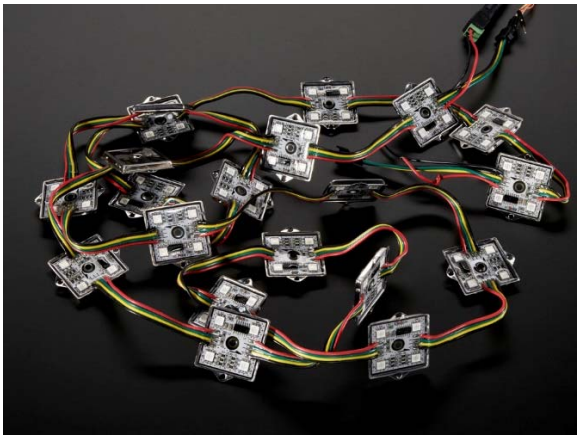




36mm Square 12V Digital RGB LED Pixels (Strand of 20) - WS2801

PRODUCT ID: 683

RGB Pixels are digitally-controllable lights you can set to any color, or animate. Each metal 'pixel square' contains 4 RGB LEDs and a controller chip soldered to a PCB. The pixel is then 'flooded' with epoxy to make it water resistant, however we cannot say 100% waterproof you may need to apply additional epoxy for some applications/needs/use. These are fairly large pixels but they have a lot of nice mounting options, such as two metal flanges on the side and a 0.15"/4mm diameter hole in the middle so you can screw them directly onto a surface. They're typically used to make outdoor signs. Compared to our other LED dots, these are much bigger and much brighter, good for larger scale installations.

The pixels are connected by a 4-conductor cable. +12VDC, ground, data and clock. Data is shifted down from one pixel to the next so that you can easily cut the strand or attach more onto the end.

Each dot is digitally controlled, with an internal 8-bit PWM LED driver (24-bit color for 16 million different shades). The pixels must be clocked by a microcontroller, we have an example code linked below that works on an Arduino, it should be simple to adapt it to any other microcontroller.

The pixels use 4 x 5050 RGB LEDs, with a 120 degree beam width. All of the LEDs are controlled at once so you cannot have one pixel with the four LEDs different colors. (Color control is per single square 4-LED pixel only) The total max brightness of all LEDs is about 6000mcd. (Please note: mcd ratings of LEDs are notoriously inflated by most LED sellers, so be extra-skeptical when reviewing LED ratings!)

Sold by the strand, each strand has 20 pixels in series! Each strand has two JST SM 3-pin connectors so you can connect multiple strands in a row, as many as you wish, just watch for how much current they want. The two power wires are brought out separately to make wiring easier, a 2.1mm terminal block adapter is handy here to attach a DC power supply. We have a 12V/5A supply that should be able to drive 2 or more strands (depending on current use). The LEDs are constant-current driven so you'll have even colors through-out the strand as long as you have a stable 12V supply

You can drive these with an Arduino using any two microcontroller digital pins, check this library which also has example code to demonstrate the strands and be sure to read our very detailed tutorial on usage!

TECHNICAL DETAILS

- 36mmx36mm squares (1.4") 5mm deep (0.2")
- 75mm / 3" apart on the strand
- 20 pieces per strand
- These pixels use a WS2801 chip for full 24 bit color, constant-current drive
- 12VDC power, 120mA maximum per pixel (LED on full white)
- 2-pin SPI-like protocol
- WS2801 Datasheet for the chip inside each pixel

- Brightness per pixel: 6000 mcd combined (we'll try to get a datasheet for the LEDs)

