Grove - UV Sensor

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Wiki: http://www.seeedstudio.com/wiki/Grove_-_UV_Sensor

Bazaar: http://www.seeedstudio.com/depot/Grove-UV-Sensor-p-1540.html

Document Revision History

Revision	Date	Author	Description
1.0	Sep 21, 2015	Victor.He	Create file

Contents

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

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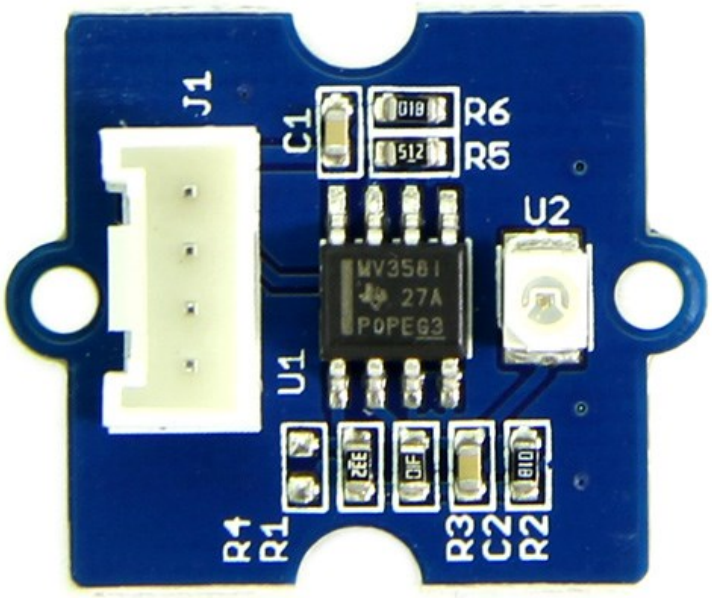
1. Introduction

The Grove – UV Sensor is used for detecting the intensity of incident ultraviolet(UV) radiation. This form of electromagnetic radiation has shorter wavelengths than visible radiation. The Grove - UV Sensor is based on the sensor GUVA-S12D which has a wide spectral range of 200nm-400nm. The module outputs electrical signal which varies with the UV intensity, which gives your suggestion if it is a good idea to beach today.



2. Features

- High stability
- Good Sensitivity
- Low power consumption
- Schottky type photodiode sensor
- Wide response range
- Grove Interface

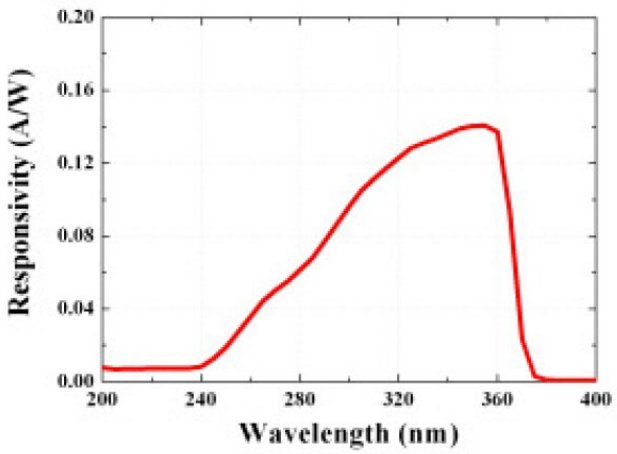
3. Specification

Item	Min	Typical	Max	Unit
Operating Voltage	3.0	5.0	5.1	VDC
Current		0.31		mA
Output Voltage				mV
Response wavelength	200	~	370	nm
Working Temperature	-30	~	85	℃

4. Usage

UV sensors are used in many different applications. Examples include pharmaceuticals, automobiles, and robotics. UV sensors are also used in the printing industry for solvent handling and dyeing processes. In addition, UV sensors are also used in the chemical industry for the production, storage, and transportation of chemicals.

The fact of the UV sensor work is: In sunlight, the UV index and Photocurrent are a linear relationship.



About our Grove - UV Sensor, we have converted Photocurrent to corresponding voltage value collected by Arduino/Seeeduino. The output voltage and the UV index is linear:

illumination intensity = 307 * Vsig

where:

Vsig is the value of voltage measured from the SIG pin of the Grove interface, unit V.

illumination intensity unit: mW/m^2 for the combination strength of UV light with wavelength range: 240nm~370nm

Note: To calculate the UV index value, please refer to http://www2.epa.gov/sunwise/uv-index. It's hard to say that the measurement from this sensor can be converted to the EPA standard UV index, but can be estimated roughly.

UV Index = illumination intensity / 200

4.1 Example

- Connect it to A0 port of Grove - Base Shield.
- Plug the Grove - Base Shield into Arduino/Seeeduino and connect them to PC using a USB cable.
- The demo code as show below.

```
void setup(){

    Serial.begin(9600);
}

void loop()
{
    int sensorValue;
    long  sum=0;
    for(int i=0;i<1024;i++)
    {
        sensorValue=analogRead(A0);
        sum=sensorValue+sum;
        delay(2);
    }
    sum = sum >> 10;
    Serial.print("The voltage value:");
    Serial.print(sum*4980.0/1023.0);
    Serial.println("mV");
    delay(20);
    Serial.print("\n");

}
```

5. Resource

Grove - UV Sensor Eagle File

Grove - UV Sensor Schematic.pdf

UV Sensor Datasheet