



# Raspberry Pi HQ Camera Case

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<https://learn.adafruit.com/raspberry-pi-hq-camera-case>

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# Overview



## DIY HQ Camera

In this project we're making a case for the Raspberry Pi HQ Camera. This 3D printed enclosure houses the Pi 4 and the HQ Camera module. It's compatible with any C or CS-mount lenses so we can use a wide variety of interchangeable lenses.



## Easy/Fast 3D Print

The parts can be 3d printed without any support material using PLA. The case is modular and features snap fit covers that are easy to remove and swap out. The PCB mount is designed to secure the camera to the Pi and can be printed in just about 20 minutes.



## Snap Fit & Modular

With snap fit parts you can customize the case to fit a number of different sensors and components. All of the ports and connectors are accessible so you can connect all sorts of devices like a display, mouse and keyboard.



This guide only covers the assembly of the enclosure. Please visit the links below to learn how setup the Raspberry Pi HQ camera module

[Official Raspberry Pi Camera Guide](#)

[Raspberry Pi HQ Camera Blog Post](#)



## Parts

List of parts used to build this project. There are a few options for the USB Type A connector and a rechargeable USB battery.

[Raspberry Pi 4 - 4GB \(\)](#)

[Pi HQ Camera \(\)](#)

[5.1V 3A Power Supply \(\)](#)

[Micro HDMI cable \(\)](#)

[M2.5 Black Nylon Hardware Kit \(\)](#)

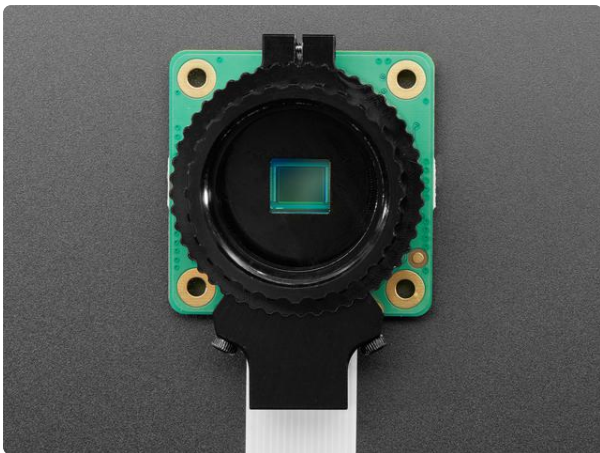
[35mm 1.6f C Mount Lens \(\)](#)



### Raspberry Pi 4 Model B - 4 GB RAM

The Raspberry Pi 4 Model B is the newest Raspberry Pi computer made, and the Pi Foundation knows you can always make a good thing better! And what could make the Pi 4 better...

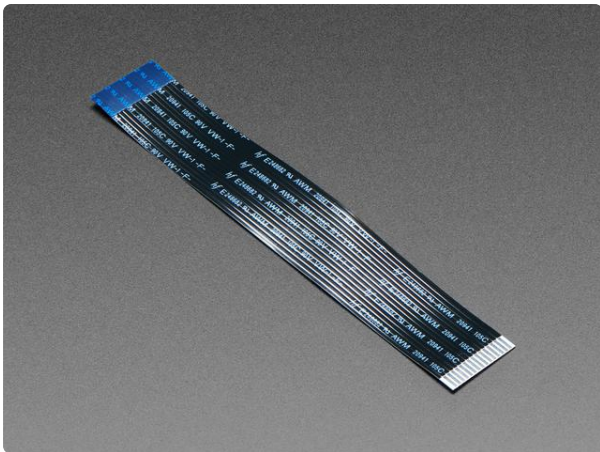
<https://www.adafruit.com/product/4296>



### Raspberry Pi High Quality HQ Camera

Snap, snap! There's a new official camera board released by the Raspberry Pi Foundation! The Raspberry Pi High Quality Camera is the latest camera accessory...

<https://www.adafruit.com/product/4561>



### Flex Cable for Raspberry Pi Camera or Display - 100mm / 4"

This cable will let you swap out the stock 150mm long flex cable from a Raspberry Pi Camera (either 'classic' or 'NoIR' type) or Raspberry Pi Display for a different...

<https://www.adafruit.com/product/1646>



### 16mm 10MP Telephoto Lens for Raspberry Pi HQ Camera

This is the 16mm 10MP Telephoto Lens, an essential for the Raspberry Pi High Quality Camera. It has a wide...

