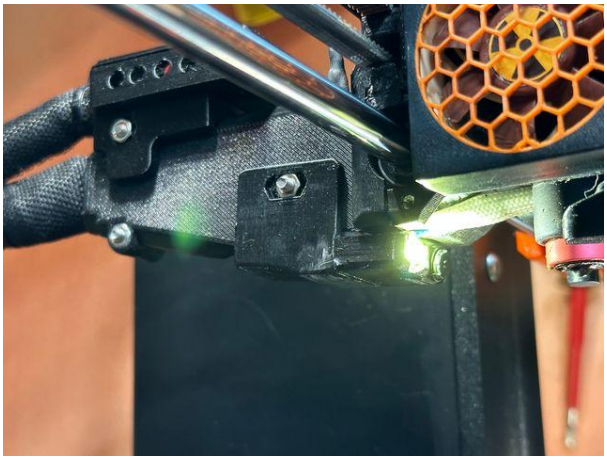


3DO Nozzle Cam mount for Prusa I3 MK3 - improved version!

Clamikra

VIEW IN BROWSER

updated 16. 4. 2023 | published 16. 4. 2023

Summary

Now with better light (3W pearl LED) and improved camera angle. Two options of PCB housing and mounting

3.84 hrs	2 pcs	0.15 mm 0.20 mm	0.40 mm	PET	31 g	Prusa MK3S/S+ & MMU2S

3D Printers > 3D Printers - Upgrades

Tags: cameramount nozzlecam 3do

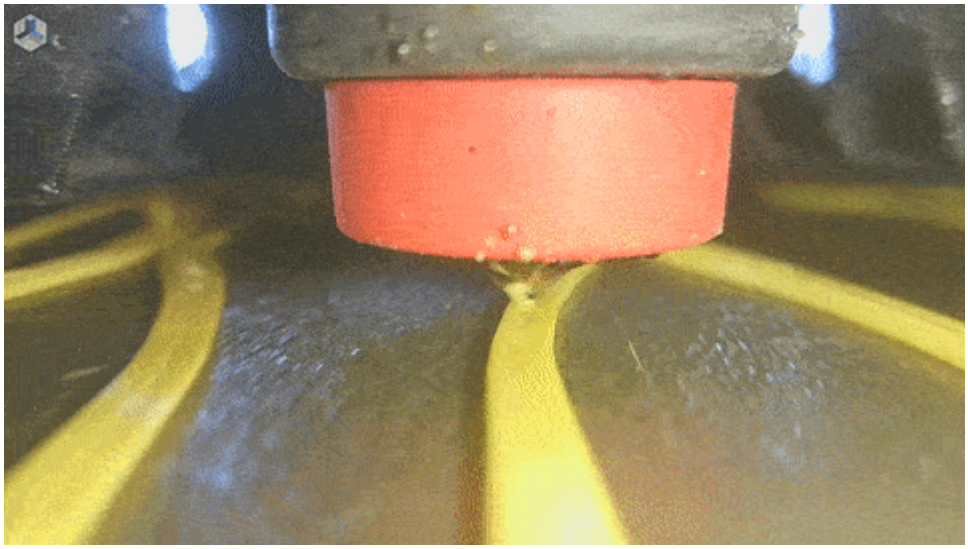
I recently upgraded my former model of the gorgeous 3DO HiRes Nozzlecam with Sony video chip .

These are the improvements (Updated once more 15.04.2023):

- Changed camera angle to center nozzle in picture
- Better lighting with brighter 3W pearl 4000K LED
- Camera Body now made of two parts with pass marks for easier printing

- Two options for PCB housing and mounting
- a) On the back of the x-axis Cablesupport (like first iteration)
- b) clamped to the x-axis cable (no stress for the cameracable, new version)

For assembly and general information see the original design.



The LED is a 3,7 Volt pearl cob led (like this one). You should choose the ‘natural white’ variant with 4000K because it gives the best natural light. With 5V power supply (taken from Einsy Rambo board) you need a 80-90 Ohm pre-resistor to drive the LED. The resistor is soldered directly to the + contact of the LED and isolated with shrink tube.

