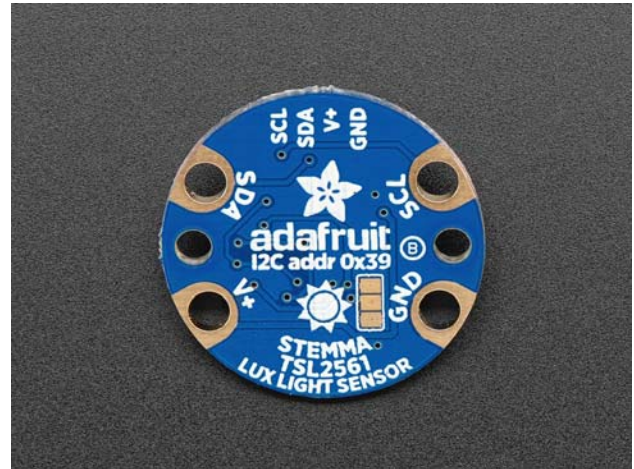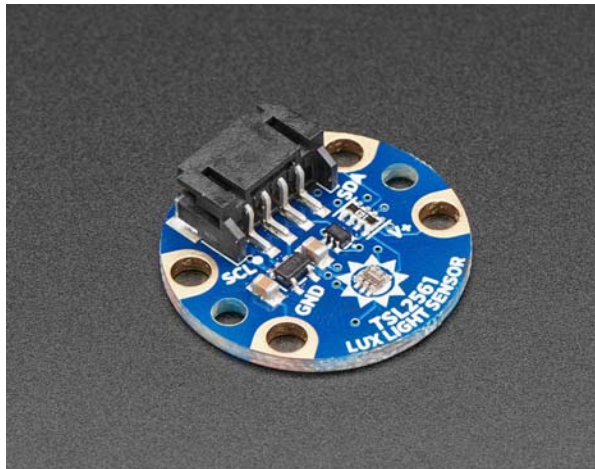![Adafruit Industries logo]

STEMMA – TSL2561 Digital Lux / Light Sensor   PRODUCT ID: 3611

Description

New from Adafruit, we are taking our most popular sensors and making them easier than ever to use! This is the Adafruit STEMMA TSL2561 which takes our favorite lux sensor and gives you two ways to play: you can use alligator clips to connect the sensor to your Flora, Gemma or Circuit Playground, or plug-n-play with STEMMA cables or Seeed Grove cables

Each STEMMA board has level-shifting and protection circuitry on the power supply and data lines so you can design with no worries about incompatibilities or accidents.

The TSL2561 luminosity sensor is an advanced digital light sensor, ideal for use in a wide range of light situations. Compared to low cost CdS cells, this sensor is more precise, allowing for exact lux calculations and can be configured for different gain/timing ranges to detect light ranges from up to 0.1 - 40,000+ Lux on the fly. The best part of this sensor is that it contains both infrared and full spectrum diodes! That means you can separately measure infrared, full-spectrum or human-visible light. Most sensors can only detect one or the other, which does not accurately represent what human eyes see (since we cannot perceive the IR light that is detected by most photo diodes)

The sensor has a digital (i2c) interface. You can select one of three addresses so you can have up to three sensors on one board - each with a different i2c address. The built in ADC means you can use this with any microcontroller, even if it doesn't have analog inputs. The current draw is extremely low, so its great for low power data-logging systems. about 0.5mA when actively sensing, and less than 15 uA when in powerdown mode.

Of course, we wouldn't leave you with a datasheet and a "good luck!" - we wrote a detailed tutorial showing how to use it with an Arduino and example code that gets readings and calculates lux https://cdn-learn.adafruit.com/downloads/pdf/tsl2561.pdf

Technical Details

- o Approximates Human eye Response
- o Precisely Measures Illuminance in Diverse Lighting Conditions
- o Temperature range: -30 to 80 *C
- o Dynamic range (Lux): 0.1 to 40,000 Lux
- o Voltage range: 2.7-3.6V
- o Interface: I2C
- o This board/chip uses I2C 7-bit addresses 0x39 (default), 0x29, 0x49, selectable with jumpers

We have a detailed tutorial showing how to use it with an Arduino and example code that gets readings and calculates Lux https://cdn-learn.adafruit.com/downloads/pdf/tsl2561.pdf

Product Dimensions: 25.8mm x 25.8mm x 7.3mm / 1.0" x 1.0" x 0.3"

Product Weight: 2.0g / 0.1oz