



# Adafruit NeoPixel Digital RGB LED Strip

## 144 LED – 1m White – WHITE

Product ID: 1507



## Description

We crammed ALL THE NEOPIXELS into this strip! An unbelievable 144 individually-controllable LED pixels on a flexible PCB. It's completely out of control and ready for you to blink. This strip has a white mask, and an extra heavy flex PCB.

These LED strips are even more fun and glowy. There are 144 RGB LEDs per meter, and you can control each LED individually! Yes, that's right, this is the digitally-addressable type of LED strip. You can set the color of each LED's red, green and blue component with 8-bit PWM precision (so 24-bit color per pixel). The LEDs are controlled by shift-registers that are chained up and down the strip so you can shorten or lengthen the strip. Only 1 digital out pin is required to send data. The PWM is built into each LED-chip so once you set the color you can stop talking to the strip and it will continue to PWM all the LEDs for you.

All your high-density LED dreams answered, yet there are a few things to watch for.

- First up, the ultra-high density means much higher power usage over a certain distance –35 Watts max (~7 Amps @ 5V). The max rating is assuming all the LEDs are on full white, usually the actual current for colorful design is about 1/3 to 1/2 the max current. A good power supply such as our 5V 10A supply is key!
- Second, to get high density, the controller chip is inside the LED, which is kind of cool, but also means that the chip only uses a single pin for input and a single pin for output. The protocol used is very very timing-specific and can only be controlled by microcontrollers with highly repeatable 100nS timing precision. We have example code for using with the Arduino Uno/Mega microcontroller at 8MHz and 16MHz, and with a little effort you can use with the Raspberry Pi, or Beagle Bone Black, but it will not work with the Basic Stamp, NETduino, any other interpreted/virtual machine microprocessor or any processor slower than 8 MHz. For those processors, check our DotStar digital LED strip which has SPI-like input/output and works easily with Pi, NETduino, and other processors.
- Third, just because you have all those pixels doesn't mean you have the RAM for it – the entire strip must be buffered in memory, and we've found many Arduino UNO projects only have about 1500 bytes of RAM available after all the extras are included – enough for about 2–3 meters of the 144 LED pixels. If you want to drive multiple meters and have some other libraries included, use a Mega.
- This strip now comes with a weatherproof sheathing, you can remove it if not wanted, with a pair of scissors

The strip is made of flexible PCB material, you can cut this stuff pretty easily with wire cutters. Solder to the 0.1" copper pads at the ends and you're good to go. Of course, you can also connect strips together to make them longer, just watch how much current you need! We have a 5V/4A supply that should be able to drive 1 meter (depending on use) and a 5V/10A supply that can drive up to 2 meters (depending on use) You must use a 5V DC power supply to power these strips, do not use higher than 6V or you can destroy the entire strip.

They come in 1 meter strips with a 2 or 3-pin JST SM connector on each end and separated power/ground wires. These strips are sold by the meter! There is a join in the middle of the strip and the LEDs are not perfectly spaced at that point – it's just a tradeoff with the ability of the flex PCB maker and density.

To wire up these strips we suggest picking up a 2.1mm DC jack to wire in so you can connect one of our wall adapters to power it. For the data + ground pins, you can pick up 2-pin JST set to turn it into a quick connection.

Our detailed NeoPixel Uberguide has everything you need to use NeoPixels in any shape and size. Including ready-to-go library & example code for the Arduino UNO/Duemilanove/Diecimila, Flora/Micro/Leonardo, Trinket/Gemma, Arduino Due & Arduino Mega/ADK (all versions)

YouTube Link:

[https://www.youtube.com/watch?v=HO6xQMR8naw&embeds\\_referring\\_euri=https%3A%2F%2Fwww.adafruit.com%2F&feature=emb\\_imp\\_woyt](https://www.youtube.com/watch?v=HO6xQMR8naw&embeds_referring_euri=https%3A%2F%2Fwww.adafruit.com%2F&feature=emb_imp_woyt)

## Technical Details

Technical specs:

- Strip Width in Casing: 13.8mm / 0.54"
- Strip Thickness in Casing: 4mm / 0.16"
- 144 LEDs per meter
- Maximum 5V @ 60mA draw per LED (all LEDs on full brightness)
- 5VDC power requirement (do not exceed 6VDC) – no polarity protection!
- 1 integrated RGB LEDs per segment, individually controllable
- LED wavelengths: 630nm/530nm/475nm
- Connector: 3-pin JST SM
- Dimensions: 1000mm / 39.37" x 12mm / 0.47"
- Power Lead: 196.85mm / 7.75"
- Connect Lead: 92.07mm / 3.62"
- Weight: 35.42g
- [WS2812 Datasheet](#)
- [SKC6812RV Datasheet](#)
- May ship with either WS2812B or SK6812-based LEDs. They are the same brightness, color and protocol

Revision History:

- As of June 22, 2022 – We have changed the specific part number to be SKC6812RV LEDs. They are the same pinout, shape, color order, and protocol as WS2812Bs. SKCs are more durable against negative polarity and high voltage spikes on the power lines.

