Gravity: IR Positioning Camera For Ar

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INTRODUCTION

Want a robot to hunt down heat objects or navigated with fire? This is a small form factor IR camera capable of tracking up to four heat/IR sources. The applications are plenty and can go from tracking of robots with IR transmitters for navigation to light barriers, determining the direction where the object is going, and working as a flame sensor or tracking heat sources. It's fully compatible with Arduino with only four wires: two for power supply and two for I2C.

This infrared positioning camera can be controlled with Arduino, AVR via I2C interface. It is able to track mobile infrared points and to transmit the data back to host. The horizontal angle of camera is 33 degrees while the vertical angle is 23 degrees. It returns up to four points at a time when identifies an object. With advantages of high resolution, high sensitivity, high accuracy, small build and light weight, this Positioning IR Camera an be widely used in robot automatic search, robot soccer game, mobile trajectory recognition.

Whats more, this IR Camera can be used in making a low cost electronic whiteboard, touch screen and virtual reality headset, as seen in Johnny Lee's TED presentation (http://www.ted.com/talks/johnny_lee_demos_wii_remote_hacks?language=EN) about cheap Wii remote hacks.

Warning: Make sure the user knows about the power supply either directly on the sticker on the module or/and in the manual.

Gravity: IR Pos Camera For Ar

$23.55

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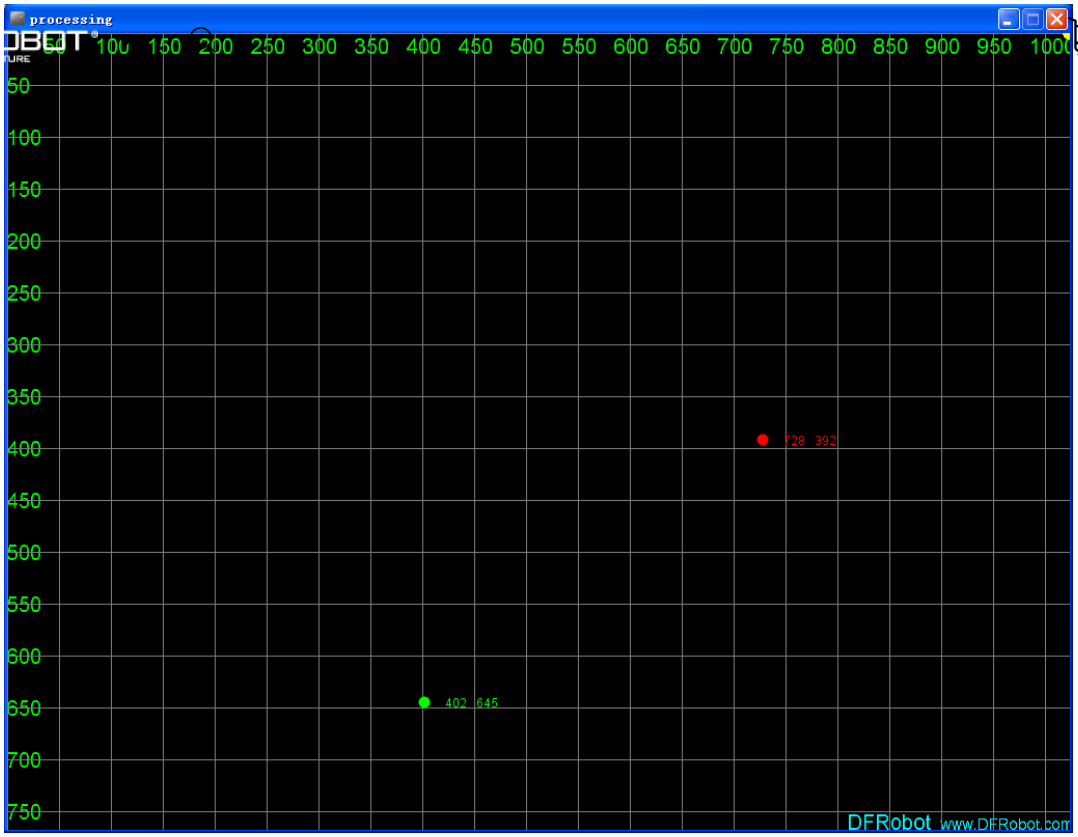


real-time position tracking with arduino and processing via I2C interface

BACK T

APPLICATIONS

- Tracking of robots with IR transmitters for navigation.
- Light barriers for determine the direction where the object is going to.
- Flame sensor, tracking of heat sources.