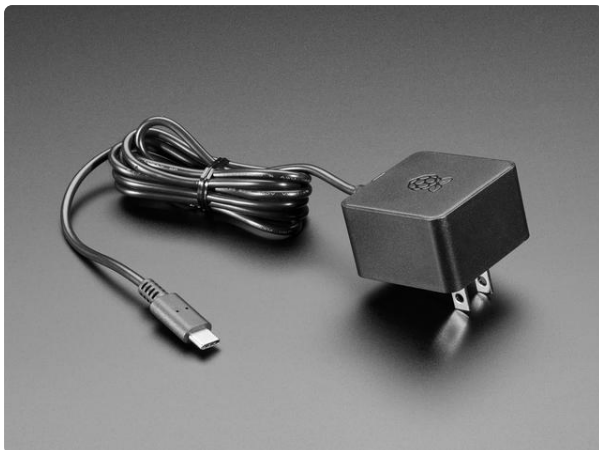
<https://www.adafruit.com/product/4562>



### [6mm 3MP Wide Angle Lens for Raspberry Pi HQ Camera](https://www.adafruit.com/product/4563)

This is the 6mm Wide Angle Lens, an add-on for the Raspberry Pi High Quality Camera. It has a wide field...

<https://www.adafruit.com/product/4563>



### [Official Raspberry Pi Power Supply 5.1V 3A with USB C](https://www.adafruit.com/product/4298)

The official Raspberry Pi USB-C power supply is here! And of course, we have 'em in classic Adafruit black! Superfast with just the right amount of cable length to get your Pi 4...

<https://www.adafruit.com/product/4298>



### [Micro HDMI to HDMI Cable - 2 meter](https://www.adafruit.com/product/1322)

Connect an HDMI device with a micro HDMI port to one with a regular size HDMI port together with this basic HDMI cable. It has nice molded grips for easy installation, and is 2 meter...

<https://www.adafruit.com/product/1322>



### [Black Nylon Machine Screw and Stand-off Set – M2.5 Thread](https://www.adafruit.com/product/3299)

Totalling 380 pieces, this M2.5 Screw Set is a must-have for your workstation. You'll have enough screws, nuts, and hex standoffs to fuel your maker...

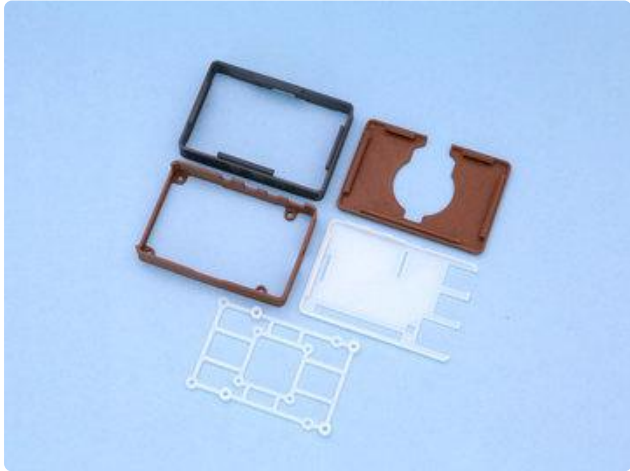
<https://www.adafruit.com/product/3299>

1 x [35mm F1.6 Lens C mount](#)

Lens shown in photos

<https://www.amazon.com/gp/product/B0773K3MXD/>

## 3D Printing



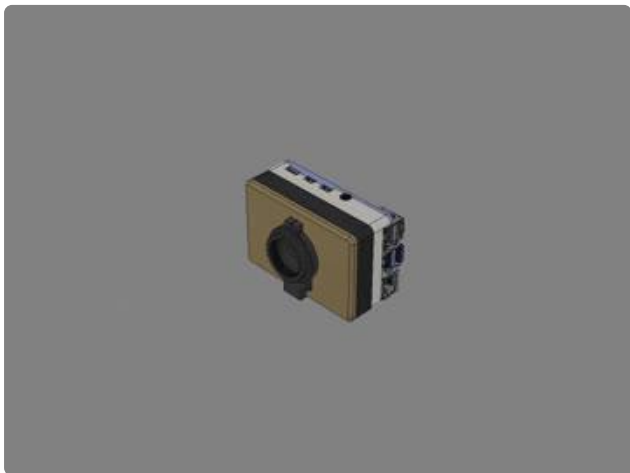
### Parts List

STL files for 3D printing are oriented to print "as-is" on FDM style machines. Parts are designed to 3D print without any support material. Original design source may be downloaded using the links below.