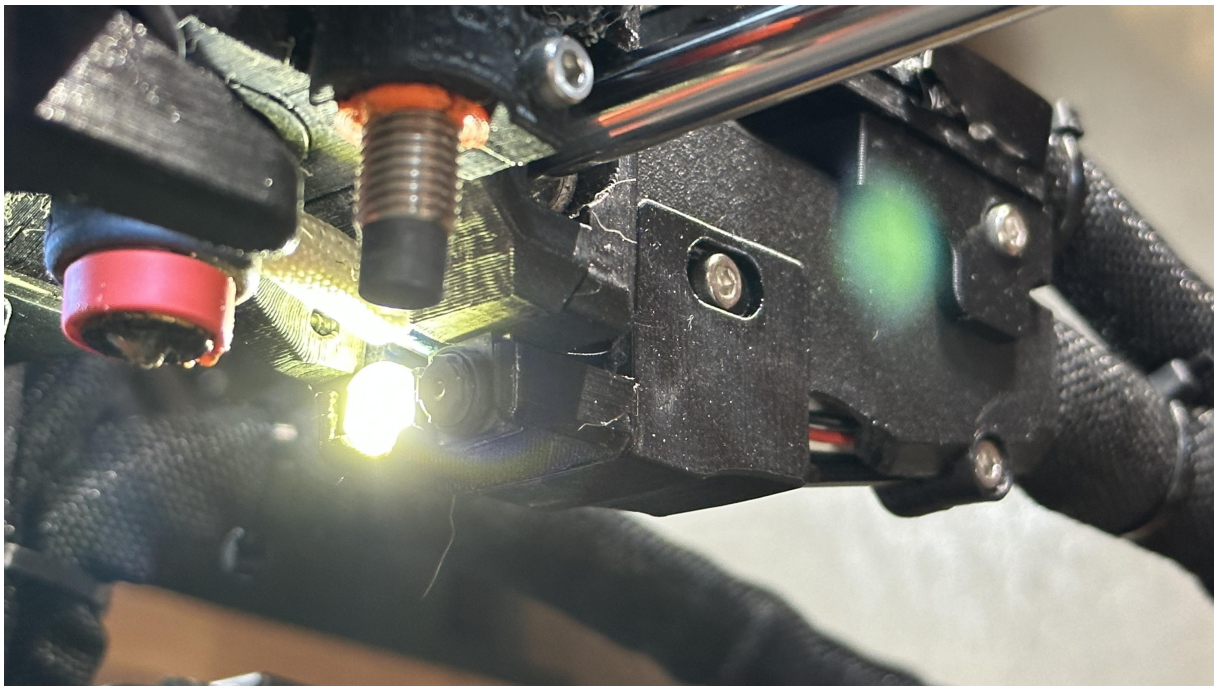
The Camera housing now is made of two parts (Part A and part B) that snap together with two pass marks. Print quality is better and stronger this way. Still no supports needed. I put them together with a drop of superglue.

After assembling camera mount and PCB Case and securing all cables you can adjust the focus of the cam by loosening the screw next to the cam and pushing the mount a bit for- or backwards So that the focus sits excactly in the tip of the nozzle.

Someone asked me: “why not build it with two leds?“ That’s because the mount must not be too wide or it will interfere with the frame of the Prusa i3. There is just not enough room for two LEDs when mounting the camera this way.

