



LED Neon Selfie Spot

Created by Erin St Blaine



<https://learn.adafruit.com/led-neon-selfie-spot>

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Overview

The Oxford English Dictionary added the word "selfie" in 2013, but its usage is documented as early as 2002. It's one of the most popular uses of the modern smart phone. And let's face it - people love taking selfies.

More and more businesses and events are taking note of this fact and building in locations where people can stand and get a really great selfie for Instagram or Facebook, or a unique and fun video for TikTok. And with the Zoom Boom happening thanks to Covid 19, people want interesting backdrops in their homes as well.

This guide will show you how to build your own custom selfie spot out of LED Neon. It's easy to assemble, it's mobile, and it's also easy to take apart and re-configure, when you decide you're ready for a change of scenery.

There's no coding required. Just choose the colors you want, lay them out, and plug them in to get a magical glowing wall of selfie goodness.



Difficulty Level

This is an easy beginner project that doesn't require soldering. I did do a bit of soldering on mine because I wanted to neaten up the wires on the back, but it's absolutely possible to build this without touching a soldering iron. You just need a pair of wire snips and a screwdriver.

Materials



[Flexible Silicone Neon-Like LED Strip - 1 Meter](https://www.adafruit.com/product/3860)

Here at Adafruit we love discovering new and exotic glowing things. Like moths to the flame, we were intrigued by these fresh Flexible Silicone Neon-Like LED...
<https://www.adafruit.com/product/3860>

First, you'll need some LED neon. It comes in most of the colors of the rainbow. Each strip is 1 meter long, and it is definitely possible to solder them together into longer lengths or cut them to shorter lengths. How much you need and what color will depend on your design.

Note: There is also [color-changing RGB Neon \(\)](#) available, but that kind requires a microcontroller and some code to tell it what color to be. You can most definitely incorporate that into your project, but it's beyond the scope of this guide. We're keeping it simple with solid colors.



[12V 5A switching power supply](https://www.adafruit.com/product/352)

This is a beefy switching supply, for when you need a lot of power! It can supply 12V DC up to 5 Amps, running from 110V or 220V power (the plug it comes with is for US/Canada/Japan...

<https://www.adafruit.com/product/352>

You will also need a 12v power supply. My project uses 6 1-meter strips, and this power supply works great for that.



Female DC Power adapter - 2.1mm jack to screw terminal block

If you need to connect a DC power wall wart to a board that doesn't have a DC jack - this adapter will come in very handy! There is a 2.1mm DC jack on one end, and a screw terminal...

<https://www.adafruit.com/product/368>

Finally, you need a screw terminal to connect from the Neon strip to the power supply. Order a few of these! They're inexpensive and can sometimes break, so it's great to have a couple extras on hand. Also, having a handful of these will give you much more flexibility with your wire management.

Additional Parts You May Need

Depending on your setup, you may want to get some splitters or some additional wire to help with connecting power to all your neon strips. I also recommend getting an inline power switch so you can turn your project on and off without unplugging.

1 x [Power Switch](https://www.adafruit.com/category/140)

<https://www.adafruit.com/category/140>

In-line power switch for 2.1mm barrel jack

1 x [2-way Splitter](https://www.adafruit.com/product/1351)

<https://www.adafruit.com/product/1351>

2-Way 2.1mm DC Barrel Jack Splitter Squid

1 x [4-way Splitter](https://www.adafruit.com/product/1352)

<https://www.adafruit.com/product/1352>

4-Way 2.1mm DC Barrel Jack Splitter

1 x [Red Wire](https://www.adafruit.com/product/2513)

<https://www.adafruit.com/product/2513>

Silicone Cover Stranded-Core Wire - 25ft 26AWG - Red

1 x [Black Wire](https://www.adafruit.com/product/2517)

<https://www.adafruit.com/product/2517>

Silicone Cover Stranded-Core Wire - 25ft 26AWG - Black

1 x [Heat Shrink](https://www.adafruit.com/product/344)

<https://www.adafruit.com/product/344>

Heat Shrink Pack

Frame Materials

This design uses a window screen kit from the hardware store as the frame. We'll wire the neon to the screen using bits of thin craft wire. Window screen kits are affordable (mine was less than \$25 all inclusive) and are designed to be built into custom sizes and shapes.

Check your local hardware store, or look online for window screen kits, and don't forget the installation tool.

You'll also need some thin craft wire to wire the neon to the screen. Look for around 22g, it's easy to find either online or at your local craft store. I'm sure most hardware stores will carry it also.



Build the Frame



I found a 48" square window screen kit and a roll of 48" screen material at my local hardware store, so that's the size I went with for my selfie spot. This is a pretty good size for a one-person selfie. The great thing about these screen kits is that you can size them up or down really easily, so measure your space and pick your size accordingly.

Be sure to grab one of the screen installation tools as well. It will make your life easier!



