Ohio State Neon Sign

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VIEW IN BROWSER

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Summary

Provides the channels for an Ohio State Neon Sign

Art & Design > Wall-mounted

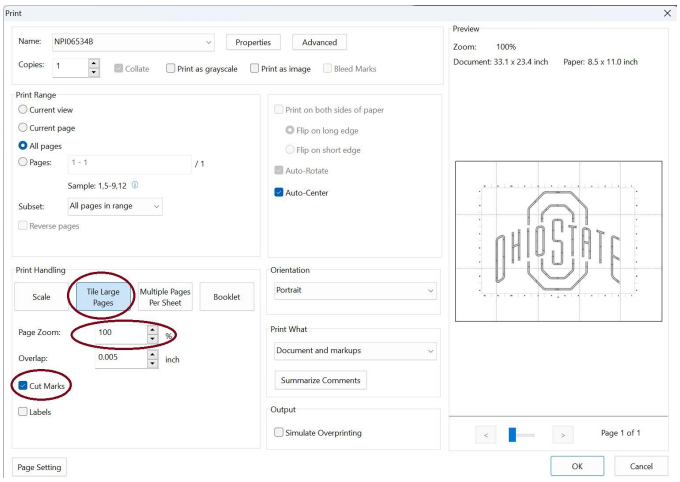
Tags: ledlight ohiostate ohio neonsign neon ohiostateuniversity

This design for an Ohio State Neon Sign are preformed channels that you put Neon LED strips into in order to make the logo. Each channel is designed so that the cutoff length of the LED strip is optimal so there are no gaps. This requires 2 different color LED strips. the strips listed below are the ones I used and designed the channels around. I was able to make 3 signs out of 2 white strips and 1 red strip.

https://www.amazon.com/gp/product/B08SJHFY3X/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8

https://www.amazon.com/gp/product/B08SHZZ45X/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8

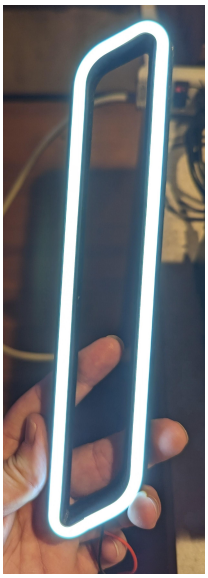
Included in the files is a to scale (1:1) drawing in pdf form. Make sure the print this drawing tiled without printer margins enabled at 100%, and enable cut marks. For instance this is a screen cap on Foxit pdf reader.



This will print the drawing on multiple pages that you tape together. This will give you the idea of how large the sign will be as well as a template for the hole pattern used to attach the 3d print to wood for instance.

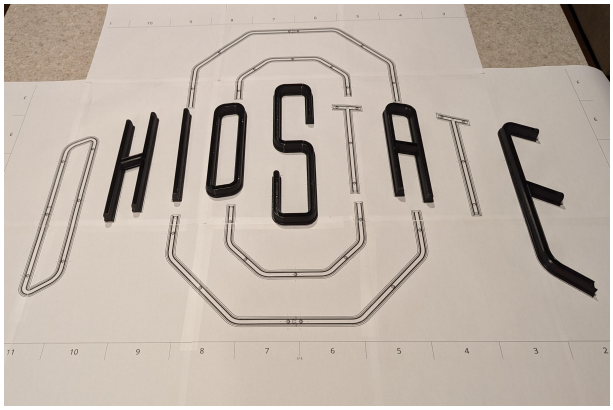
I printed the channels out of black PLA. The only thing that mattered to me was the thread forming. I made sure that the layer height for the treads was 0.1mm the rest of the channel can easily be printed at 0.2mm layer height. The infill is pick your poison.

Once the channels are printed I would put the led strip part of the way into the channel and measure out how much I needed. One thing to note is that because the LED strip is not in the center of the strips, there can be a difference in strip length based on if the led is closer to the inside wall or outside wall. So I would note which way you had it when you cut the strip to length. I have provided a model of a cutting jig that will help to make clean cuts with a standard razor blade. Once the strip is the correct length solder on the positive and negative wires on the side that corresponds with the hone in the model that is not threaded. Thread the wires through the hole and press the LED strip into the channel. This should be a tight fit. The photo below shows a completed “O”.



Complete all the letters as described above. The red LED strip is to be used in the Block O portions of the logo. The only difference is that the large O is sectioned. It is a very simple puzzle piece to put them together and insert the LED strip.

