

## Experiment #7 InfraRed “IR” Sensors

References - <https://www.instructables.com/id/How-to-setup-a-Pololu-Carrier-with-Sharp-GP2Y0A60S/>

Setup{

Serial.begin(9600); // 9600 is the baud rate of the serial monitor interface

Function calls

1. Serial.print( “ literal” or variable ); // sends printable string to monitor
2. Serial.println( “literal” or variable); // send string and CR/LF to monitor “newline”

### Calibration

#### Stationary testing

Place the following code in the loop function to perform stationary response test. Place the robot 6 inches from the target and run the program. Don’t forget to start the Serial monitor. You can slow or speed the response by editing the delay.

```
Serial.print("Short Sensor = ");  
Serial.print(analogRead(A0));  
Serial.print("Mid Sensor = ");  
Serial.println(analogRead(A1));  
delay(100);
```

### Procedure

The following code is a standalone function to take calibration data with incremental motion. The “inc” variable controls the distance between sample points and the mean data of 500 samples at each distance. The “i” loop controls the number of steps taken, 60 in this example

```
void cal(){  
  int i, j;  
  long sum, mean;  
  float inc, dist;  
  inc = 1.0;  
  for (i = 0; i < 60; i++){  
    sum = 0;  
    dist = i * inc;  
    for (j = 0; j < 500; j++){  
      sum += analogRead(A0);  
    }  
    mean = sum/j;  
    Serial.print(" Dist = ");
```

```
Serial.print(dist);  
Serial.print(" Mean = ");  
Serial.println(mean);  
mov(rev, inc, 500);  
delay(250);  
    }  
}
```