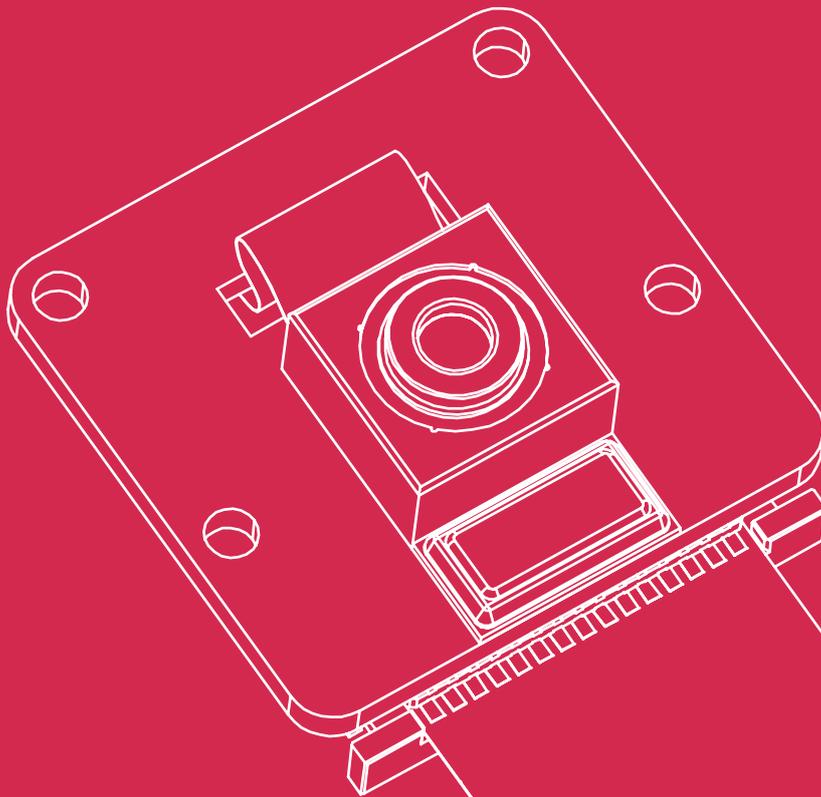


# High-Resolution Autofocus Camera for Raspberry Pi Getting Started

Operating instructions, safety  
information, etc.

