Raspberry Pi Camera Timelapse Case

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https://learn.adafruit.com/pi-timelapse

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Overview

Build a timelapse rig with the new camera module from Raspberry Pi! We were able to capture stunning timelapses with dynamic exposure thanks to the new HDR mode.

The new camera module features autofocus and a 12-megapixel sensor and an HDR mode giving you excellent image quality.

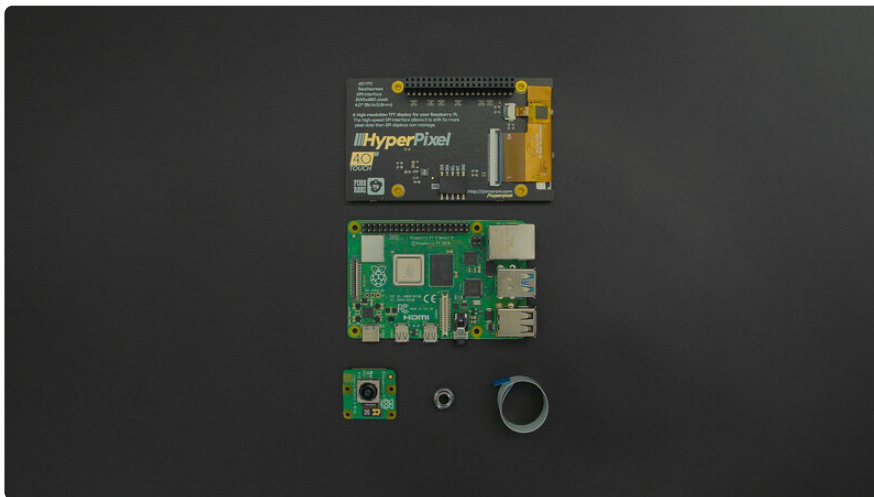High dynamic range means you can capture perfect exposures in your timelapse videos.
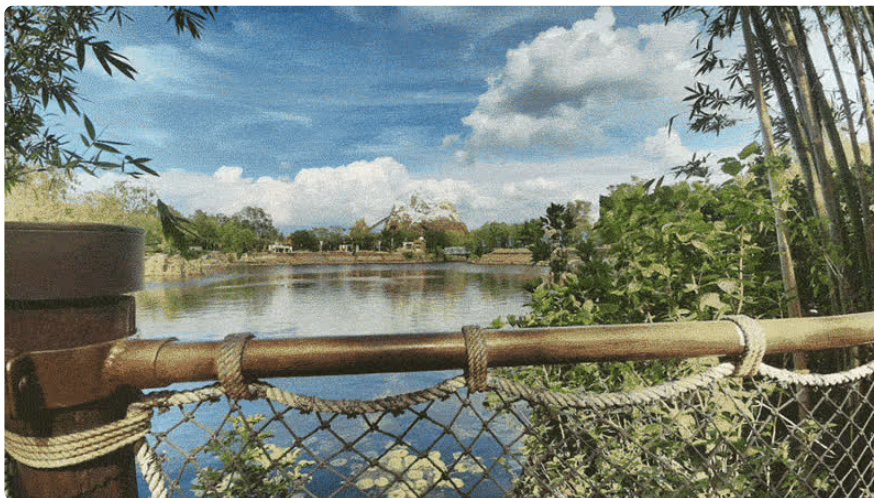
3D print our snap fit case to house a Pi 4, Pimoronoi's 4-in HyperPixel display and the new camera module.

Whether you're looking to capture blooming plants or gorgeous clouds, you don't have to worry about blown-out or underexposed images.
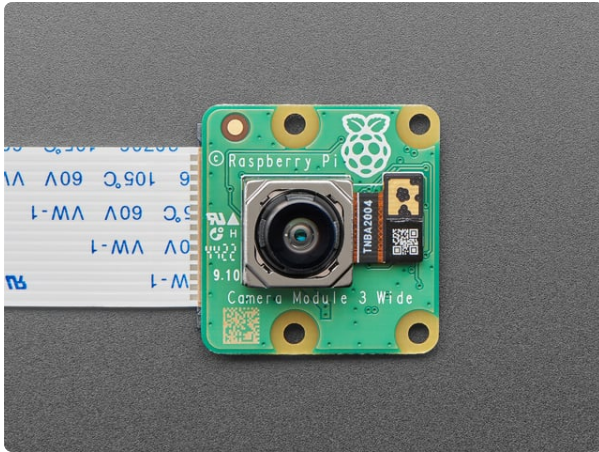
Parts

[Raspberry Pi 4 Model B](https://www.adafruit.com/product/4297)

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...

