

# Nexus eFinder (Mini) Build

## Parts list

1. 3d printed:
  - a. Housing
  - b. Rear cover
  - c. Dew shield (optional)
2. Raspberry Pi Zero 2 W
3. 32GB microSD card. Fast and good quality. Recommend Sandisk, Ultra or Extreme A1
4. Raspberry Pi HQ camera with cs mount.
5. Camera flex connector (Pi5 or Pi Zero compatible). The camera usually comes with a 200mm flex connector which will fit if looped around. Very neat it to use the '38mm stubby' version if available and the 80mm version will also fit.
6. Arducam 25mm f1.2 cctv lens c/cs mount. (Check Digikey & Mouser for supplies)
7. 4 off m2.5x12 + 6 mm brass standoffs
8. 4 off m2.3 x 6mm self tap screws
9. 4 off m2.5 x 6 countersink screws
10. Right angle micro-usb to usb A cable, length to suit your telescope.
11. Push to make switch (generic push button fitting 12mm hole)
12. 3mm LED, 2.7kohm resistor & rectifier diode

The LED, resistor & diode could be omitted.

See separate notes on how to prepare the microSD card

## Assembly

First remove the ¼" tripod adapter from the camera using a 1.5mm hex key.

Then unscrew the adapter ring(s) from the front of the Pi Camera. If it was included, the 5mm spacer adapter can be discarded as the recommended arducam lens does not require it.

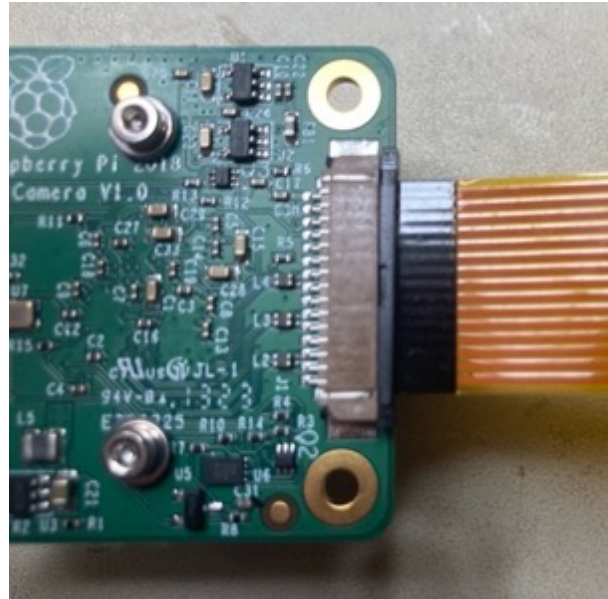


Connect the camera to the Pi Zero using the flexi connector. Wide end to camera, narrow to Pi Zero. Do not use too much force on the locking tabs on the connectors. Just ease them out gently. Ensure the shiny gold contacts on the flexi cable face the correct way (towards the circuit board). See photo below.