pcb-mount.stl  
front-frame.stl  
front-cover.stl  
back-frame.stl  
back-cover.stl

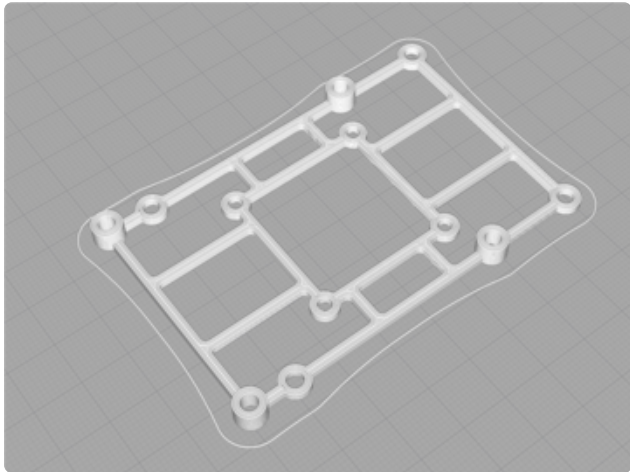
Download CAD files from Fusion  
360

Download CAD files from  
Thingiverse



### CAD Assembly

The Pi HQ camera is secured to the PCB mount using M2.5 hardware screws and standoffs. The Pi 4 is secured to the PCB using M2.5 screws. The PCB mount is secured to the back frame with screws and nuts. The front frame is snap fitted onto the back frame. The front and back covers snap fit onto the frames respectively.



## Slicing Parts

No supports are required. Slice with settings for PLA material.

The parts were sliced using CURA using the slice settings below.

PLA filament 220c extruder

0.2 layer height

10% gyroid infill

60mm/s print speed

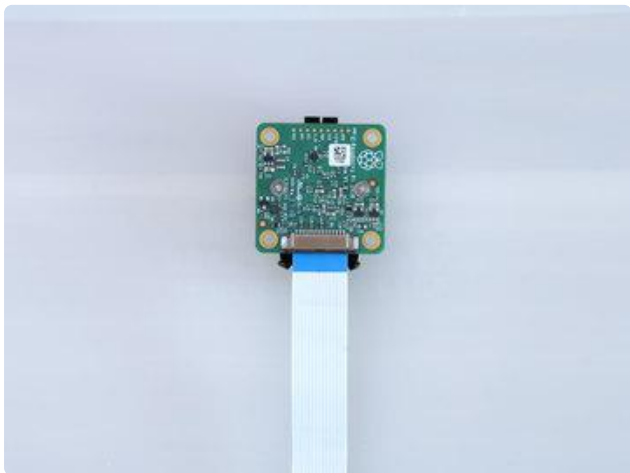
60c heated bed

Raspberry Pi 4 3D Model –  
GrabCAD

Raspberry Pi HQ Camera 3D Model  
– GrabCAD

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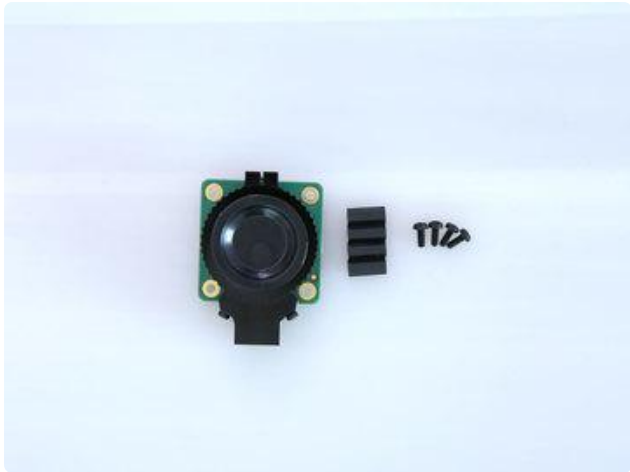
## Assembly



### Install Camera Ribbon Cable

The camera ribbon cable must be installed before assembling the enclosure. The ribbon cable is installed with the blue side facing up with the back of the PCB.





