



IKEA Lack LED-Matrix



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[VIEW IN BROWSER](#)

updated 18. 11. 2022 | published 18. 11. 2022

Summary

This is an IKEA Lack table modified to fit a diy 12x12 LED-Matrix controlled by a Raspberry Pi.

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Tags: [snake](#) [led](#) [gaming](#) [retrogaming](#) [ws2812](#) [ws2812b](#) [screen](#) [raspberrypi](#) [ws2811](#) [matrix](#) [raspberrypizero](#) [tabletopgaming](#) [ledmatrix](#)

This is an IKEA Lack table that we carved out and put in a 12x12 Led Matrix made from ws2811 strips controlled by a raspberry pi zero w running a local webserver you can connect to with your phone or computer in order to play games or show cool animations.

Check out the code on GitHub: <https://github.com/future-thinking/pixelos>

Parts List:

- 1 x IKEA Lack table
- 1 x 5m 30 leds/m neopixel strip
- 1 x RaspberryPi (preferably zero w)
- 1 x Powersupply (depending on your led strip voltage)
- 1 x DC-barrel jack connector

- (1 x Buckconverter if needed)
- 1 x 400x400mm 3mm diffused acrylic panel
- 1 x 400x400mm 4mm panel to glue on the leds
- 8 x Sidepanel holder
- 16 x M3 Screw and M3 heatset insert
- All parts for a complete grid
- A lot of small wires to wire the strips together

The grid is exactly 400x400mm in size and I just cut a hole in the top of the table with an utility knife and hollowed out the inside which is just filled with honeycomp paper.

The leds are about 5m of addressable neopixel strips with 30 leds/m. It makes a big difference using a white background and white strips as well as painting the dividers white on the sides and black on top in order to increase brightness and get better diffusion. I also used the WS2811 variant because they are 12v and have no voltage drop with high brightness whites which can lead to color shifts and stuck pixels.

The dividers are lasercut on a K40 out of 3mm mdf but can also be printed but with the current models you might need quite a big printbed and have to be carefull as to not have any light bleed between the pixels.

The leds are glued onto a 400x400mm 3mm baseplate to make them easy to wire, replace and reappear. I used another sheet of the same acrylic I bought for the diffusion glass on top which lead to the light bleed you can especially see in the snake picture. But I think thats actually a cool effect but might not always be desirable.

Under the sides left on the table after cutting everything out the side panel holders are mounted with M3 screws coming from below the table into some heatset inserts. They are there to hold white sidepanels that reflect the light that would otherwise just be lost in the insides of the table making the outside rows much darker. They also function as a way to center the led matrix panel.

I just cut them out by hand out of some white soft plastic and also secured them in place with M3 screws. Just make sure to leave a 4-5mm gap at the bottom for the led cables to fit in and also space the holders in a way that they don't interfere. You need two holders per side.

For the electronics all you need is a raspberry pi, best to use a zero w to save space but you could also cramp in a full size model and you also need a power supply to power the pi. Depending on the voltage of your led strip you can dircetly power the pi of of that or use a buckconverter like me. An easy and cheap way to step down 12v for your pi is to use a usb zigarette lighter plug. Just make sure whatever you are using can handle at least 2A.

For power I just used a 12v barrel jack connector on the side of the table.

The leds can be wired to just about any GPIO pin and you have to connect GND as well. The pin used can be defined in the .env file.

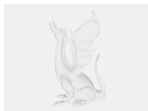
Model files



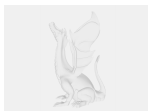
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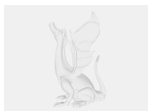
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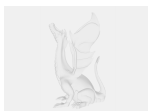
sidepanelholder.f3d



matrixdivider_1.dxf



sidepanelholder.step



matrixdivider_2.dxf



sidepanelholder.3mf



divider2.3mf



dividerwhole.3mf



divider1.3mf

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