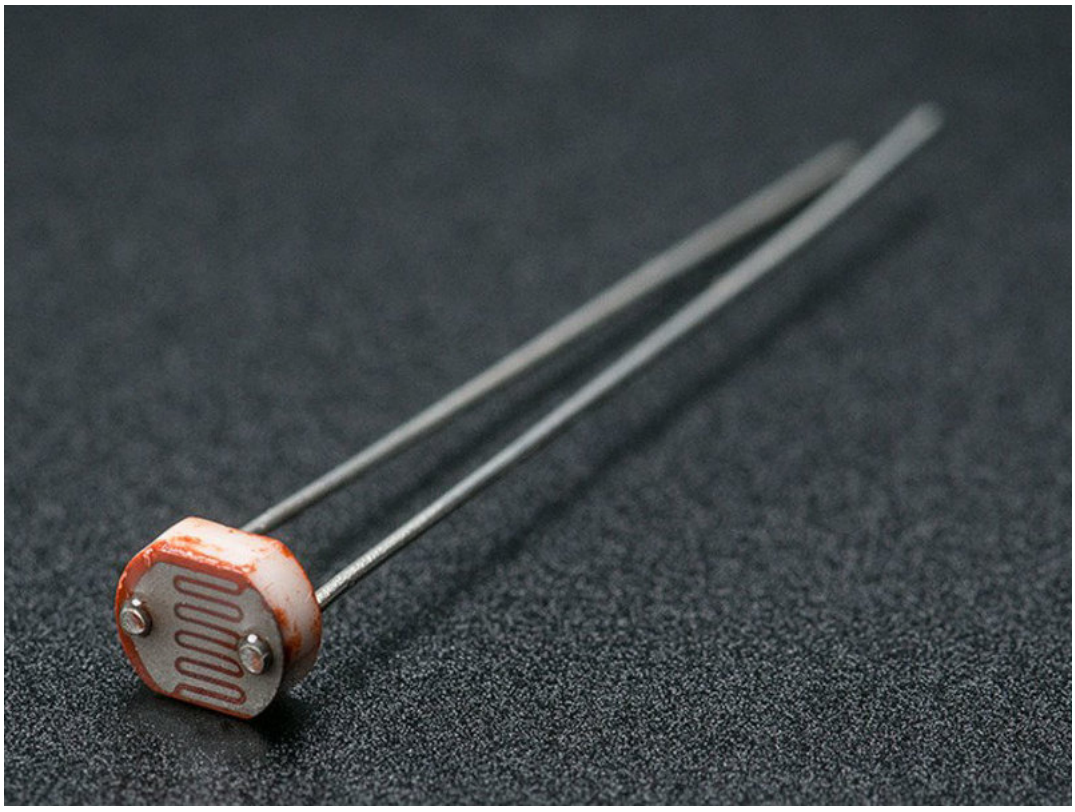


# Photocells

CdS Cells, Photoresistors, & Light Dependent Resistors (LDR)

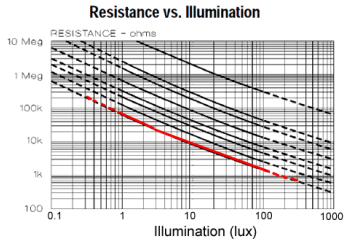


**Contributors**

lady ada
Feedback? Corrections?
SENSORS / LIGHT

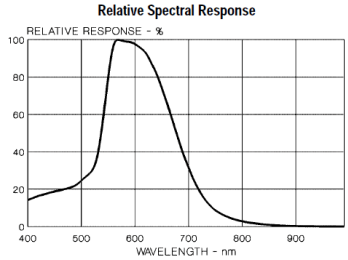
# Measuring Light

by lady ada
As we've said, a photocell's resistance changes as the face is exposed to more light. When its dark, the sensor looks like an large resistor up to 10MΩ, as the light level increases, the resistance goes down. This graph indicates approximately the resistance of the sensor at different light levels. Remember each photocell will be a little different so use this as a guide only!




Note that the graph is not linear, its a log-log graph!

Photocells, particularly the common CdS cells that you're likely to find, are not sensitive to all light. In particular they tend to be sensitive to light between 700nm (red) and 500nm (green) light.




Basically, blue light wont be nearly as effective at triggering the sensor as green/yellow light!

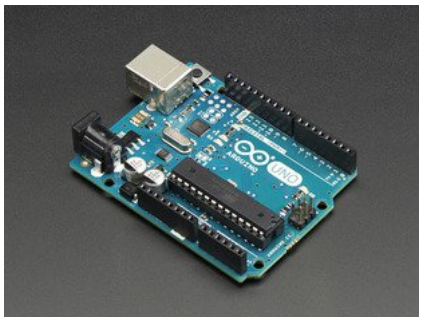
# What the Heck is Lux?

