the clear cap will not fit over the connector.



4. Once the metal clips are in place, slide the clear cap over the connector until it locks into place.



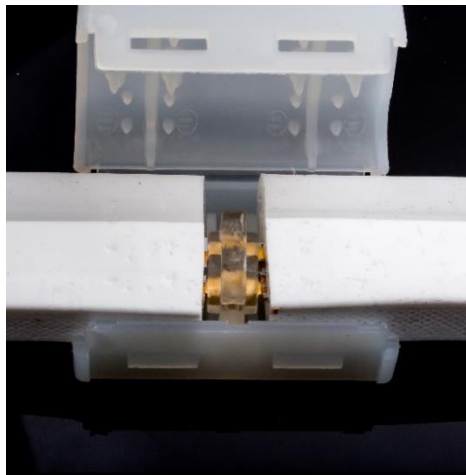
Eco Flex Interconnect Set – Middle Connector (LFN-CONN-MC)



The Eco Flex Interconnect Set – Middle Connector allows you to connect multiple segments of Eco Flex LED Neon quickly and easily. To avoid voltage drop, do not connect more than 15 meters of Eco Flex LED Neon in one run.

Installation Steps:

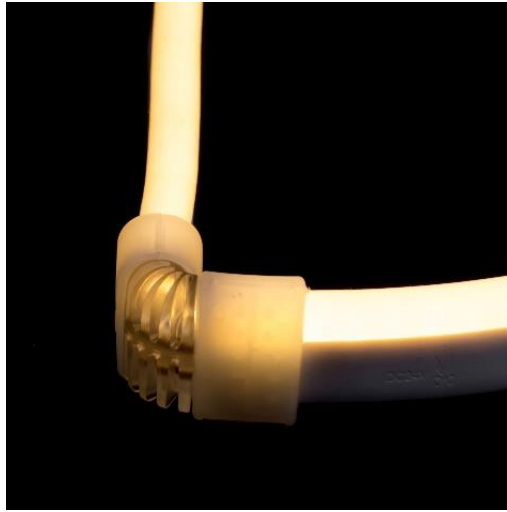
1. Insert the two-prong insert into both pieces of Eco Flex Neon. Make sure that the prongs are inserted on the opposite side of the PCB as the LEDs
2. Place the connected pieces into the connector housing. The pronged insert fits into a groove in the center of the connector



3. Clasp the enclosure shut to finish the installation. Give a light pull on the LED Neon to ensure that both pieces are secured into the connector properly.



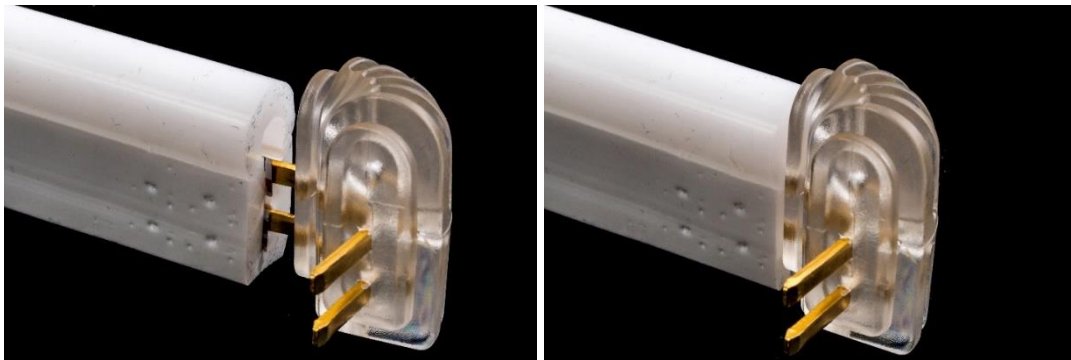
Eco Flex Interconnect Set – 90 degree corner connector (LFN-CONN-L)



The Eco Flex Interconnect Set – 90 degree corner Connector allows you to connect multiple segments of Eco Flex LED Neon quickly and easily. To avoid voltage drop, do not connect more than 15 meters of Eco Flex LED Neon in one run.

Installation Steps:

1. Insert the two-prong insert into the end of one LED Neon segment ensuring that the prongs are on the opposite side of the PCB as the LEDs.



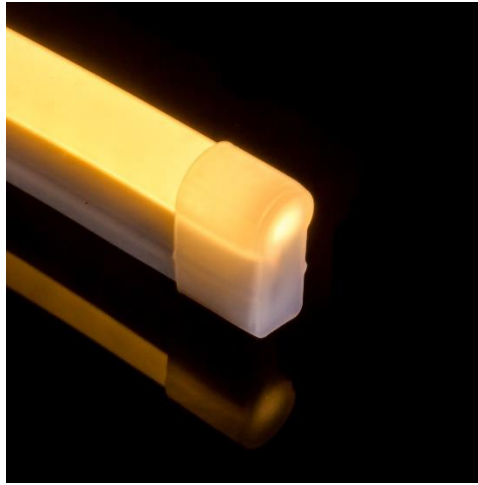
2. Place the first fold-over section around the Neon. The arrow on the fold-over connector must point towards the two-prong insert. The fold-over connector should overlap the first ridge of the two-prong insert to secure it in place.



