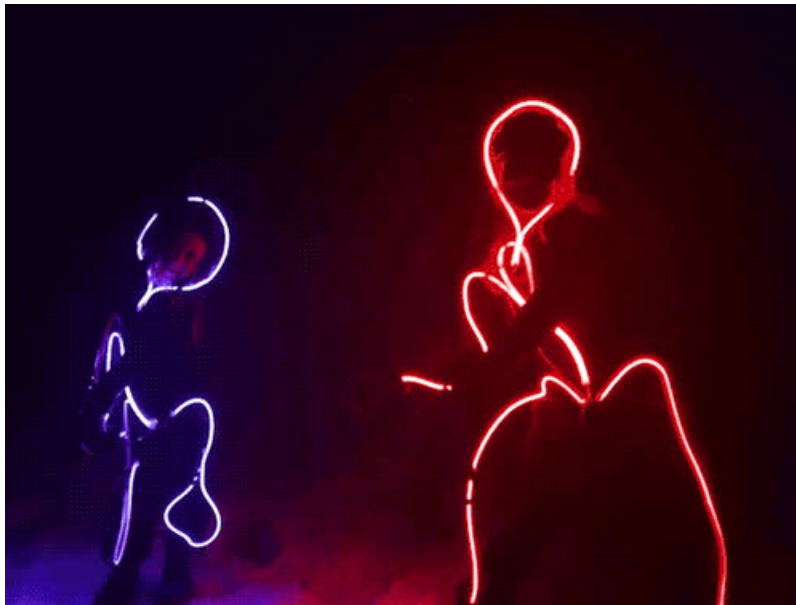




LED Neon Stick Person Costume

Created by Erin St Blaine



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Overview

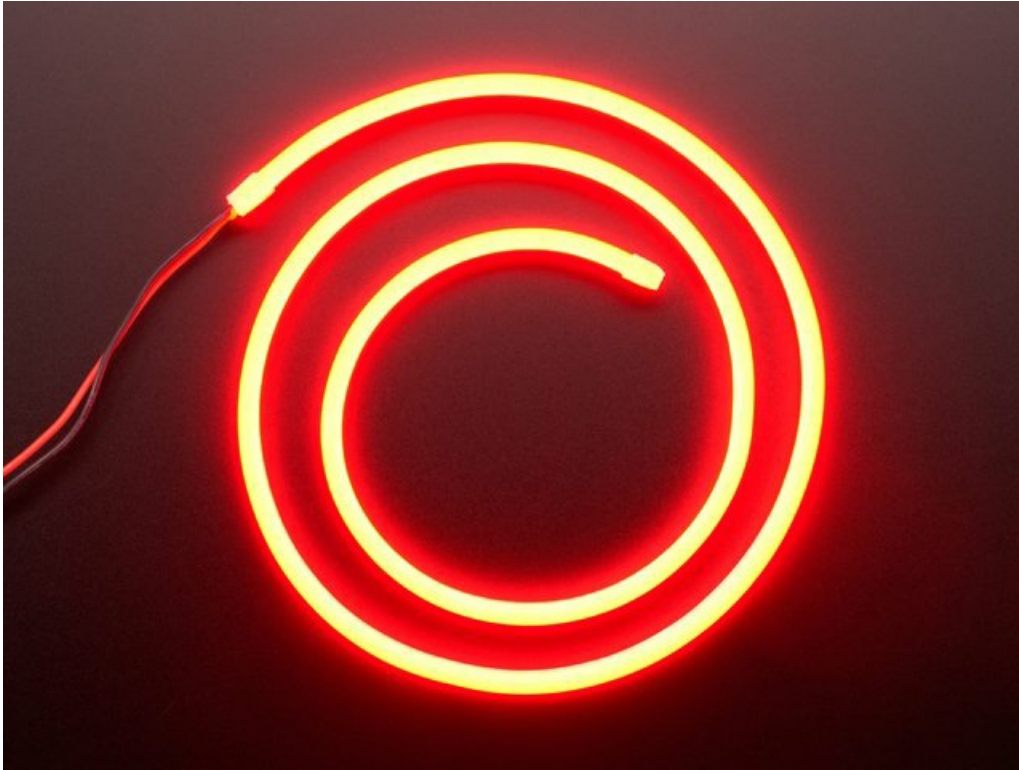
Build a neon stick-person costume from LED neon strips. These strips glow really brightly when connected to power, without the need for additional controllers or code of any kind. Just solder them together, plug in your battery pack, and glow!