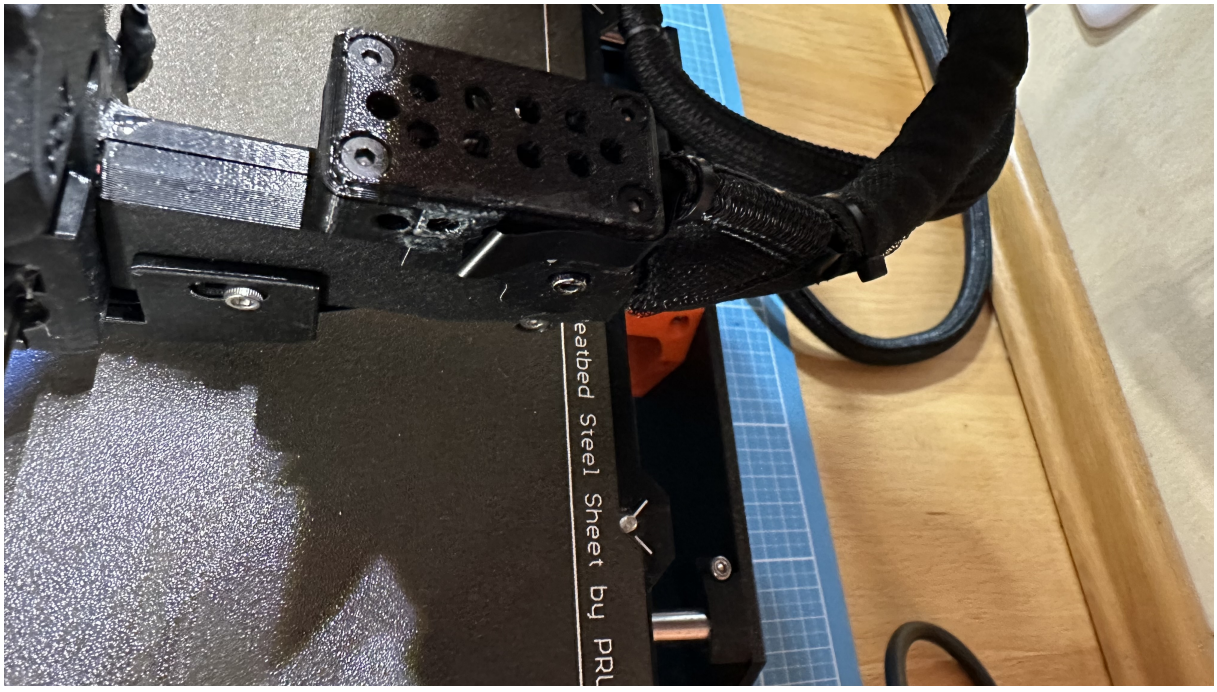
Printed in Prusament PETG (no supports needed).

The assembly is a bit tricky so please refer to my instructions and be extremely careful when handling the camera or the PCB.



Now there are two options for housing and mounting the PCB with the USB Cable mini jack:

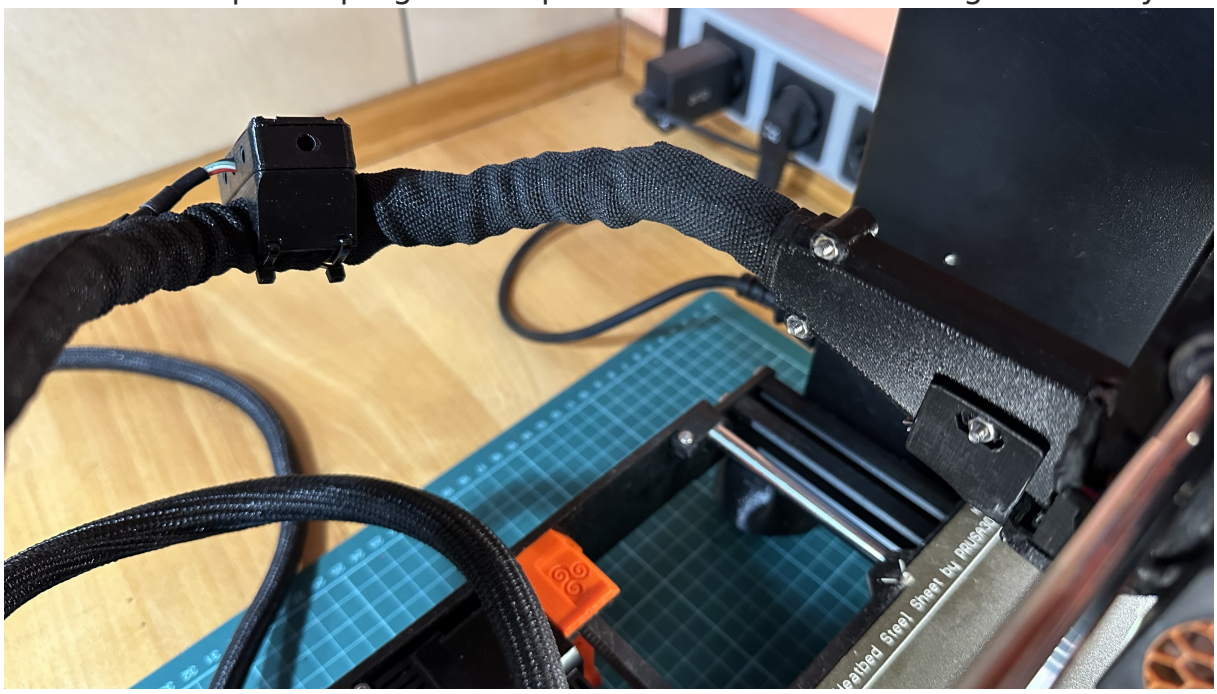
OPTION a) On the back of the X-axis cable support. This way the housing is mounted fixed to the PETG parts of the x-axis cable support. Disadvantage is the 90 degree cable angle and that the flat camera cable has to be folded once. This can lead to cable breaking (in one case for me it did) so I decided to build another mounting option.



