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Gravity: I2C VEML7700 Ambient Light Sensor SKU: SEN0228

Introduction

VEML7700 is a high accuracy ambient light digital 16-bit resolution sensor. It includes a high sensitive photo diode, a low noise amplifier, a 16-bit A/D converter and supports an easy to use Gravity I2C interface. It outputs a digital signal directly and no need for complicated calculations. This is a more acurate and easier to use version of the simple foto resistor which only outputs a voltage that needs to be calculated in order to obtain meaningful data. The data which is output by this sensor is directly output in Lux (Lx). When objects which are lighted in homogeneous get the 1 lx luminous flux in one square meter ,their light intensity is 1lx. Sometimes to take good advantage of the illuminant, you can add a reflector to the illuminant. So that there will be more luminous flux in some directions and it can increase the ilumination of the target surface.

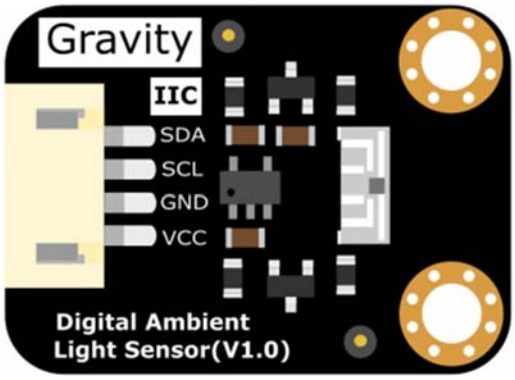
For example:

- Night: 0.001--0.02;
- Moonlightnight:0.02--0.3;
- Cloudy indoor:5--50;
- Cloudy outdoor:50--500;
- Sunny indoor:100--1000;
- Under the sunlight in summer afternoon: about 10*6 power;
- Reading books for intensity of illumination:50--60;
- Home video standard intensity of illumination:1400.

Specification

- Supply Voltage: 3.3-5V
- Working Current: 45uA
- Shutdown Mode: 0.5uA
- Measuring Range: 0-120klx
- Accuracy: 0.0036 lx / ct
- Working Temperature: -25 ℃ ~ +85 ℃
- Dimension: 30 × 22 (mm) /1.81 x0.866 (inches)
- Weight: 12g

Board Overview



Gravity: I2C VEML7700 Ambient Light Sensor

Num	Label	Description
1	SDA	IIC-Data
2	SCL	IIC-Clock
3	GND	GND
4	VCC	VCC

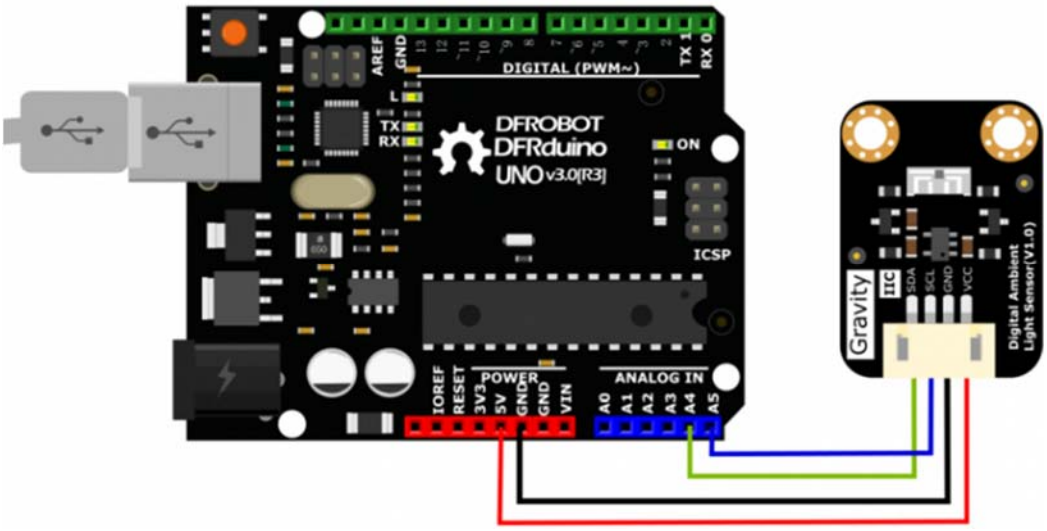
Tutorial

Requirements

- **Hardware**
  DFRduino UNO (or similar) x 1
  Gravity: I2C VEML7700 Ambient Light Sensor x1
  M-M/F-M/F-F Jumper wires

- **Software**
  Arduino IDE, Click to Download Arduino IDE from Arduino®
  https://www.arduino.cc/en/Main/Software%7C