3. Clamp fold-over connector shut to finish attaching the connector. Give a light pull on the two-prong insert to ensure that it is connected securely.. Repeat steps 1-3 to connect the second segment of LED Neon.



Eco Flex Silicone End Cap, IP65 (LFN-EC)



The Eco Flex Silicone End Cap is an IP65 end cap that should be used to seal any open ends of Eco Flex Led Neon. This end cap will protect the sensitive electrical components inside the LED Neon and improve the longevity of your installation even if used indoors.

Installation Steps:

1. Pour about 1/8th inch of silicone glue into the end cap and press it firmly to the end of neon. Ensure that there is a glue seal between the entire mating surface of the LED Neon and the end cap. Avoid forcing glue into the hollow top of the silicone sheath.

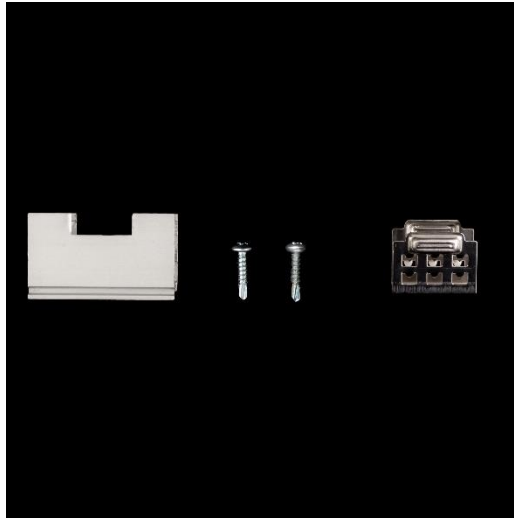




7. Let the LED Neon segment hang dry for 12 hours, as shown below. Moving the cap before it has fully dried might prevent a proper IP65 seal from forming.



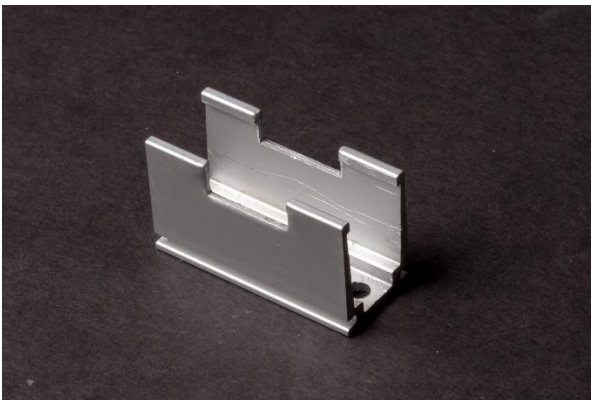
Eco Flex Mounting Clip, 5cm (LFN-CL)



The Eco Flex Mounting Clip allows you to easily and securely mount your LED Neon. The teeth of the locking insert hold the neon in place even when mounted upside-down.

Installation Steps:

1. Mount the clip to a flat surface using the two included screws.



2. Slide locking insert over the LED Neon and insert it into the mounting clip. Tabs on the insert line up with the notches in the clip.



Safety Precautions

Please take the following precautions:

1. This equipment, like all electrical equipment, should be installed by a qualified person.
2. Do not expose these LEDs, dimmers or power supplies to intense electro-magnetic fields, including lightning.
3. The controllers and power supplies are not waterproof. Keep them dry.
4. Always observe proper polarity.

When installing LED lighting, it is a good idea to follow this “dry-run” procedure:

1. Be sure you have everything you need before you start.
2. Lay out your lights and power supply on the floor or table.
3. There is some resistance in the LED lighting. If you see any color fading or dimming at the end of a long run, you may have too many LEDs for your power supply and you might need a bigger supply or shorter runs. Use a bus structure as described in [rgb_manual.pdf](#). Call if you need assistance with larger projects.
4. Connect everything and test it to be sure it works and you have it connected properly. It is unlikely, but possible, that some part of your system is defective or was damaged during shipment. If that is the case, it will be very helpful to you to know that before you do all the work involved in installing custom LED lighting systems. You will also know if you damage anything during installation, which is really helpful in trouble-shooting because manufacturing defects and installation damage typically have very different solutions.

Once you have tested the system successfully, you are ready to install it. We recommend you install LEDs, electronic controls and dimmers in such a way that you have access to them in case they fail. All electrical components can fail.