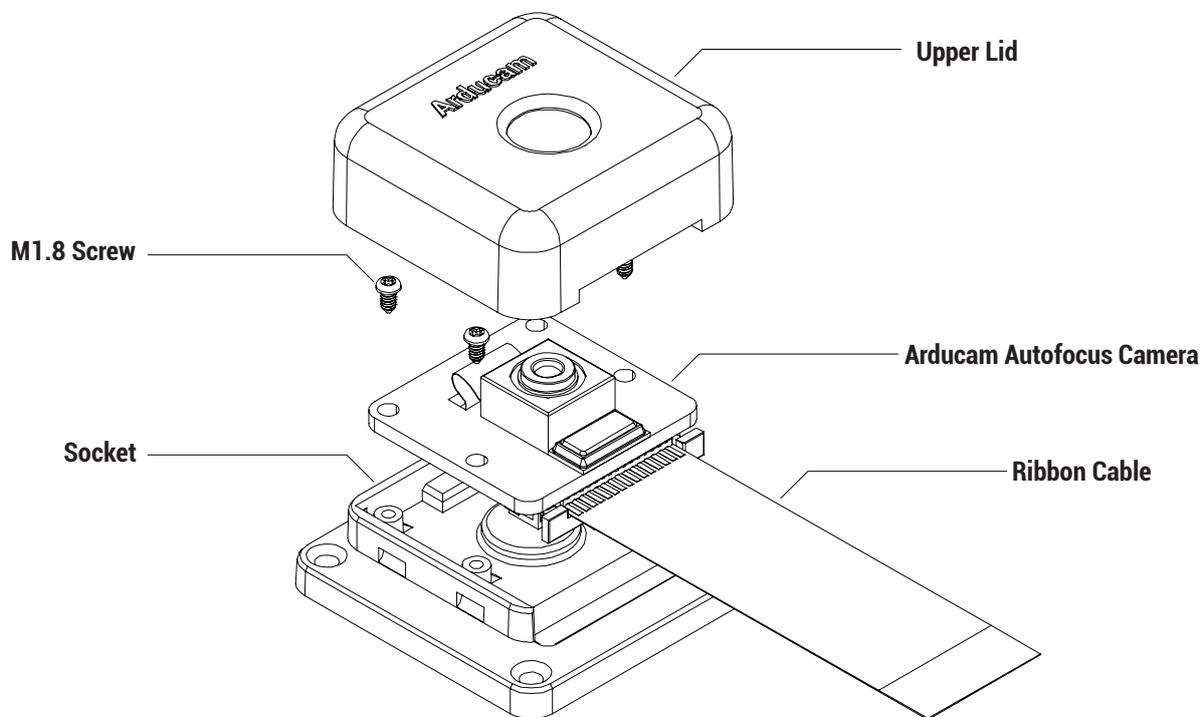


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**ArduCam**  
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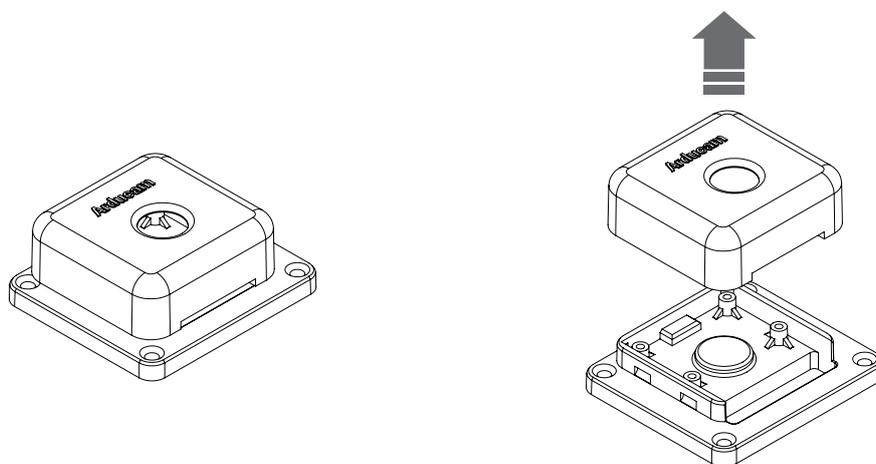
# Installation

## Camera Enclosure



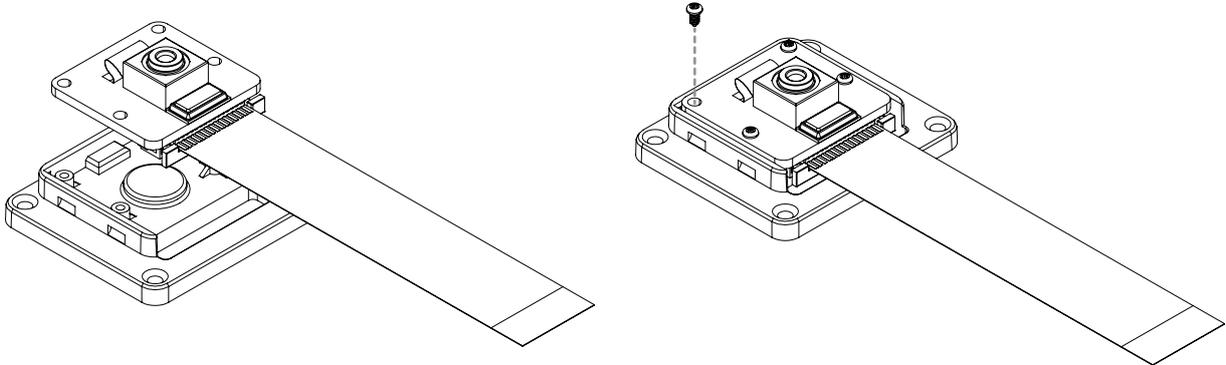
To fit a camera board (High-Resolution Autofocus Camera/V1/V1.3/V2/V2.1):