They come in a lot of different colors, so you can glow in style. Make one for everyone in your family for an unforgettable group costume next Halloween.

This tutorial will show you how to connect the strips together and power them, and make a simple velcro harness that straps on over your dark clothing to bring the costume to life. It's easy to adjust to fit different sized people, and no sewing is required.

Suit up and let the dancing commence.





[Flexible Silicone Neon-Like LED Strip - 1 Meter](#)

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...

\$13.95

In Stock

[Add to Cart](#)



8 x AA battery holder with 5.5mm/2.1mm Plug and On/Off Switch

Make a portable power brick with plenty of juice! Use Alkaline AA's for a 12V 3000-4000mAh power supply, or rechargeable NiMH for 2000mAh 9.6V supply. Either one is good for running...

\$5.95

In Stock

Add to Cart



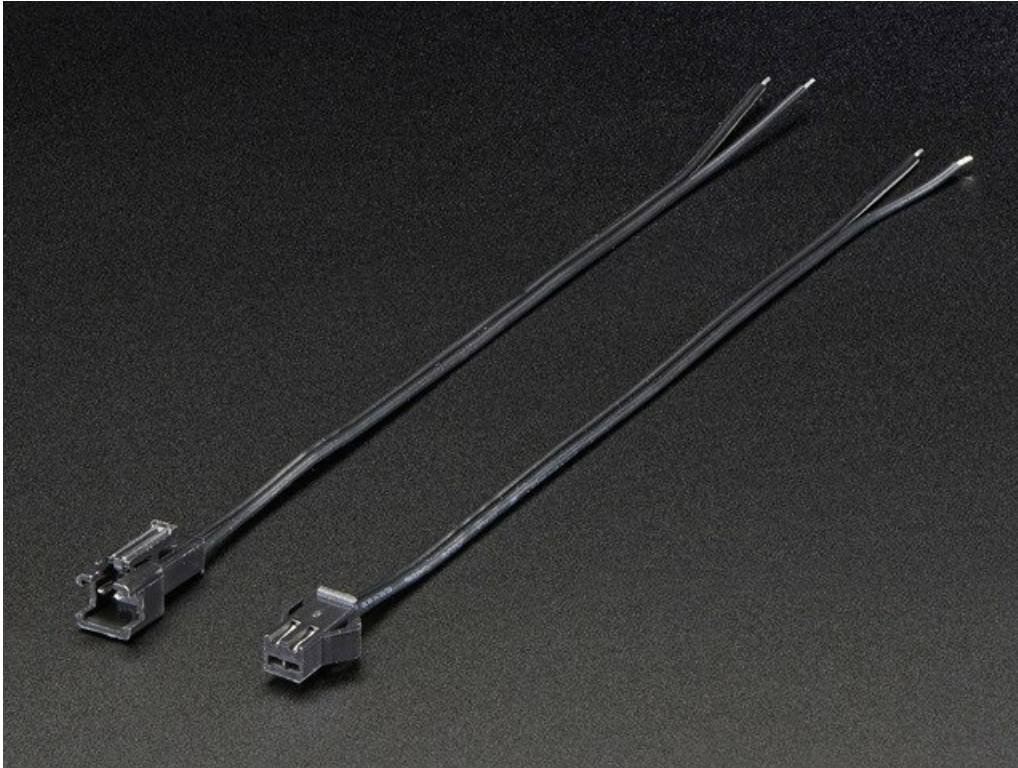
Female DC Power adapter - 2.1mm jack to screw terminal block

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...