SPECIFICATION

- Operating voltage: 3.3-5v
- Interface: I2C
- Detecting distance: 0~3m
- Horizontal detecting angle: 33 degrees
- Vertical detecting angel: 23 degrees
- Dimensions: 32mm x 16mm(1.26x0.63")
- Resolution is 128x96 pixel, with hardware image processing, which can track four objects (IR emitting or reflecting objects)

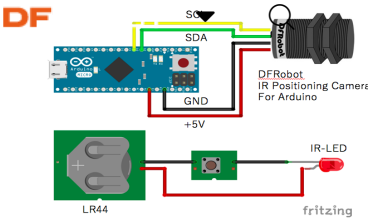
DOCUMENTS

- Wiki (Positioning ir camera) (https://wiki.dfrobot.com/Positioning_ir_camera__SKU_SEN0158)
- Datasheet (http://wiibrew.org/wiki/Wiimote#IR_Camera)

SHIPPING LIST

- Positioning IR Camera x1

TUTORIAL



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REVIEW

They worked great! Used with a 4 IR system to track the position of an object in 3D space and translate that to a mouse cursor position. These cameras were easy to work with and the libraries were spot on.

Chris.P 19/10/2023

Good quality IR camera it works pretty well, it took a while to arrive but overall shipping time is ok beside pandemics

Rodrigo. 24/05/2021

It is worth getting

EMMANUEL.ESQUIVEL 23/05/2021

More

Gravity Projects (https://community.dfrobot.com/tag-524.html)

FAQ

Àlex Palomares Gascón
a year ago

Good Morning.

Do you know when there will be stock?

Greetings.

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DFRobot Support Mod → Àlex Palomares Gascón
a year ago

Hi, good news, this product is available now, you can place an order.

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Javier Sará
a year ago

Do you know when there will be stock?

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DFRobot Support Mod → Javier Sará
a year ago

Hi, good news, this product is available now.

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Alpensturm
4 years ago

Hello everyone, I have the sample running in my Arduino IDE - so far, so good. What I actually need is C++ code that gives me the X-Y positions similar to the 'processing' screenshot above. I have a Windows C++ program that opens the serial port and listens to the incoming data. Is there some C++ sample code that shows the unpacking of the incoming serial port data? Thanks!

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DFRobot Support Mod → Alpensturm
4 years ago

hello, you need to write the c++ code by yourself.

0 0 Reply • Share ›

Juan David
4 years ago

Hello,
Is there someway to calibrate this camera?

1 0 Reply • Share ›

DFRobot Support Mod → Juan David
4 years ago

Hey Juan,
You can check out the following link to find out more about setting the cameras parameters:
http://wiibrew.org/wiki/Wii...

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golyalpha
7 years ago edited

Is there maybe some library available for easier usage of this camera? If there isn't it's fine, but if there was, it would be helpful.

EDIT: I can't get the example code for Processing to run, getting ArrayIndexOutOfBoundsException on Serial.list()[0]

1 0 Reply • Share ›

wendy golyalpha
6 years ago

Sorry ,I am afraid no.

3 0 Reply • Share ›

golyalpha wendy
6 years ago

So, it turns out a library for the WIIMote camera module is out there, and it is working flawlessly with this camera as well. It's called PVision. https://github.com/omwah/PV...

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EvidentlyEH golyalpha
6 years ago

Hi, did you every manage to resolve the processing code error? I am encountering the same error and at a loss on how to approach it.

Thanks!

0 0 Reply • Share ›

golyalpha EvidentlyEH
6 years ago

The issue is that your device needs to be plugged in before running the sketch in Processing.

I decided to re-do the entire thing, but in the end, I had to reinstall my PC and now it is lost.