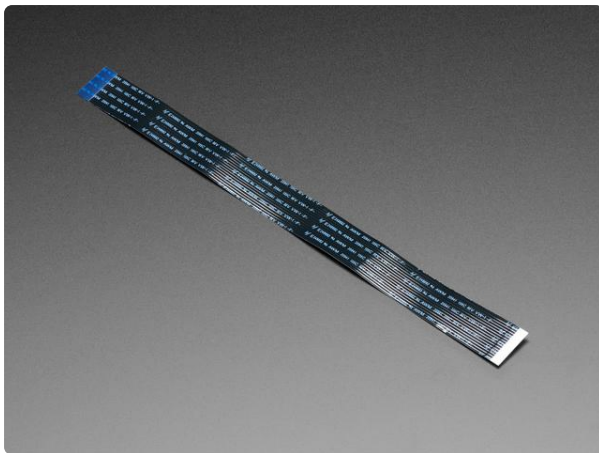https://www.adafruit.com/product/4297

Raspberry Pi Camera Module 3 - 12MP 120 Degree Wide Angle Lens

Raspberry Pi Camera Module 3 is a compact camera from Raspberry Pi. It offers an IMX708 12-megapixel sensor with HDR, and features phase detection autofocus. Camera Module 3 is...

https://www.adafruit.com/product/5658

Flex Cable for Raspberry Pi Camera or Display - 200mm / 8"

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...

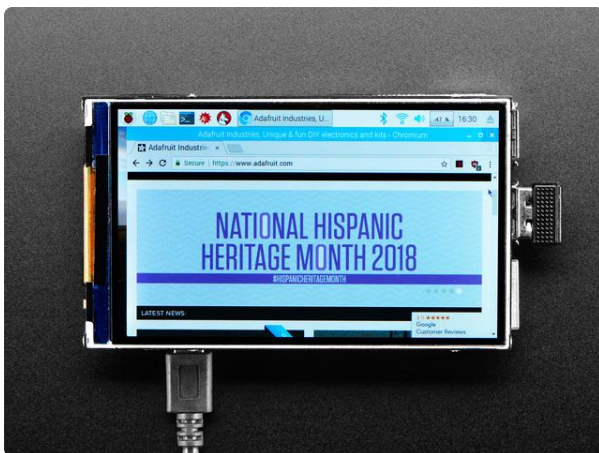https://www.adafruit.com/product/1647

Miniature Wireless USB Keyboard with Touchpad

Add a miniature wireless controller to your computer project with this combination keyboard and touchpad. We found the smallest wireless USB keyboard available, a mere 6" x...

https://www.adafruit.com/product/922

Pimoroni HyperPixel - 4.0" Hi-Res Display for Raspberry Pi

Pimoroni's HyperPixel features a 4.0" display with 800x480 18-bit color pixels. The plate uses the high speed DPI interface...

https://www.adafruit.com/product/3932

Camera and Tripod 3/8" to 1/4" Adapter Screw

Whaddya got a screw loose or something?This 3/8" to 1/4" Adapter Screw is super handy if you're building projects that...

https://www.adafruit.com/product/2392

Swivel-Head Pan Tilt (PTZ) Shoe Mount Adapter

This Swivel-Head Pan-Tilt (PTZ) Shoe Mount Adapter allows you to attach something with standard 1/4" machine screw mount to a camera's shoe...