\$2.00

In Stock

Add to Cart



2-pin JST SM Plug + Receptacle Cable Set

These 2-wire cables are 16cm long and come as a set. One side has a 2-pin JST SM type connector plug on the end. The other side has a matching 2-pin JST SM type...

\$0.75

In Stock

[Add to Cart](#)

You'll need batteries and a little bit of extension wire as well.

2 x [Wire](#)

2m Silicone Stranded Wire in Red & Black

[Add to Cart](#)

2 x [Batteries](#)

8 AA batteries

[Add to Cart](#)

1 x [Heat Shrink](#)

Heat Shrink Tubing - 1/4"

[Add to Cart](#)

You'll Also Need

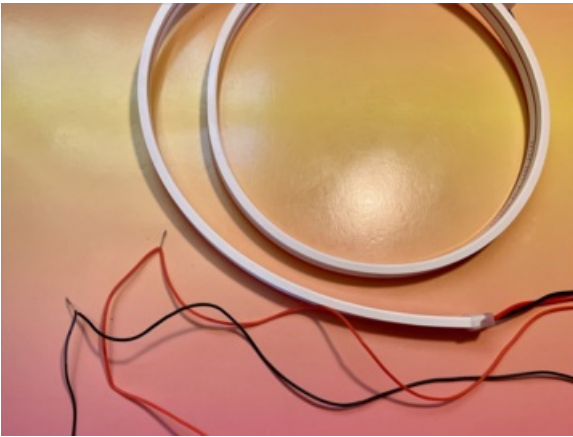
- A bike helmet
- Clear / white zip ties
- [Velcro One-Wrap \(https://adafru.it/Rue\)](https://adafru.it/Rue) - A 25 foot roll will work for one adult-sized costume

Assembly

Each LED Neon strip has two wires: a power (red) and a ground (black) wire. We'll connect all the red wires together and all the black wires together, and splice in an additional wire that goes to the battery pack. We'll also add an extension wire and connector so the head piece can be put on separately, to make it easier to get the costume on and off.

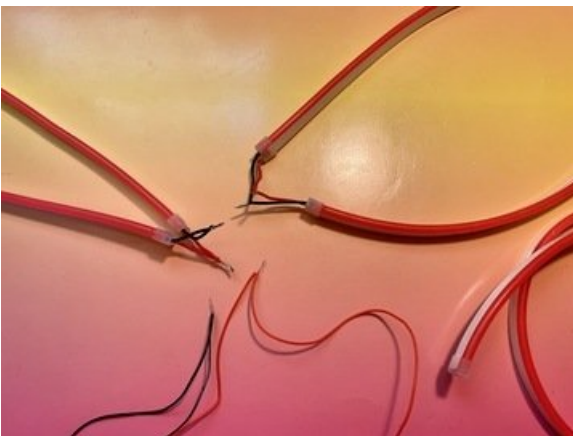


Choose one Neon strip to use as the costume's head. Solder about 15-18" of additional wire to the red and black wires -- enough to reach from throat to belly button.

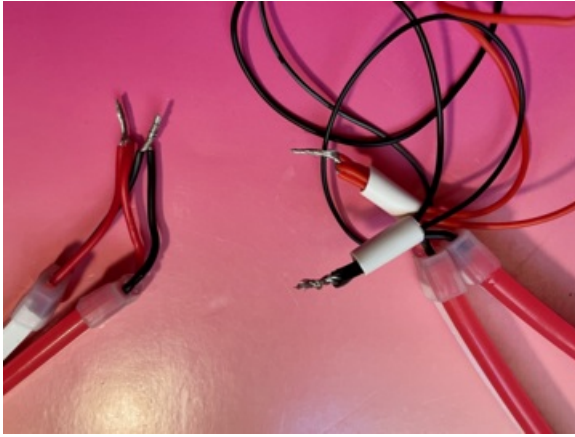


Cut another 15-18" of red and black wire -- enough to go from belly button to the pocket where you plan to stash the battery pack plus a few inches of slack.