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Ryan Nguyen
a year ago

Can it output temperature data also?

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DFRobot Support Mod Ryan Nguyen
10 months ago

Sorry it can't

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Ilyes2323
a year ago

Hi, I applied the tutorial on arduino micro but the camera is still not available and the red camera led is always red. What is the problem?

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DFRobot Support Mod Ilyes2323
10 months ago

Hi, Is data returned from the serial port and visual interface when using the example code or visual upper computer software?

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bashar younus
a year ago

helo
I need a camera witch have a flame detect with detect distance more than 7m. can you help me about that?

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DFRobot Support Mod bashar younus
10 months ago

Hi, Sorry, we don't have a flame sensor that far away right now.

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Claudio Andres Salazar Vasquez
a year ago

I bought 2 sensors but I realized that they are out of stock, any information on when they will have more units available?

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DFRobot Support Mod Claudio Andres Salazar Vasquez
10 months ago

Hi, the sensor has arrived and can be purchased outright if needed.

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Qwertyforever
2 years ago

Hi, when will the next batch be sold? Is there some huge company who bought up all the current stock and more, placing the rest of us small time buyers on a never ending backlog?

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DFRobot Support Mod → Qwertyforever
10 months ago

Hi, The sensor has arrived and can be purchased outright if needed.

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Mike Targaryen
2 years ago

Are these still being made?

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DFRobot Support Mod → Mike Targaryen
2 years ago

Yes it is

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Mike Targaryen → DFRobot Support
2 years ago

When will they be back in stock, no one has any are are quoting months on lead time for availablity, is it best to order through here as your the manufacturer?

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Evil Koala
2 years ago

When will you restock this?
I need it :P

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Hurga Roman Gnirf
2 years ago

Hello, I am trying to desing a case for this camera. Can you tell me what exact thread size this is? M20 does not seem to fit and is too tight.

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Hurga Roman Gnirf → Hurga Roman Gnirf
2 years ago edited

No worries, I found it. Its M18x1. Would be nice to see it in the datasheet though. ;)

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Newtron
3 years ago edited

What specs should I be looking for on an IR LED Emitter to work with the Gravity: IR Positioning Camera For Arduino like wavelength, viewing angle, etc?

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Liran Sorani
3 years ago edited

hi - just received 2 cameras. i uploaded the simpleDemo sketch to an arduino UNO and the readings i'm getting from the serial monitor are all 1023 - no matter where i point the camera to (i also set up 2 IR red leds). i use the most simple setup - just power, GND SCL and SDA - see attached picture. this is the same behavior with both cameras. View – uploads.disquscdn.com

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r2d2
3 years ago

what is the weight?

0 0 Reply • Share ›

mini Oval Kumquat

4 years ago

Hello~~ I input simpleDemo.ino this camera. but the message is device is not available.... I bought this last week, so I have to check if it's broken ... in a short time(to exchange)!! help me plz~~ let me know which parts I have to check in this situation.

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DFRobot Support Mod → mini Oval Kumquat
4 years ago

Hi, following the steps that we provide in the wiki. If you have some parts that isn't achived, please consult me.

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mini Oval Kumquat → DFRobot Support
4 years ago

Or should I use 4 leds at least...?

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mini Oval Kumquat → DFRobot Support
4 years ago

I input example code(arduino and processing).. I can get only (0,0,0,0,0,0,0,0)values.. and the values never change, so I changed led lighter than before.(led is ok because I can get data from other ir camera.) but It doesn't work. In my thinking, if I upload sample code, I can get x,y coordinates. but I don't know why... may I change any code? or have to adjust camera sensor(like bolt and nut)?

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DFRobot Support Mod → mini Oval Kumquat
4 years ago

what's your main board? It's uno?

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mini Oval Kumquat → DFRobot Support
4 years ago

I tested on nano board, too.. but the problem is exist

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mini Oval Kumquat → DFRobot Support
4 years ago

yes. I'm using arduino uno.. is that the problem??