1. Open the upper lid of the enclosure.

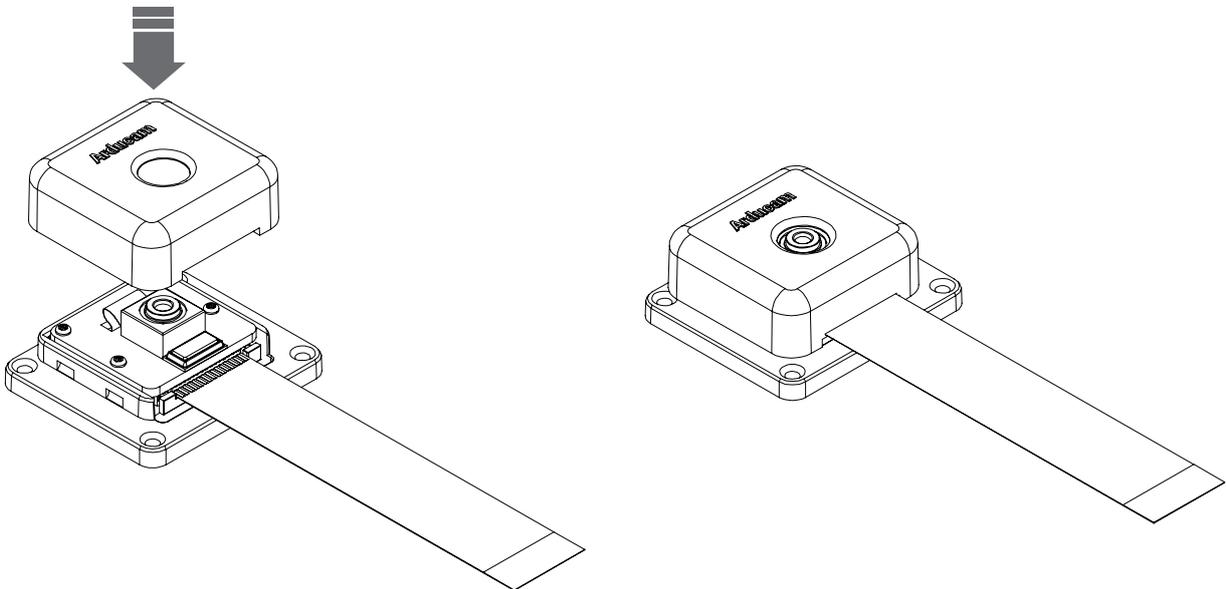


# Installation

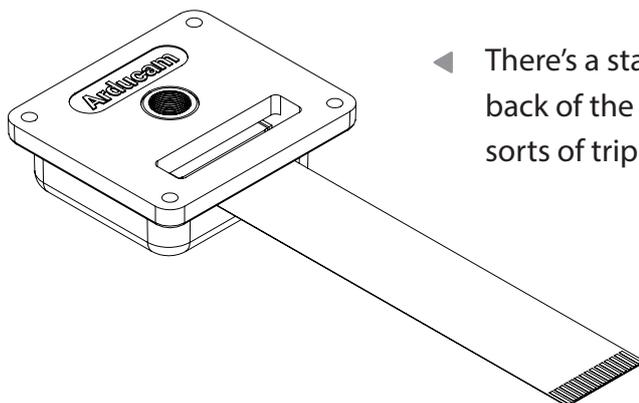
2. Put the module into the socket and install the screws.