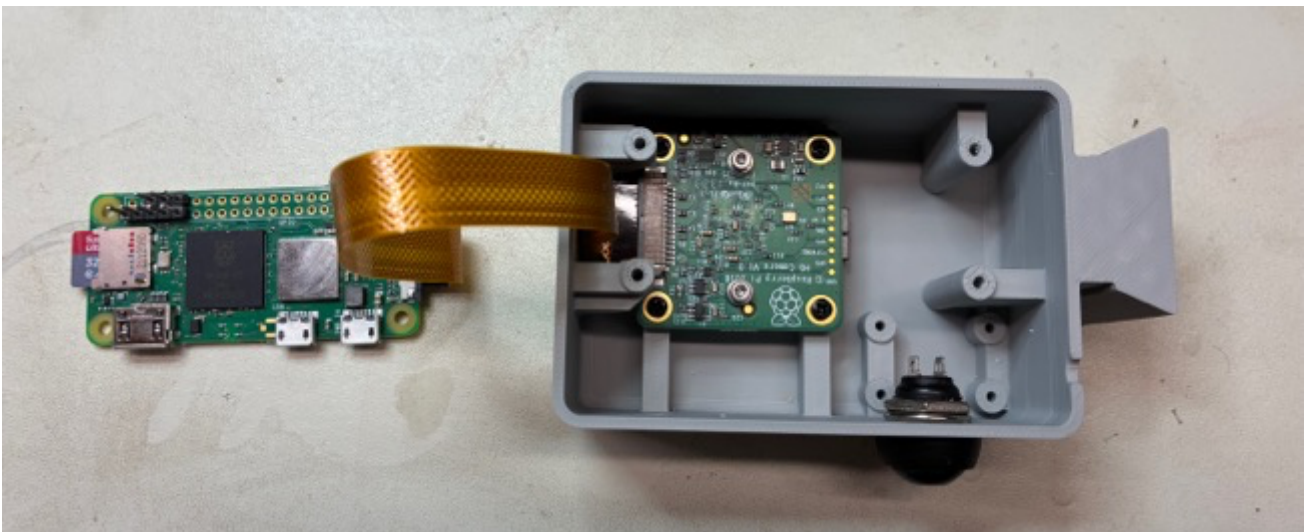
Locking tab in open position



Closed with cable attached



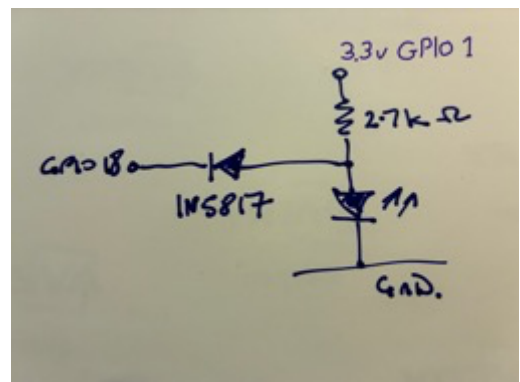
Fix the camera into the housing, with 4 self tapping screw. Do not tighten yet. See first photo for orientation.



Now screw the thin adapter ring back into the camera from the front of the housing. Then tighten the 4 screws holding the rear of the camera.

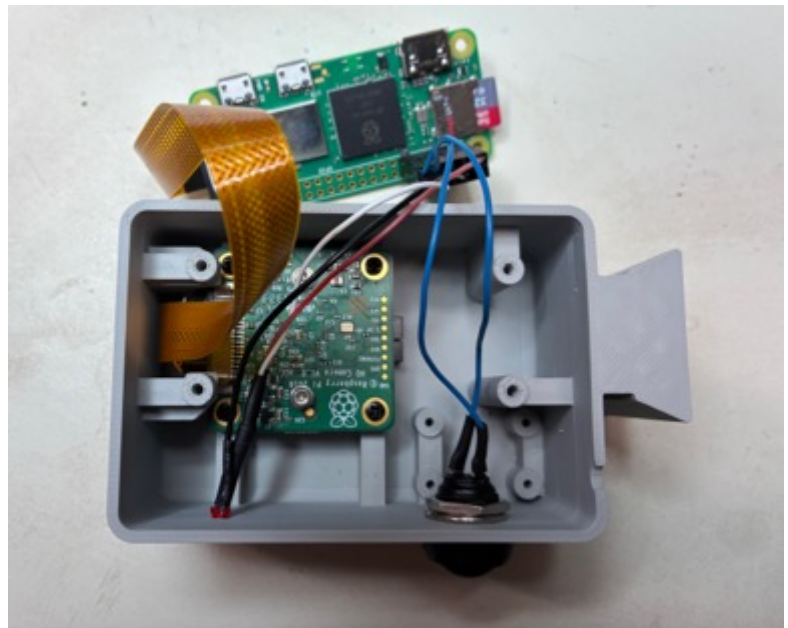
Wire the switch to the Pi Zero GPIO17 and Ground.

If to be included, wire the LED to GPIO18 as per the circuit diagram. Almost any small rectifier diode will suffice.