https://www.adafruit.com/product/2464

4 x M2x6mm standoffs
M2x6mm standoffs

https://amzn.to/3mFVZ8h

4 x M2x4mm screws
M2x4mm screws

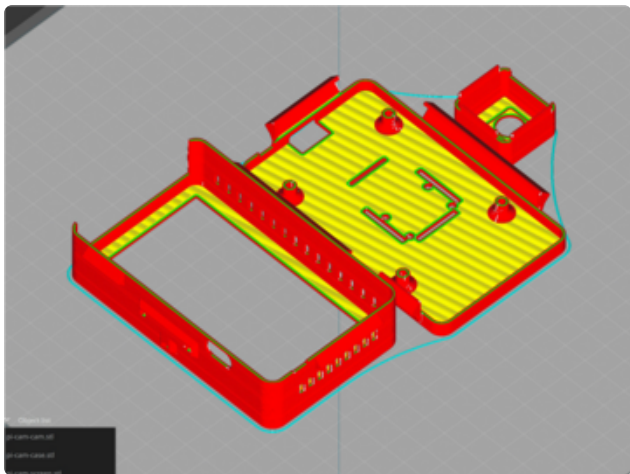https://amzn.to/3L6lB7F

3D Print

Parts List

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

Editable Design Files

https://adafru.it/18CB

Download STLs

https://adafru.it/18CD

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

Supports

Support Extrusion Width: .2
Support Density: 4%
Support Overhang Angle: 50
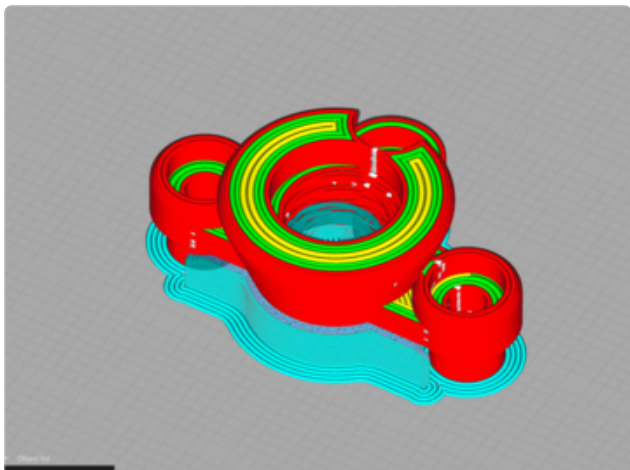Support Z Height: .21
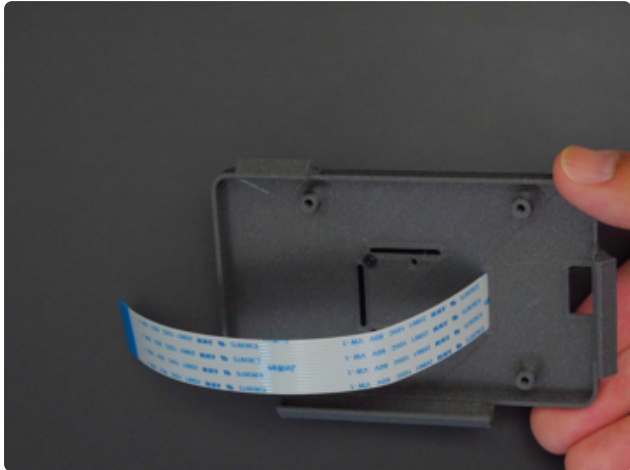Interface: On
Support Roof: On
Support Pattern: Zig Zag

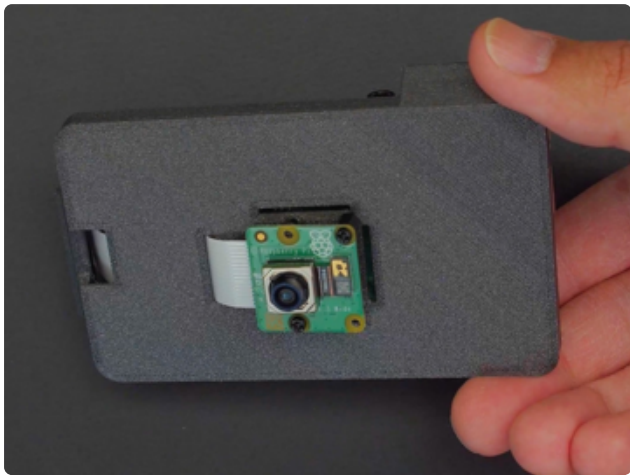## Build Plate Adhesion
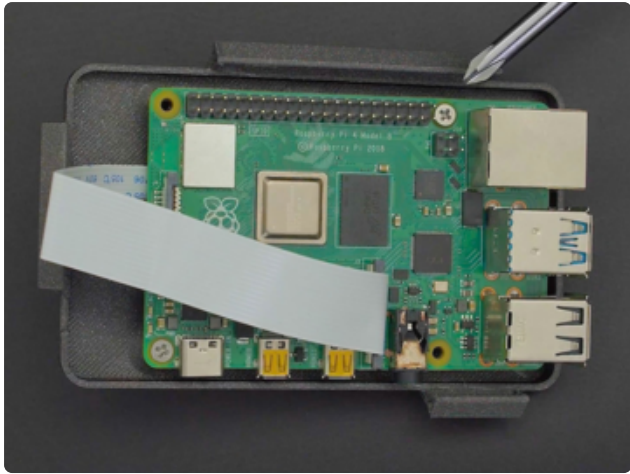
Type: brim
Line Count: 4

Assemble

Camera Cable
Start by installing the camera's ribbon cable through the slit in the front cover. Use M2x5mm screws to mount the standoffs.

