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#https://github.com/adafruit/Adafruit_CircuitPython_TSL2591
#pip3 install adafruit-circuitpython-tsl2591

# Simple demo of the TSL2591 sensor. Will print the detected light value
# every second.
import time
import board
import busio
import adafruit_tsl2591

# Initialize the I2C bus.
i2c = busio.I2C(board.SCL, board.SDA)

# Initialize the sensor.
tsl2591 = adafruit_tsl2591.TSL2591(i2c)

# You can optionally change the gain and integration time:
#tsl2591.gain = adafruit_tsl2591.GAIN_LOW (1x gain)
#tsl2591.gain = adafruit_tsl2591.GAIN_MED (25x gain, the default)
#tsl2591.gain = adafruit_tsl2591.GAIN_HIGH (428x gain)
#tsl2591.gain = adafruit_tsl2591.GAIN_MAX (9876x gain)
#tsl2591.integration_time = adafruit_tsl2591.INTEGRATIONTIME_100MS (100ms, default)
#tsl2591.integration_time = adafruit_tsl2591.INTEGRATIONTIME_200MS (200ms)
#tsl2591.integration_time = adafruit_tsl2591.INTEGRATIONTIME_300MS (300ms)
#tsl2591.integration_time = adafruit_tsl2591.INTEGRATIONTIME_400MS (400ms)
#tsl2591.integration_time = adafruit_tsl2591.INTEGRATIONTIME_500MS (500ms)
#tsl2591.integration_time = adafruit_tsl2591.INTEGRATIONTIME_600MS (600ms)

# Read the total lux, IR, and visible light levels and print it every second.
while True:
    try:
        # Read and calculate the light level in lux.
        tsl2591_lux = tsl2591.lux
        # You can also read the raw infrared and visible light levels.
        # These are unsigned, the higher the number the more light of that type.
        # There are no units like lux.
        # Infrared levels range from 0-65535 (16-bit)
        tsl2591_infrared = tsl2591.infrared
        # Visible-only levels range from 0-2147483647 (32-bit)
        tsl2591_visible = tsl2591.visible
        # Full spectrum (visible + IR) also range from 0-2147483647 (32-bit)
        tsl2591_full_spectrum = tsl2591.full_spectrum
        time.sleep(2.0)
    except (KeyboardInterrupt):
        print("Tchau!")
        exit("Tchau")
    except:
        print("Erro TSL2591!")
        time.sleep(5)
    else:
        print("Luz total: %d lux"%tsl2591_lux)
        print('Luz infravermelha: %d'%tsl2591_infrared)
        print('Luz visivel: %d'%tsl2591_visible)
        print('Espectro completo (Infravermelha + visivel): %d'%tsl2591_full_spectrum)
        print("-"*70)

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