



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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SparkFun Lumenati 90R

COM-14358 [Open Source Hardware](#)



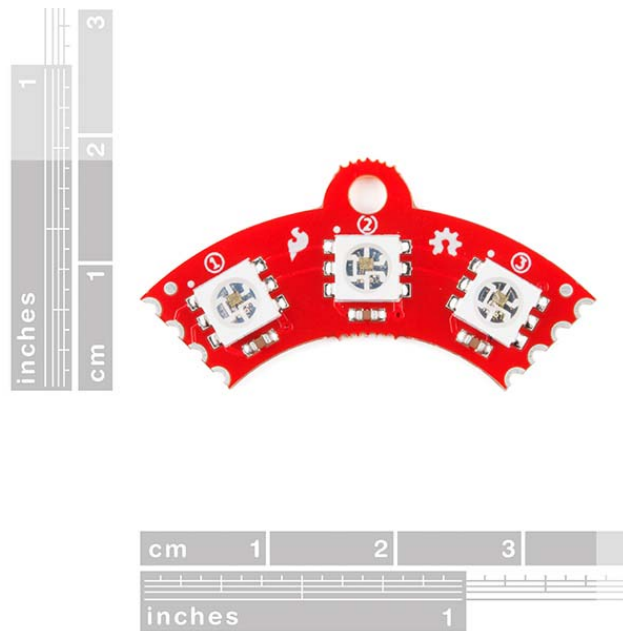
The SparkFun Lumenati 90R is a small quarter-circle board equipped with three APA102C LEDs and a single mounting position that has been designed to give your projects an edge in their lighting capacity. The 90R board has been specifically designed to be daisy-chained with other Lumenati boards, thanks to the castellated edge connectors at each end allowing for multiple design options and formations. Additionally, we have labeled the APA102C LEDs on each board with numbers indicating their position in the sequence to help you write code more easily. We especially love using the Lumenati boards to give our flying race drones a bit of style and panache.

The Lumenati 90R gets its name from the 90° angle it takes and the direction the signal and power flow. Combining four of the 90R boards creates a 12-LED ring with enough space in the center for a Lumenati 8-pack board. If you want to create more than just a small ring, you can also solder on 8-stick boards to the 90R to create outlines of different shapes and sizes.

The APA102C addressable LEDs operate on +5V power input, as well as 0–5V logic levels for clock and data, and employ a 2-wire communication protocol consisting of a clock line and a data line. While this requires one more wire than standard WS2812B LEDs, the advantage is that the communication with the LEDs becomes somewhat timing-independent, allowing you to run these directly off of a Raspberry Pi or other single-board computer that doesn't normally allow for a long, precisely timed data stream without the use of additional hardware.

Note: There are two solder jumpers on the back of the 90R labeled CO and DO (clock out and data out) that can be cut to interrupt those signals in case you make a closed-loop design where you don't want the clock and data from your last LED to interfere with the clock and data to your first. It is *critical* that you cut the traces in the jumpers of the last board in the loop before you power up your LEDs if you've put together a continuous loop of Lumenati boards. Otherwise, it is likely that you'll burn out a couple of LEDs.

- Dimensions: 35.7mm x 17.7mm x 3.2mm (1.4" x 0.7" x 0.12")
- Weight: 1.4g



Notice. This product requires other products in order to function properly.
 See [essential products](#).

Essentials	
SparkFun SAMD21 Mini Breakout	DEV-13664
SparkFun Logic Level Converter - Bi-Directional	BOB-12009
Wall Adapter Power Supply - 5.1V DC 2.5A (USB Micro-B)	TOL-13831
Soldering Iron - 30W (EU, 230VAC)	TOL-11650

<https://www.sparkfun.com/products/14358> 10-17-17