Short standoffs secure the camera to the front while the Pi is secured to the back with M2.5x5mm machine screws.
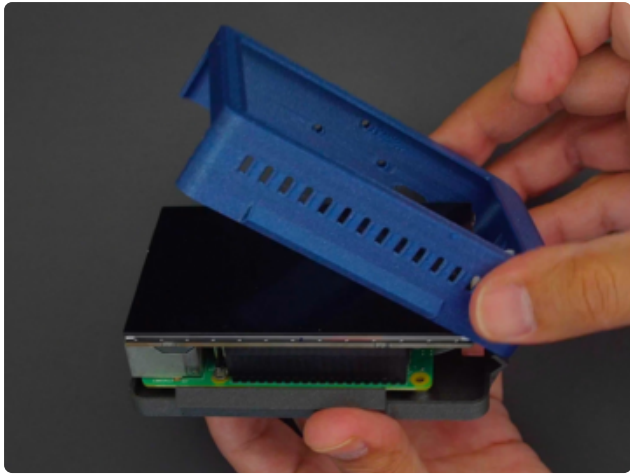
Mount Pi
Align the USB ports to to edge of the printed part. Gently bend the camera cable around the Pi to connect.

Attach Display
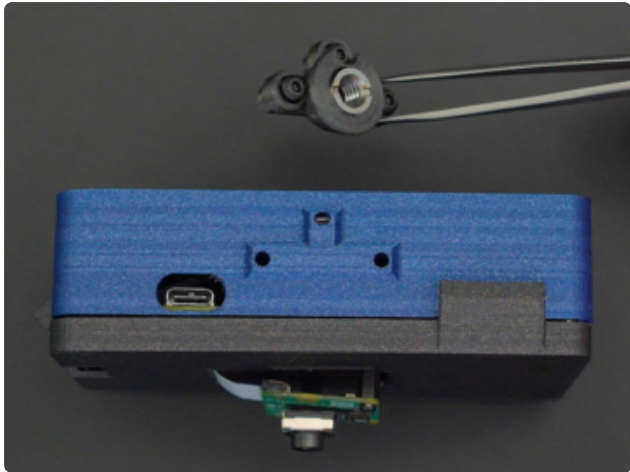Use the included GPIO riser to fit the display over the Pi.

Attach Screen cover
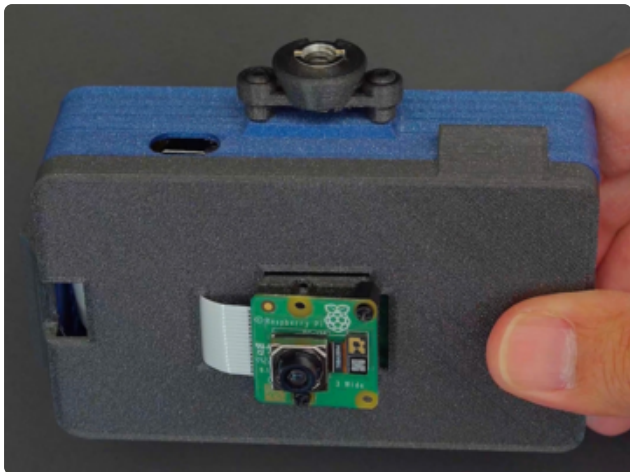Place screen cover at an angle, over the display and ribbon cable.

Align snap fits
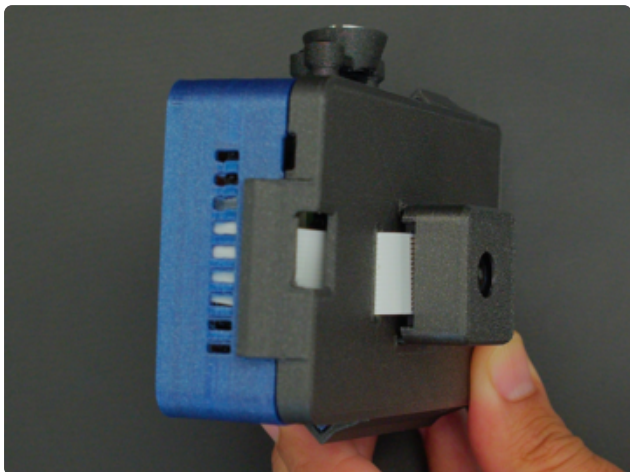Gently bend the two parts over the snap fits to attach the case.

Tripod attachment

Use M3x10mm screws to attach the tripod mount.

Fit a 3/8" to 1/4" Adapter Screw to mount a tripod.

Camera cover

Align the cut out on the camera cover part over the ribbon cable.

Press fit the three tabs into the slots on the case to attach.

Pan tilt swivel

This tilt ball head makes a nice addition and allows you to position the camera in all sorts of different angles.

Complete!

Use

The default installation of Raspberry Pi OS Bullseye includes support for the V3 cameras. A full list of commands is linked below.

Raspberry Pi Camera Commands

Preview camera

open a terminal window and load a preview window to frame up the camera.

```
libcamera-hello -t0 --hdr
```

Timelapse settings

We used the settings below for quick on location timelapses.

For 10 mins it will take one picture every 1 second.

```
libcamera-still -t 600000 --timelapse 1000 --datetime --hdr
```