The fastener is designed to be printed in PLA at 100% infill at a layer height of 0.1mm. The layer height is to better form the threads. Even with these settings they are delicate and if you over tighten the fasteners they can snap. Below is re some images of the layout of the sign and how I supplied power to all the segments of the sign.



As you can see above I used 2 lengths of copper tape and soldered each positive and negative wire of the segments to the corresponding copper bar.

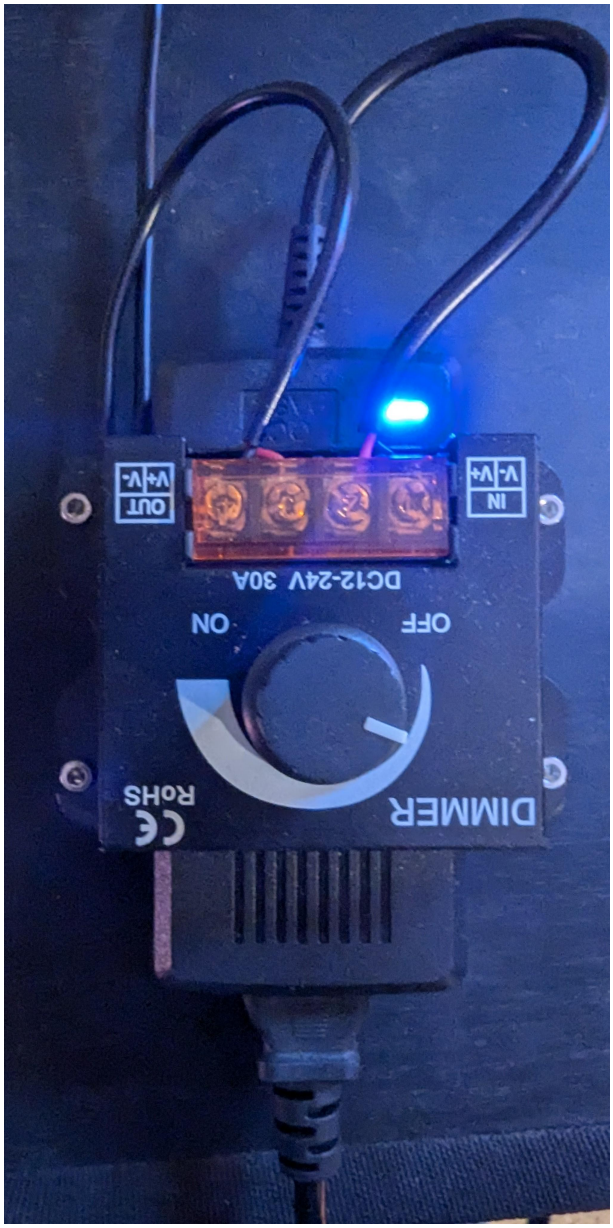
Lastly in order to power this i needed the following:

5V Powe supply:
https://www.amazon.com/gp/product/B01GEA8PQA/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

Dimmer as the sign is incredibly bright at 100%
https://www.amazon.com/gp/product/B07HN1BJWK/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

20 gage wire:
https://www.amazon.com/gp/product/B093LBG853/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

I designed a bracket that to attach the dimmer to the 5V power supply. It uses a 4 square nuts and 4 screws. One of the brackets provides strain relief to the cable from the dimmer to the sign. See pictures below:



Model files

o1.stl

First "O"

h.stl

H

i.stl

I

o2.stl

Second "O"

s.stl

S

t1.stl

First T

a.stl

A

t2.stl

Second T

e.stl

E

bo1a.stl

Block "O" (part 1a)

bo1b.stl

Block "O" (part 1b)

bo2.stl

Block "O" (part 2)

bo3a.stl

Block "O" (part 3a)

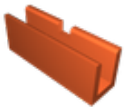
b03b.stl

Block "O" (part 3b)

b04.stl

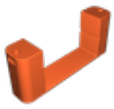
Block "O" (part 4)

fastener.stl



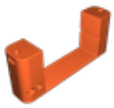
cutting_jig.stl

Fixture for cutting the LED Strip



psu-dimmer-bracket-no-strain-relief.stl

No Strain Relief



psu-dimmer-bracket-strain-relief.stl

Strain Relief holes

Other files

scale-drawing.pdf

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