Strip about 1/4" of shielding from the end of each wire and twist the two red wires together and the two black wires together. Set this piece aside.

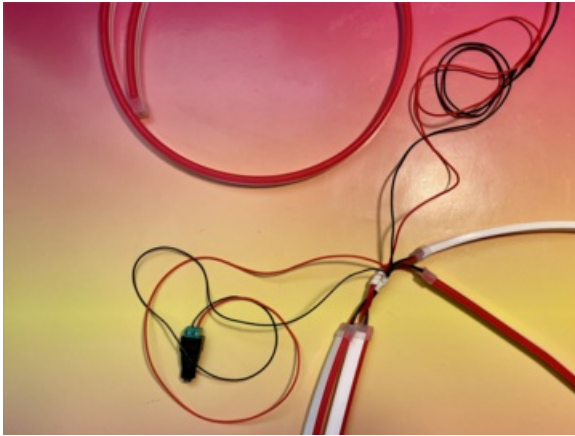


Trim the wires from the 4 remaining neon strips to about 1-2 inches long. Twist the red and black wires from 2 of the strips together, then repeat with the other 2 strips. You should end up with three bundled sets of 2 twisted wires in red and black.



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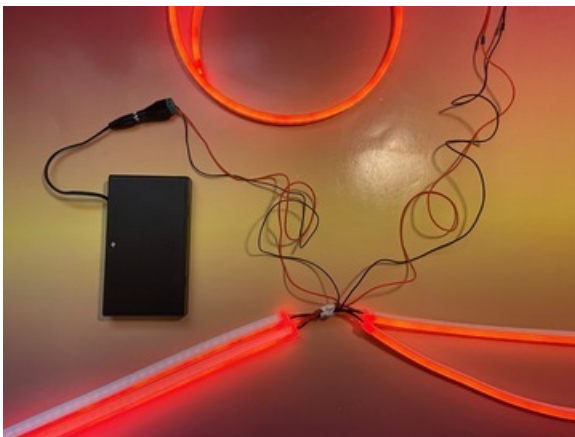
Twist the red wires from the head together with one of the paired strips for the body. Slide your heat shrink over the four wire twists.



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Twist the remaining body sections into the mix and saturate the resulting 6-wire joints with solder. Be generous with the solder here - you want to be sure the connection is strong and includes all 6 wires.

Attach your screw terminal to the power wires with a screwdriver, making sure the connection is tight and the wires won't pull out easily.



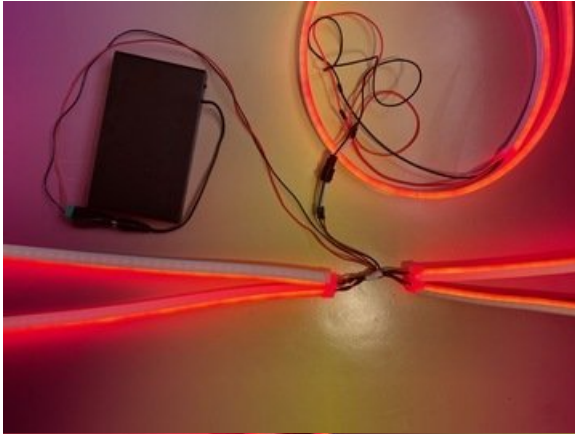
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Plug in your battery pack and flip the switch to "on". Test to be sure all the neon strands light up. When everything is working, use a heat gun to shrink your heat shrink over the wire connections.

Head Connector

I found it much easier to get the costume on and off if the head strip was a separate piece. It's easier to strap into the costume harness when there's not a lot of extra bits dangling and tangling in your way.

