
AdafruitVEML7700 Library Documentation

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CircuitPython driver for VEM7700 high precision I2C ambient light sensor.

This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)
- [Register](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).

1.1 Installing from PyPI

On supported GNU/Linux systems like the Raspberry Pi, you can install the driver locally [from PyPI](#). To install for current user:

```
pip3 install adafruit-circuitpython-veml7700
```

To install system-wide (this may be required in some cases):

```
sudo pip3 install adafruit-circuitpython-veml7700
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name
python3 -m venv .env
source .env/bin/activate
pip3 install adafruit-circuitpython-veml7700
```


CHAPTER 2

Usage Example

```
import time
import board
import busio
import adafruit_veml7700

i2c = busio.I2C(board.SCL, board.SDA)
veml7700 = adafruit_veml7700.VEML7700(i2c)

while True:
    print("Ambient light:", veml7700.light)
    time.sleep(0.1)
```


CHAPTER 3

Contributing

Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.

CHAPTER 4

Documentation

For information on building library documentation, please check out [this guide](#).

5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/veml7700_simpletest.py

```
1 import time
2 import board
3 import busio
4 import adafruit_veml7700
5
6 i2c = busio.I2C(board.SCL, board.SDA)
7 veml7700 = adafruit_veml7700.VEML7700(i2c)
8
9 while True:
10     print("Ambient light:", veml7700.light)
11     time.sleep(0.1)
```

5.2 adafruit_veml7700

CircuitPython driver for VEML7700 high precision I2C ambient light sensor.

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5.2.1 Implementation Notes

Hardware:

- Adafruit VEML7700

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice
- Adafruit's Register library: https://github.com/adafruit/Adafruit_CircuitPython_Register

class `adafruit_veml7700.VEML7700` (*i2c_bus*, *address=16*)

Driver for the VEML7700 ambient light sensor.

Parameters `i2c_bus` (*busio.I2C*) – The I2C bus the VEML7700 is connected to.

gain_value ()

Gain value in integer form. Used for calculating resolution.

integration_time_value ()

Integration time value in integer form. Used for calculating resolution.

light

Ambient light data.

This example prints the ambient light data. Cover the sensor to see the values change.

```
import time
import board
import busio
import adafruit_veml7700

i2c = busio.I2C(board.SCL, board.SDA)
veml7700 = adafruit_veml7700.VEML7700(i2c)

while True:
    print("Ambient light:", veml7700.light)
    time.sleep(0.1)
```

light_gain

ALS_GAIN_2, ALS_GAIN_1, ALS_GAIN_1_4, ALS_GAIN_1_8.

This example sets the ambient light gain to 2 and prints the ambient light sensor data.

```
import time
import board
import busio
import adafruit_veml7700

i2c = busio.I2C(board.SCL, board.SDA)
veml7700 = adafruit_veml7700.VEML7700(i2c)

veml7700.light_gain = veml7700.ALS_GAIN_2

while True:
    print("Ambient light:", veml7700.light)
    time.sleep(0.1)
```

Type Ambient light gain setting. Gain settings are 2, 1, 1/4 and 1/8. Settings options are

light_high_threshold

Ambient light sensor interrupt high threshold setting.

light_integration_time

ALS_25MS, ALS_50MS, ALS_100MS, ALS_200MS, ALS_400MS, ALS_800MS.

This example sets the ambient light integration time to 400ms and prints the ambient light sensor data.

```
import time
import board
import busio
import adafruit_veml7700

i2c = busio.I2C(board.SCL, board.SDA)
veml7700 = adafruit_veml7700.VEMl7700(i2c)

veml7700.light_integration_time = veml7700.ALS_400MS

while True:
    print("Ambient light:", veml7700.light)
    time.sleep(0.1)
```

Type Ambient light integration time setting. Longer time has higher sensitivity. Can be

light_interrupt

Enable interrupt. True to enable, False to disable.

light_interrupt_high

Ambient light high threshold interrupt flag. Triggered when high threshold exceeded.

light_interrupt_low

Ambient light low threshold interrupt flag. Triggered when low threshold exceeded.

light_low_threshold

Ambient light sensor interrupt low threshold setting.

light_shutdown

Ambient light sensor shutdown. When True, ambient light sensor is disabled.

lux

Light value in lux.

This example prints the light data in lux. Cover the sensor to see the values change.

```
import time
import board
import busio
import adafruit_veml7700

i2c = busio.I2C(board.SCL, board.SDA)
veml7700 = adafruit_veml7700.VEMl7700(i2c)

while True:
    print("Lux:", veml7700.lux)
    time.sleep(0.1)
```

resolution()

Calculate the resolution necessary to calculate lux. Based on integration time and gain settings.

white

White light data.

This example prints the white light data. Cover the sensor to see the values change.

```
import time
import board
import busio
import adafruit_veml7700

i2c = busio.I2C(board.SCL, board.SDA)
veml7700 = adafruit_veml7700.VEML7700(i2c)

while True:
    print("White light:", veml7700.white)
    time.sleep(0.1)
```

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