3. Put the upper lid back.



## Tripod Mount

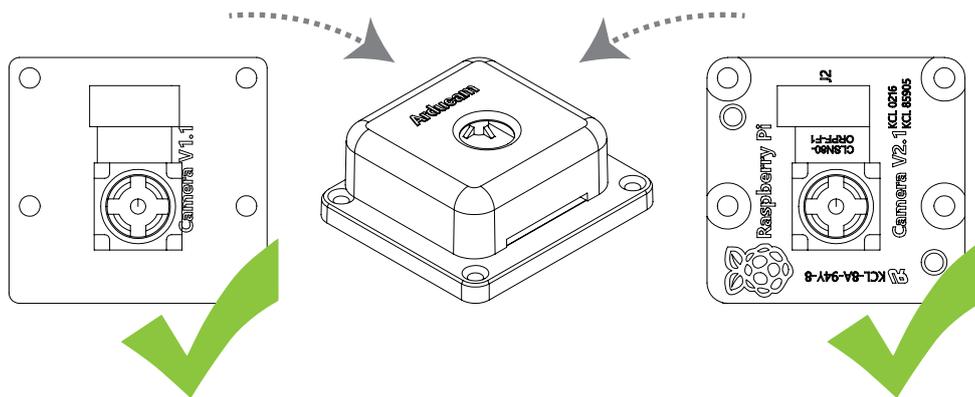


◀ There's a standard tripod mount (1/4"-20) at the back of the enclosure, you can use it with all sorts of tripods.

# Installation

## Camera Enclosure

The camera enclosure that comes with the Arducam High-Resolution Autofocus Camera is also compatible with Raspberry Pi camera module V1/V1.3 and V2/V2.1.

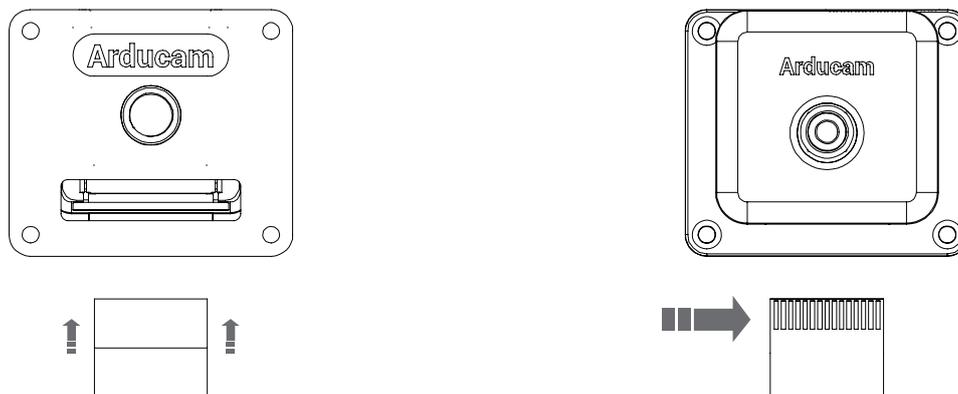


## Before Connecting The High-Resolution Autofocus Camera to Your Raspberry Pi

1. Find the camera connector, gently pull the plastic catch up.

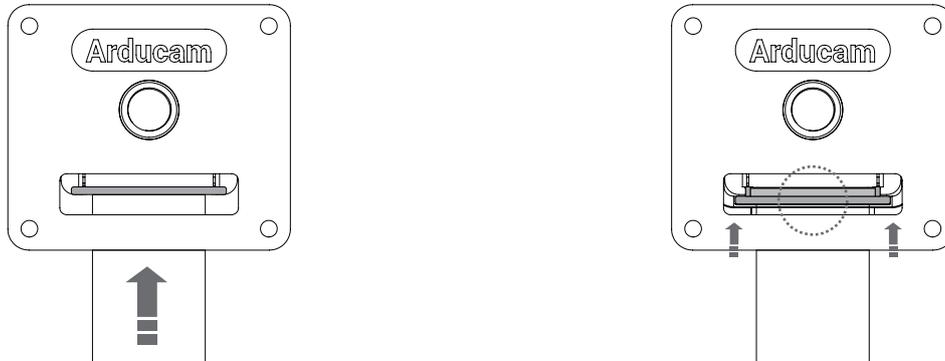


2. Insert the ribbon cable with pins facing away from the catch.



# Installation

3. Push the catch back in.



# Operating The Camera

Please make sure you are running the latest version of Raspberry Pi OS. (March 4th or later releases).