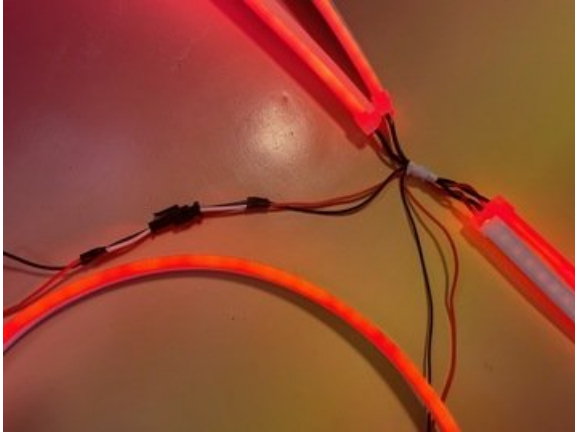
I added a 2-pin JST connector between the head and the rest of the body. This step is optional but will likely make your life easier and keep the wires from getting pulled and broken.



Cut the wires going to the head strip near the wire junction. Slip on a little heat shrink on all 4 cut wire ends.

Solder a JST connector to the cut wires, making sure to line up red with red and black with black.

Now you can connect and disconnect the costume's head as desired.



Harness

These strips can be cut if you're making a smaller child-sized version. Just trim the end off if it's too long - you won't damage the strip by doing this.

Or, it's easy to bend the strips around and make loops for the hands and feet if you're strapping the costume onto a munchkin.



Lay out a set of close-fitting clothes on your floor or table. We'll build the suit on top of the clothes, so we get all the proportions right.

Place your strip on top of the clothes to approximate your stick person shape. The full strips work for an average sized adult, and there's lots of wiggle room for length adjustment -- for a taller stick person make the hips a little narrower, etc.



For the chest portion, use clear or white zip ties to attach the two strips going up the middle of the chest together.



For the main body harness, we'll use zip ties poked through velcro strips. The One-Wrap Velcro straps have a softer side and a grabby side. Use an awl to poke two holes in your velcro. Thread the zip tie through from the soft side to the grabby side, then loop over the Neon strip and back down through the other hole.



Cut each velcro strip long enough to go around each body part plus a few extra inches for overlap. If you'll be wearing this someplace cold, remember to account for the thickness of your jacket.



I made velcro straps for:

- Upper arms
- Wrists
- Chest
- Hips (two zip ties hip-width apart on this strap)
- Knees
- Ankles

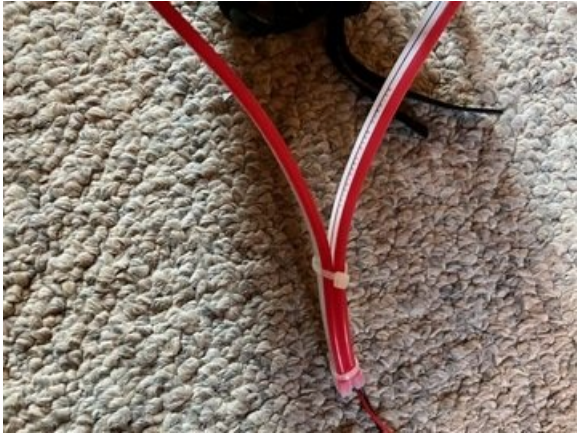
I used about 20' of velcro strips for this adult-sized costume.

Head



To make the head shape, I found an old bike helmet with vents that go clear through. Check your local thrift store if you don't have an old helmet on hand.

Zip tie the head loop to the helmet through the vents.



Zip tie the two ends of the strip together to form a teardrop shape. Add one more fairly loose zip tie above the first one. Leave this one loose enough that you can slide it up and down. When you put on the helmet, slide the zip tie up to create the round head shape, and slide it back down to make it easy to remove the helmet.