Connection Diagram



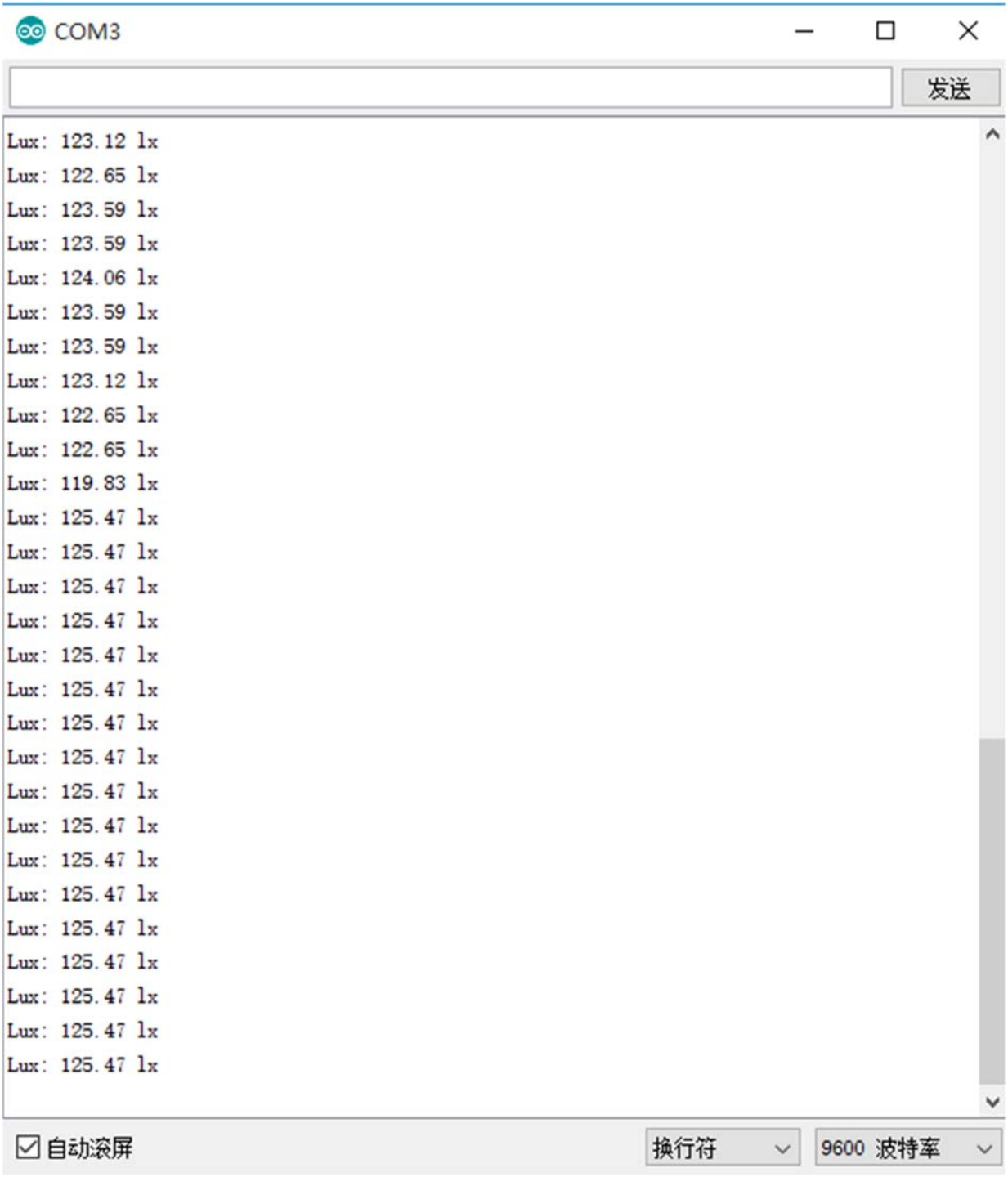
Arduino Connection

Sample Code

Download VEML7700 Arduino Library https://github.com/DFRobot/DFRobot_VEML7700
How to install Libraries in Arduino IDE https://www.arduino.cc/en/Guide/Libraries#.UxU8mdzF9H0%7C

```
/*!
 * @file readVEML770.ino
 * @brief DFRobot's Digital Ambient Light Sensor
 * @n This example read the Lux from Digital Ambient Light Sensor, and then p
rint them
 *
 * @copyright   [DFRobot](http://www.dfrobot.com), 2016
 * @copyright   GNU Lesser General Public License
 *
 * @version  V1.0
 * @date  2016-12-06
 */



#include <Wire.h>
#include "DFRobot_VEML7700.h"

DFRobot_VEML7700 als;

void setup()
{
  Serial.begin(9600);
  als.begin();
}

void loop()
{
  float lux;
  Serial.print("Lux: ");//Read Lux and print
  Serial.print(lux);
  Serial.println(" lx");
  delay(500);
}
```

Expected Results



Result