Even though my frame was 48x48, and my screen material roll was 48" wide, I still needed to trim 1" off my frame, because installation requires a bit of overlap with the frame and the 48" screen fabric didn't quite reach. Use a hack saw or a chop saw or whatever you have to get a clean cut.



The corner pieces pop into the corners in a most satisfying way.



Use a flat head screwdriver to pry out the foam rubber spline in the frame's groove. Pull it out completely and set it aside.



Cut your screen to size, leaving about 1" overlap on all 4 sides. I found it helpful to clamp it on all 4 corners.

Use the convex side of your screen tool to tuck the edge of the screen into the groove. Place the foam rubber spline on top and use the concave side to firmly push the spline down over the screen.



Take your time and try to get nice even tension on the screen the whole way around. Trim off any excess screen sticking out of the groove.

Design & Layout

I wanted my selfie spot to invoke energy, light, power, and empowerment. Who better to embody all those traits than Wonder Woman? With the new Wonder Woman movie getting ready to hit the streams, I thought it'd be fun to get ready for my movie night with some flashy neon.

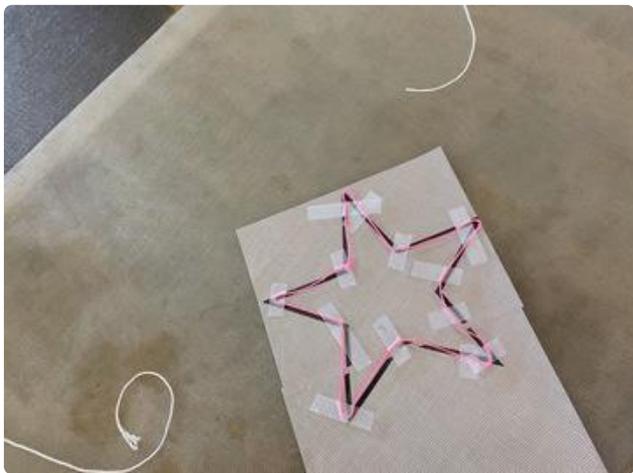
I started by making a [pinterest board \(\)](#) of ideas. People have been making neon signs for decades, and while we're not using real neon, the design principles will be the same. Look around and see what people have done and get inspired.

This stuff will work great for simple designs, curves, and shapes. It doesn't make super tight corners very well, and you'll want to stay away from intricate motifs until you get a feel for what it can and can't do.



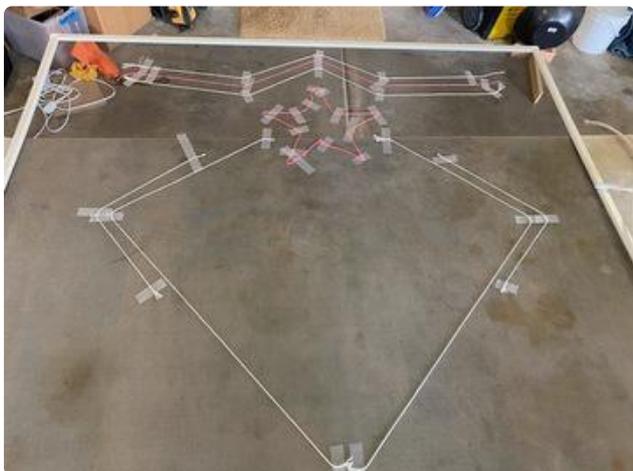
Once you have your idea sketched out, it's time to lay it out so it fits as nicely as possible with your neon strips to minimize cutting and soldering.

Cut a 1m piece of string for each of your neon strips. Use different colors to mimic the colors of the strips.



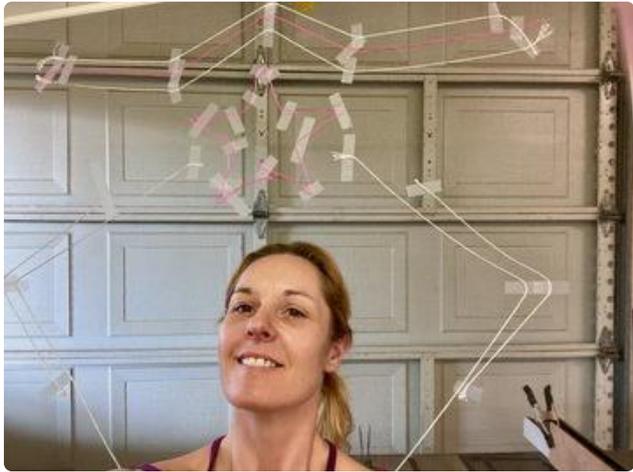
Print out or draw any shapes or symbols you want to incorporate. Size them up or down on your computer before printing until the outline of your shape is the same length as your string (i.e. 1 meter long). I didn't do any math here, just a bit of trial-and-error until I got it right.

I really recommend not skipping this step. You'll be surprised how hard it is to get an evenly laid out star shape if you're working freehand.