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DFRobot Support Mod → mini Oval Kumquat
4 years ago

Hi, Is it normal to upload a program about uno to the uno board?
If it is normal, then connect the sensor to the main board, restart the main board and show me the result picture

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mini Oval Kumquat
4 years ago

hello~
What should I prepare to use this camera..? my purpose is to use this camera fix to the wall and attatch IR leds(2~4) to moving object, is it possible to detect 2D position? And Can I get data from this, using arduino uno??

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DFRobot Support Mod → mini Oval Kumquat
4 years ago

It can detect infrared signals and print the corresponding coordinates.

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alfonz senki
4 years ago edited

Hi,
can you tell me what is the wavelength of an IR LED that the camera is the most sensible for?

Finally the sample code worked but sensed the LED in a close distance only. I thought the LED I use either does not produce too much power, or the wavelength is out of the sensing range of the camera.

Do you think the camera is sensible enough to recognize an IR Laser pointer on the wall, so only the reflection light would hit the camera?
What would be the recommended power for sensing the reflection from 2.5-3m?

thanks
Akos

p.s.
I found the answers on the Wii wiki, which tells that: removed all the filters makes the camera able to track light object. Does it mean that the camera can sense red laser dot having removed filters? Do you have any experience of such set-up?

Optical Characteristics
The IR camera has an effective field of view is about 33 degrees horizontally and 23 degrees vertically (as measured on one unit). With the IR-pass filter intact, 940nm sources are detected with approximately twice the intensity of equivalent 850nm sources, but are not resolved as well at close distances. If the filter is removed, it can track any bright object. However, the IR filter referred to here is not only the dark plastic window of the wiimote but also a teensy slab of dichroic-coated glass inside the camera module. One may operate the wiimote having installed neither, one or the other, or both filters.

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DFRobot Support Mod → alfonz senki
4 years ago

we test that the wavelength of 850/890/940/950 is ok and the best effect is 940nm. it's better to control the distance between the range.

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alfonz senki
4 years ago

Hi,

I have just received mine. Unfortunately the sample code doesn't work (https://wiki.dfrobot.com/Po....

1. the Address is the 0x58, which is out commented in the code. I found that 0x58 is the I2C address with an address scan.
2. The code does not use this address, but creates another address with a bit shift (slaveAddress = IRsensorAddress >> 1;)
3. The Wire.endTransmission(); that closes the communication on I2C always comes back with ACK error. This could be because the address that the code uses (slaveAddress) is not the address where the device is listening.4.I fixed these and got back OK after endTransmission, but there is nothing come back. It cannot see any IR LED of any remote controller I have home. More over It cannot sense IR LEDs I installed diresct for the camera. IR LEDs work, because it consumes power.
5. The Wii Wiki page suggest to do the initiation in a different
order that the sample code uses. I tried that sequence as well, but it
did not work.

Please give me instructions what to do to make the camera work.

thanks,
Akos

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DFRobot Support Mod → alfonz senki
4 years ago

Hi alfonz
Sample code use address is 0xB0,not 0x58.
int IRsensorAddress = 0xB0;
//int IRsensorAddress = 0x58;

By this code slaveAddress = IRsensorAddress >> 1
Then slaveAddress(0x58) = IRsensorAddress(0xB0)>>1.

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Pontus Varghav TE18B LUGNETGYM
4 years ago

If I were to use this for heat detection, would the distance be longer if the fire is big (campfire size)?

0 0 Reply • Share ›

DFRobot Support Mod → Pontus Varghav TE18B LUGNETGYM
4 years ago

Hi，Pontus
Detecting distance: 0~3m

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Mohammed ELMAHMOUDY
4 years ago

Hello,
Does the camera send out data on their IR leds (approximate) size and brightness?. My question is to know whether or not it will be possible to do 3D tracking by this camera alone.

Thanks

Thanks!

0 Reply Share ›

DFRobot Support Mod ➔ Mohammed ELMAHMOUDY
4 years ago

Hey,
The sensor does send out IR signals and tracks objects that reflect these IR waves or emits them on their own. Our sample code provides simple tracking in a 2D plane. The IR camera can track an objects X and Y coordinate, but can not determine its Z axis.

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