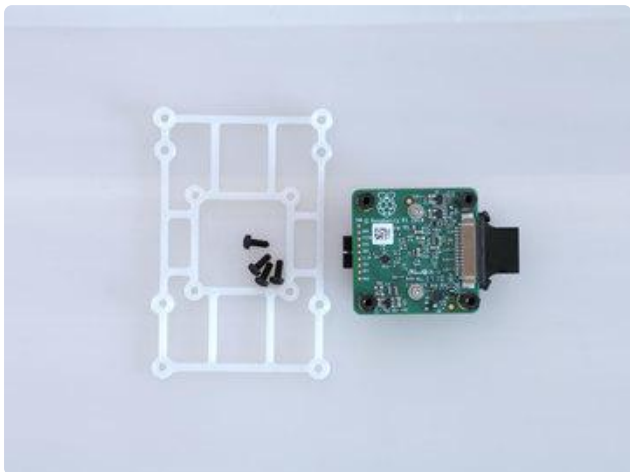
## Install Hardware for Pi Cam

Use 4x M2.5 x 12mm long standoffs and 4x M2.5 x 8mm long screws to secure the Pi HQ camera to the PCB mount.



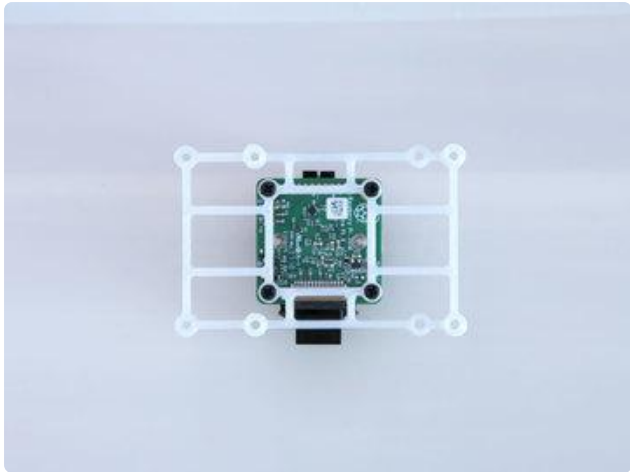
## Installed Hardware

The standoffs are secured to the back of PCB. Insert and fasten the M2.5 screws through the front of the PCB. Do not over tighten, finger tighten is suffice.



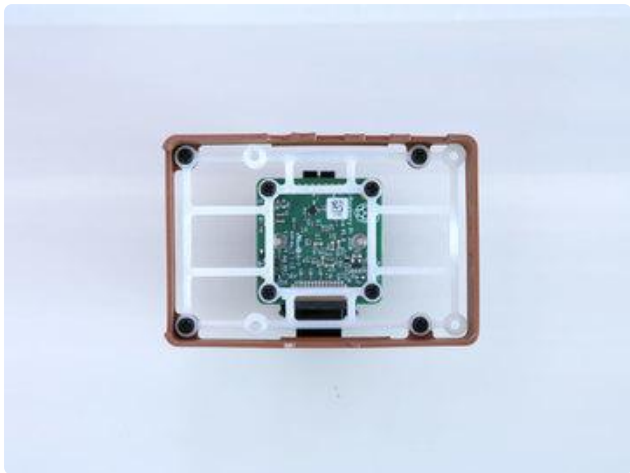
## Install PCB Mount

The Pi HQ camera is secured to the PCB mount using 4 x M2.5 x 8mm long screws.



## Secure Pi HQ Cam to PCB Mount

Place the Pi HQ cam over the center set of mounting holes in the PCB Mount. Insert and fasten 4x M2.5 x 8mm long screws to secure the camera to the PCB mount. Reference the photo for the correct orientation.



## Install PCB mount to Frame

The PCB mount is secured to the frame using 4x M2.5 x 8mm long screws and 4x M2.5 hex nuts.