Most datasheets use lux to indicate the resistance at certain light levels. But what is lux ? Its not a method we tend to use to describe brightness so its tough to gauge. Here is a table adapted from a Wikipedia article on the topic!

| Illuminance | Example |
|---|---|
| **0.002 lux** | Moonless clear night sky |
| **0.2 lux** | Design minimum for emergency lighting (AS2293). |
| **0.27 - 1 lux** | Full moon on a clear night |
| **3.4 lux** | Dark limit of civil twilight under a clear sky |
| **50 lux** | Family living room |
| **80 lux** | Hallway/toilet |
| **100 lux** | Very dark overcast day |
| **300 - 500 lux** | Sunrise or sunset on a clear day. Well-lit office area. |
| **1,000 lux** | Overcast day; typical TV studio lighting |
| **10,000 - 25,000 lux** | Full daylight (not direct sun) |
| **32,000 - 130,000 lux** | Direct sunlight |

OVERVIEW TESTING A PHOTOCELL
Last updated on 2015-11-19 at 06.27.51 PM Published on 2012-07-29 at 11.58.38 AM

Photo cell (CdS photoresistor)
$0.95 ADD TO CART



Arduino Uno R3 (Atmega328 - assembled)
$24.95 ADD TO CART

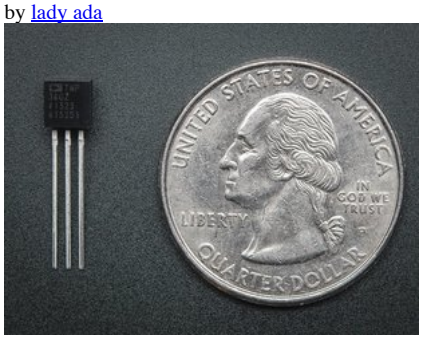
Half-size breadboard
$5.00 ADD TO CART
ADD ALL TO CART

## RELATED GUIDES

POPULAR

#### TMP36 Temperature Sensor

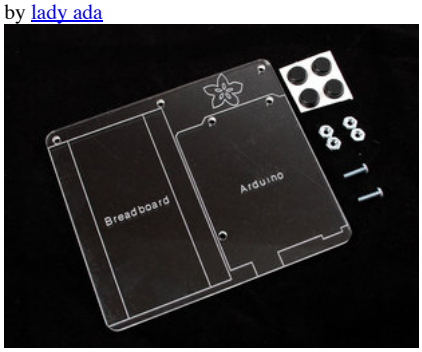
Reading temperatures to 0.1 degree precision!
by lady ada




An analog temperature sensor is pretty easy to explain, its a chip that tells you what the ambient temperature is. This guide will show you how an analog temperature sensor works, how to wire one up, and some project examples.

#### Arduino Prototyping Mounting Plate

Securely hold your Arduino next to a breadboard
by lady ada




By popular demand! We now have the plates from the ARDX available separately. Acrylic plate is engraved and cut here at the Adafruit factory. There are mounting holes for your Arduino and a space that fits a half sized breadboard very nicely.
FEATURED

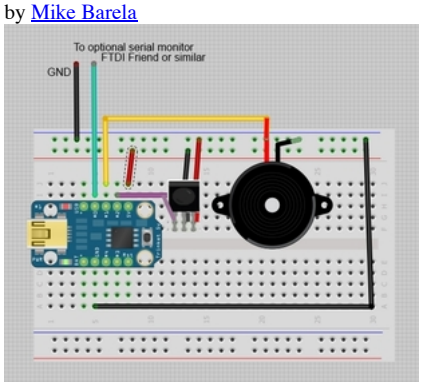
#### Electronic Demon Costume

RAAAAAWR!
by Phillip Burgess

Spark the demon is a costume featuring an Arduino-based voice changer, an animated LED matrix face and glowing EL wire wings. This short guide answers some common questions and collects links to the relevant tutorials and videos that may be helpful in your own Halloween creations.

**Trinket / Gemma IR Control**

Use a Trinket or Gemma to determine the IR codes from your remote and use the codes in your own program to trigger events
by Mike Barela




Trinket and Gemma are perfect for small projects needing to receive some external event, triggering your own defined output. This project uses the Adafruit IR Sensor to first receive IR commands from a remote, then to use those codes in controlling a project of your own.
×

**OUT OF STOCK NOTIFICATION**

YOUR NAME
YOUR EMAIL
NOTIFY ME