1. Download the shell scripts

```
wget -O install_pivariety_pkgs.sh https://github.com/ArduCAM/Arducam-Pivariety-V4L2-Driver/releases/download/install_script/install_pivariety_pkgs.sh
```

```
chmod +x install_pivariety_pkgs.sh
```

2. Update your Pi

```
sudo apt update
```

3. Install libcamra-dev

```
./install_pivariety_pkgs.sh -p libcamera_dev
```

4. Install libcamera-apps

```
./install_pivariety_pkgs.sh -p libcamera_apps
```

5. Install the kernel driver

```
./install_pivariety_pkgs.sh -p imx519_kernel_driver
```

6. enjoy.

# Operating The Camera



## For Raspbian Buster users, please also:

1. Open /boot/config.txt.
2. Add the following line under [all]:  
dtoverlay=vc4-fkms-v3d
3. Save and reboot.



## For Bullseye users running on Pi 0 ~ 3, please also:

1. Open a terminal
2. Run `sudo raspi-config`
3. Navigate to Advanced Options
4. Enable Glamor graphic acceleration
5. Reboot your Pi



## For Raspberry Pi Compute Module 3/4

The latest software only supports one camera at this time, CM4 uses CAM1 by default.

`libcamera-still` is an advanced command line tool for capturing still images with the High-Resolution Autofocus Camera Module.

```
libcamera-still -t 5000 -o test.jpg
```

This command will give you a live preview of the camera module, and after 5 seconds, the camera will capture a single still image. The image will be stored in your home folder and named `test.jpg`.

`-t 5000`: Live preview for 5 seconds.

`-o test.jpg`: take a picture after the preview is over and save it as `test.jpg`

If you only want to see the live preview, use the following command:

```
libcamera-still -t 0
```

## Manually adjusting the focus

1. Download the software:

```
git clone https://github.com/ArduCAM/Arducam-Pivariety-V4L2-Driver.git
```

# Operating The Camera

2. See the camera in live preview:

```
libcamera-still -t 0
```

3. Use our focus adjustment tool:

```
cd Arducam-Pivariety-V4L2-Driver/focus  
python3 FocuserExample.py -d /dev/v4l-subdev1
```

4. Press the Up/Down Arrow for focus adjustment, press “ctrl + c” to save, or “r” to reset.

## One-time autofocus

For one-time autofocus, use --autofocus:

```
libcamera-still -t 3000 -o test.jpg --autofocus
```

For more advanced information about controlling the camera, please visit:

<https://www.arducam.com/docs/cameras-for-raspberry-pi/raspberry-pi-libcamera-guide/>

# Instructions for Safe Use

To properly use the Arducam High-Resolution Autofocus Camera, kindly note:

- Before connecting, you should always power the Raspberry Pi off and remove the power supply first.
- Make sure the cable on the camera board is locked in place.
- Make sure the cable is correctly inserted in the Raspberry Pi board’s MIPI CSI-2 connector.
- Avoid high temperatures.
- Avoid water, moisture, or conductive surfaces while in operation.
- Avoid folding, or straining the flex cable.
- Avoid cross-threading with tripods.
- Gently push/pull the connector to avoid damaging the printed circuit board.
- Avoid moving or handling the printed circuit board excessively while it’s in operation. Handle by the edges to avoid damages from electrostatic discharge.
- Where the camera board is stored should be cool and as dry as possible.
- Sudden temperature/humidity changes can cause dampness in the lens and affect the image/video quality.

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