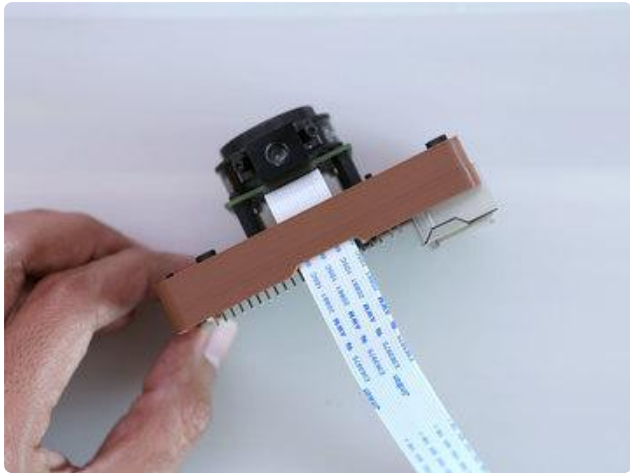
## Secured PCB Mount

Insert and fasten 4x M2.5 x 8mm long screws through the four mounting tabs. Use M2.5 hex nuts to secure the screws in place.



## Install Raspberry Pi

Place the Raspberry Pi PCB on top of the PCB mount with the mounting holes lined up correctly.



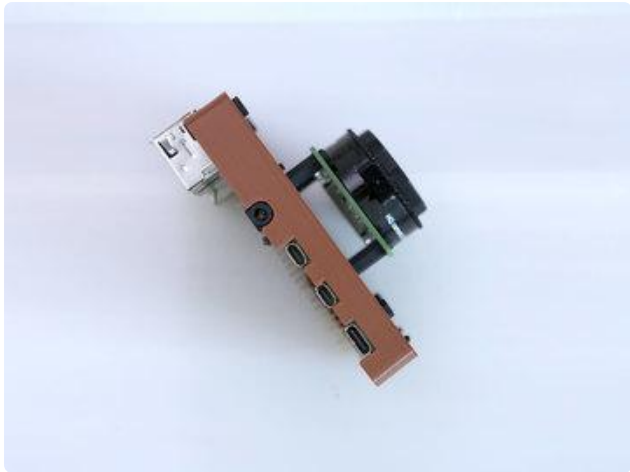
## Adjust Ribbon Cable

Insert the camera ribbon cable through the frame and thread it through the side. Pull the ribbon cable all the way through the frame.



## Secure Raspberry Pi

Insert and fasten 4x M2.5 x 10mm long screws through the mounting holes on the top of the Pi. Use 4x M2.5 hex nuts to secure the Raspberry Pi PCB to the PCB mount.



## Raspberry Pi Ports

The frame features cut outs for the various ports on the Raspberry Pi 4.



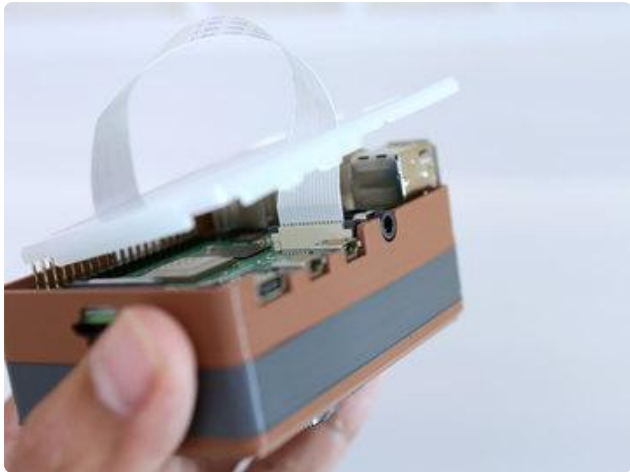
## Install Front Frame

Orient the front frame with the back frame. Use the notch as an indicator and orient it with the tripod mount on the Raspberry Pi HQ Cam.



## Installing Ribbon Cable through Cover

The ribbon cable is fitted through the top of the camera port on the back cover.



## Secure Ribbon Cable to Pi

Insert the cable ribbon cable into the camera port on the Pi. Use the connector clip to secure the ribbon cable to the port. The front cover is snap fitted over the Raspberry Pi with the cutouts oriented correctly.



## Installed Camera Ribbon Cable

The camera ribbon cable remains exposed but is mostly kept in place. To avoid damaging the ribbon cable, remember to take precautions when handling.



## Install Front Cover

Place the front cover through the front of enclosure with the cut out lined up with the camera lens.



## Tripod Screw

The tripod screw hole is accessible through the bottom side of the enclosure.



## Micro SD Card

The slotted hole on the side of the enclosure allows access to install and remove a micro SD card.



## Final Build

And thats it! The Raspberry Pi is ready to power up and start snapping pics.