Use the rest of your strings and some scotch tape to lay out your entire design. If you're going to cut your neon into shorter strips, you can mimic that with your strings as well.

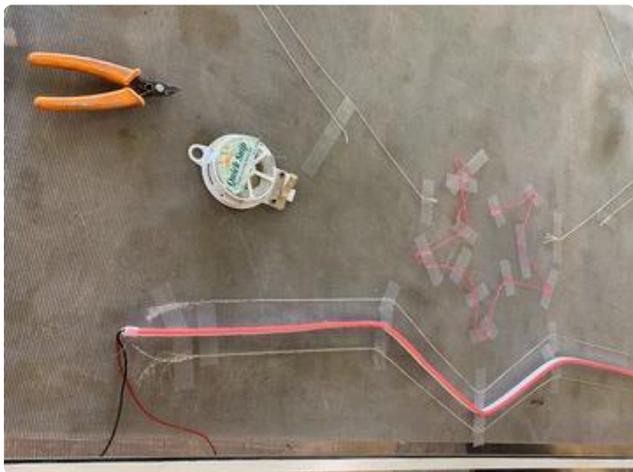
Pay attention to where the wired ends of the neon will lay out. It will make your life easier if you can cluster all the wires as close together as possible.



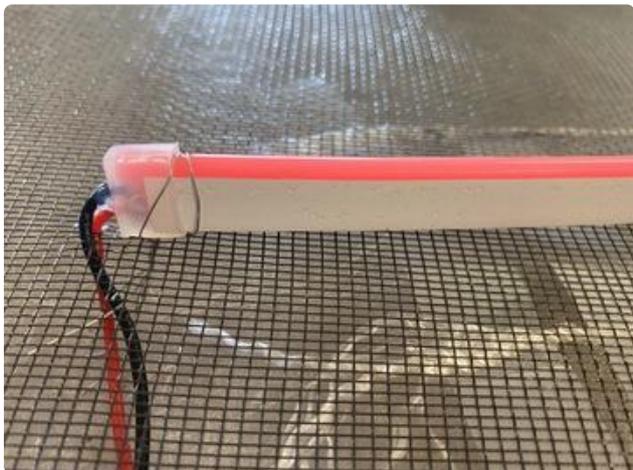
Before you commit to your final design, test it out by taking some selfies in front of it. Make sure your head doesn't block the main part of the design and that it's big enough to see when you're standing in front of it.

Assembly

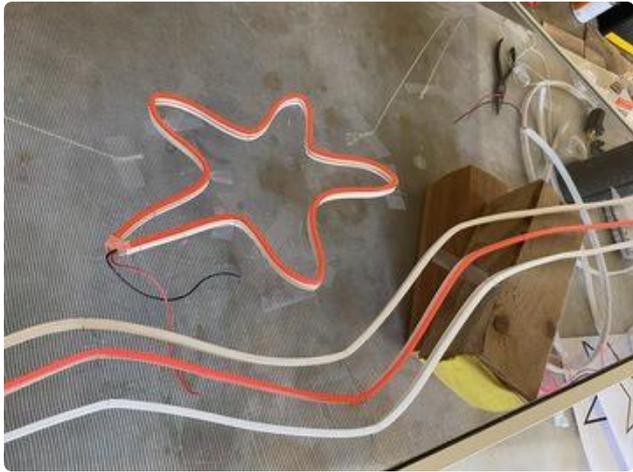
If you want to cut your neon into shorter strips or splice them together into longer strips, check out this [Neon Sign guide \(\)](#) by John Park for tips on how to do that.



Flip your screen over so the strings are on the back side, and place the neon right on top. Cut a small piece of craft wire and use it to wire the end of your neon into the screen. Twist the wires on the other side to secure it.



Place a wire at all the corners and any place you feel it needs structure. I found it helpful to use an angled wire to add tension to the ends of the neon, to keep the corners sharper and the shapes more accurate.



When adding shapes, try to lay them out so the wired ends of the neon are as close to each other as possible on the back. This will minimize the amount of cleanup you will need to do later on.



Poke all the neon wires through to the back of your sign. If you've got a soldering iron, put it to use splicing extra lengths of wire between the neon strips. Your wires will show through so be as tidy as you can. It's very possible to hide all the wires behind the neon strips with a little extra wire and effort, if you want it to be perfect.



Use screw terminals at the end of your wires - red to + and black to -. I got mine wired so I only needed one screw terminal, but if you get a handful of them and [some power cord splitters \(\)](#), you can use one for each neon strip to make this a no-solder project.

Wire the screw terminal to the screen for strain relief. These wires can pull out pretty easily if they're tugged on too hard.



Plug it in and watch it glow!

If one of your strips isn't working, try reconnecting the screw terminal. These things are notoriously fiddly!

It's easy to take this sign apart and reconfigure it as many times as you would like. Just snip the craft wire attachments and you've got a blank slate to create once more.

