ArduCam®

OV5647 NoIR Camera Module for Raspberry Pi

USER GUIDE

THE ARDUCAM TEAM

Arducam has been designing and manufacturing camera modules for Raspberry Pi since 2013. You are welcome to contact us if you need our help.
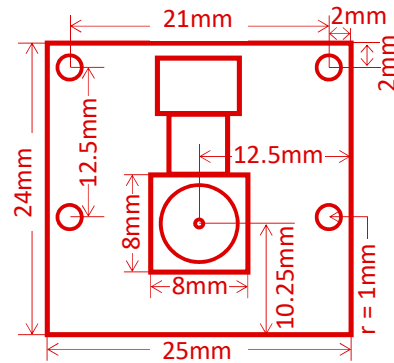
Email: support@arducam.com
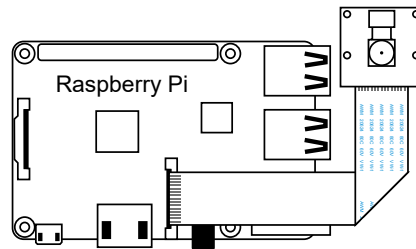Website: www.arducam.com
Skype: fpga4u

INTRODUCTION

This Arducam NoIR camera module is an entry-level, cost-effective, fully compatible choice for your Raspberry Pi camera projects.

Brand	Arducam
Camera Sensor	
Sensor	OV5647
Resolution	5MP
Still Picture	2592×1944 Max
Video	1080P Max
Frame Rate	30fps@1080P, 60fps@720P
Lens	
IR sensitivity	NoIR filter, sensitive to IR
Focus Type	Fixed focus
Field of View	54°×41° (Horizontal × Vertical)
Camera Board	
Board Size	25mm × 24mm
Connector	15pin MIPI CSI
Support Raspberry Pi Model A/B/B+/2/3/3 B+/3A+. Raspberry Pi Zero and Raspberry Pi Compute Module need 15pin to 22pin FPC cable to work.	

MECHANICAL DIMENSION

CONNECT THE CAMERA MODULE

You need to connect the camera module to the Raspberry Pi's camera port, then start up the Pi and ensure the software is enabled.

1. Locate the camera port (between the HDMI and audio port) and gently pull up on the plastic edges.
2. Push in the camera ribbon, and make sure the silver connectors is facing the HDMI port. Do not bend the flex cable, and make sure it's firmly inserted.
3. Push the plastic connector down while holding the flex cable until the connector is back in place.
4. Enable the camera with either way below:

    4.1 Open the raspi-config tool from the Terminal. Run sudo raspi-config, select Enable camera and hit Enter, then go to Finish and you'll be prompted to reboot
    4.2 Main Menu > Preferences > Raspberry Pi Configuration > Interfaces > In Camera select Enabled > OK

USING THE CAMERA

You can find libraries for using the camera below:

Shell (Linux command line):

https://www.raspberrypi.org/documentation/usage/camera/raspicam/README.md

Python:

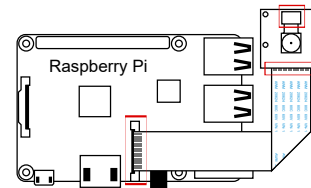https://www.raspberrypi.org/documentation/usage/camera/python/README.md

TROUBLESHOOTING

If the camera module is not working correctly, please try the following things:

- Run apt-get update and sudo apt-get upgrade before you start the troubleshooting.

- Make sure you have enough power supply.
This Camera module adds 200-250mA power consumption to your Raspberry Pi. You'd better go with an adapter with a bigger power budget.

- Run vcgencmd get_camera and check the output.
The output should be supported=1 detected=1. If support=0, the camera is not enabled. Please enable the camera as instructed in the "CONNECT THE CAMERA MODULE" chapter. If detected=0, the camera is not correctly connected, please try the following steps, reboot, and rerun the command.

- Check the connection of the three connectors.

Make sure the ribbon cable is attached to the CSI port near the headphone jack instead of the DSI port on edge.

The ribbon cable should be seated firmly in the connectors and facing the right direction. It should be straight in its connectors.

Make sure the sensor module connector that connects the sensor to the board (also known as the "Sunny" connector) is firmly attached. This connector could bounce or become loose from the board during shipping or when you put the camera in a case. Use your fingernail to flip up and reconnect the connector

with gentle pressure, and it will engage with a slight click. Don't force it if this connector does not engage. It's probably because the sensor has shifted from its position or the connector is not perfectly aligned. Make sure the sensor is in the right place where its outline is marked on the printed circuit board. You can detach and re-attach the sensor as it's taped to the board.

SOME OTHER NOTES

You can find more information on http://www.arducam.com/docs/cameras-for-raspberry-pi/native-raspberry-pi-cameras/faq/

If you get an error message No data received from the sensor. Please check all connections, including the Sunny one on the camera board, you might have a faulty connection with the camera, please contact Arducam Team.

If you get supported=1 detected=1 and still cannot get the camera to work, you might have received a faulty one, and please contact Arducam Team.

If your camera gets damaged in shipping and shows blurry images or even cracked lens, please contact Arducam Team.

The camera may come with a small piece of clear plastic film covering the lens. That is only present to protect the lens while it is being mailed to you, and you need to peel it off gently before using the camera.

- How Do I Get Better Low Light Performance?
This camera has no IR LEDs. If your project operates in low light, please prepare your own lighting source or go with Arducam NoIR cameras with IR illuminators.

- How Can I Change the Focus of This Camera?
This camera has fixed focus and is not able to focus on projects too close to the camera. If you need to shoot closer objects, please choose Arducam autofocus camera.

- How Do I Get A Different Focal Length and FoV?
If you need a different Field of View (FoV) of the camera, please check Arducam M12 mount cameras and Arducam M12 lens kits.

- What If I Need A Longer Cable?
If you want to place the camera module away from the Raspberry Pi, get a longer cable from Arducam or check out Arducam CSI to HDMI adapter to extend your camera connection with standard HDMI cables.