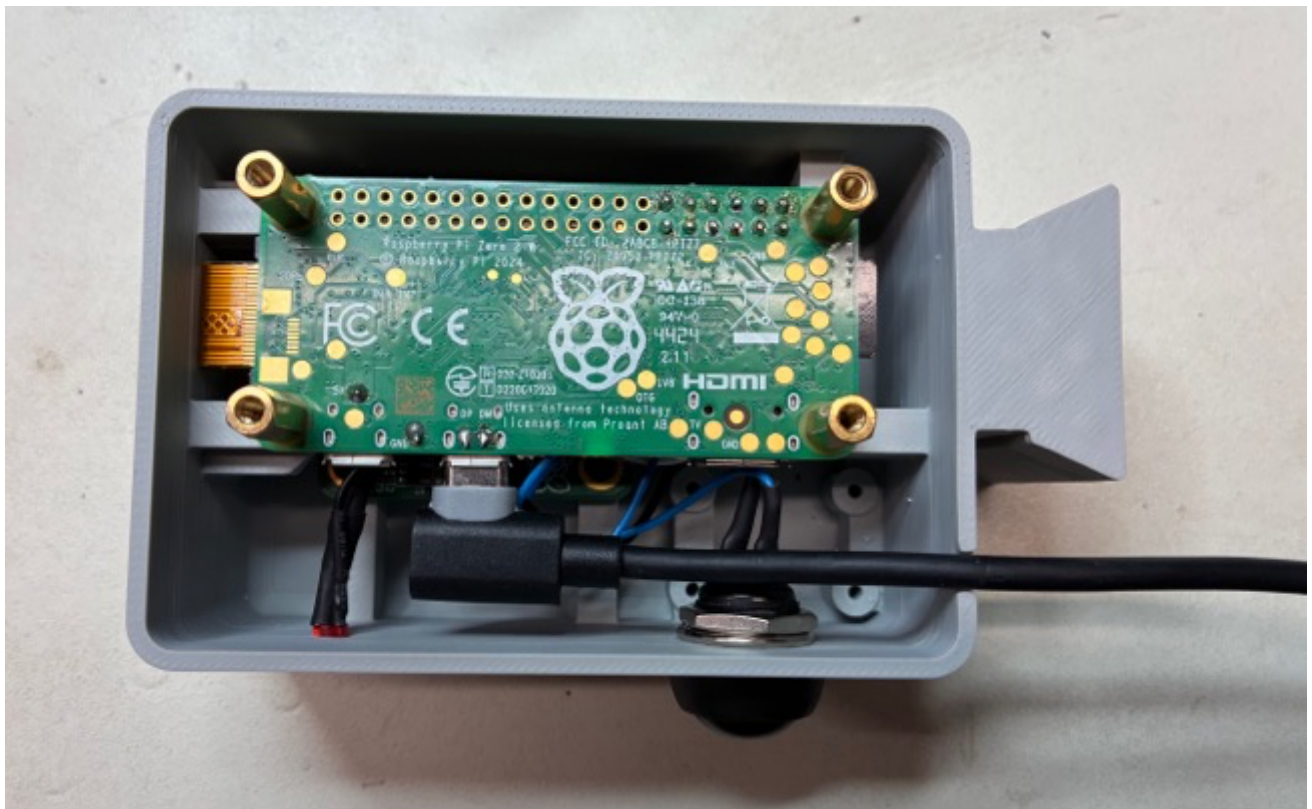
The eFinder is now ready for final assembly.

The four holes bottom right are for mounting an ADXL343 accelerometer. This can be fitted later.



Now fold the flexi over so the Pi Zero lies in place. Fasten the Pi Zero down with 4 off 12mm long brass stand off pillars. Depending on your 3d printer characteristics, you may need to gently run a m2.5 tap down the housing holes first.

Plug the micro usb cable into the second Pi Zero socket (see photo).



Assembled ready for rear cover

Front view fully assembled



With dew shield fitted.



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