Motion Detection and Tracking Sensor

Description

This IR motion detector sensor works by emitting IR light onto an object and then detecting the reflected IR. The IR LEDs can be controlled by a digital output so that ambient light as well as reflected light can be measured. Your microcontroller needs 4 analog inputs available to use this sensor. The sensor will track motion up & down and left & right.

The method of tracking used here is very simple. It is based on how insects detects motion in mother nature.
The software simply moves the servo until both phototransistors get the same amount of IR. If the object moves to one side then one sensor will get more IR than another and the servo turns to correct the imbalance.

This IR compound eye mounted on a pan/tilt assembly can be used by a robot to track movement within 200mm.

It comes pre-assembled in a plastic bag with printed cardboard header. Bolts and nuts, heat shrink and instructions are included.

**Pin Connection**

pin1: is Vcc (+5V)  
pin2: pin5 is analog output  
Pin6: Digital input (IR leds)  
pin7: is ground

**Arduino Code**

```cpp
const int eyeRight = A0;  
const int eyeTop = A1;  
const int eyeBottom = A2;  
const int eyeLeft = A3;  
const int irTrigger = 8;  
const int ledRight = 9;  
const int ledTop = 10;  
const int ledBottom = 11;  
const int ledLeft = 12;  

int thresh = 250;

void setup() {  
  pinMode(irTrigger, OUTPUT);  
  pinMode(ledRight, OUTPUT);  
  pinMode(ledTop, OUTPUT);  
  pinMode(ledBottom, OUTPUT);  
```
pinMode(ledLeft, OUTPUT);
digitalWrite(irTrigger, HIGH);
}

void loop() {

    if(analogRead(eyeTop)>thresh)
        digitalWrite(ledTop, HIGH);
    else
        digitalWrite(ledTop, LOW);

    if(analogRead(eyeLeft)>thresh)
        digitalWrite(ledLeft, HIGH);
    else
        digitalWrite(ledLeft, LOW);

    if(analogRead(eyeRight)>thresh)
        digitalWrite(ledRight, HIGH);
    else
        digitalWrite(ledRight, LOW);

    if(analogRead(eyeBottom)>thresh)
        digitalWrite(ledBottom, HIGH);
    else
        digitalWrite(ledBottom, LOW);

}