



SparkFun Lumenati 90L

COM-14452 [Open Source Hardware](#)



The SparkFun Lumenati 90L 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 90L 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 90L gets its name from the 90° angle it takes and the direction the signal and power flows. Combining four of the 90L 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 90L 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 90L 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