OPTION b) The PCB is mounted on the cable strain from the X-axis. This way camera and USB cable are in line with no sharp angles for the flat

camera cable. There is less stress to the camera cable. And it does not matter what kind of X-axis cable support you use.

To fix the clamp (base for PCB housing) to the cable strain I used two mini zip ties. The PCB box is glued with its base to the flat part of the clamp with some drop of superglue. I hope the camera will live longer this way.



Attention: PCB box and Top in Option A + B are different! OPTION A has the USB cable outlet at the side and OPTION B has the USB cable outlet on the back (in-line).

Though this camera is super fragile I like the macro-pictures of the nozzle while printing. It was quite a long developing process and a had to pay for some of my mistakes in the beginning (breaking more than one 3DO cameras ... had to buy new ones). At 3DO they must be wondering what I am doing with all those cameras :-)

Update (Comment):
@SpartanFPV_40710 reminded me, that it is not the stock x-axis cable support, that my camera holder is mounted on. I almost forgot I upgraded this part. So before adding my camera mount upgrade the x-axis cable support with this model: https://www.printables.com/de/model/139656-prusa-i3-mk3-x-axis-cable-holder-roomy-revo-editio . That is the one I have installed a long time ago and it is a great improvement anyway.

This remix is based on

3DO Nozzle Camera Mount for Prusa i3 MK3S+

by Clamikra

Model files

nozzle-cam-3do-4k-v13-led-pearl-ab.stl

Camera case (for both options A+B)

nozzle-cam-3do-4k-v13-led-pearl-a.stl

Camera case part A (for both options A+B)

nozzle-cam-3do-4k-v13-led-pearl-a.3mf

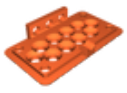
Camera case part A (for both options A+B)

nozzle-cam-3do-4k-v13-led-pearl-b.stl

camera case part B (for both options A+B)

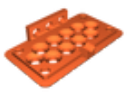
option-b-nozzle-cam-3do-v13-all-parts-print.3mf

Option B (X-axis cable mount) All Parts



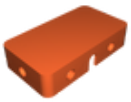
option-b-nozzle-cam-3do-pcb-deckel-v13.stl

Option B Top for PCB case



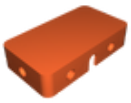
option-b-nozzle-cam-3do-pcb-deckel-v13.3mf

Option B Top for PCB case



option-b-nozzle-cam-3do-pcb-case-v13.stl

Option B PCB Case



option-b-nozzle-cam-3do-pcb-case-v13.stl

Option B PCB Case

option-b-nozzle-cam-3do-pcb-kabelhalter-v13.stl

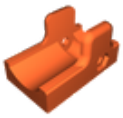
Option B Base zipped to X-axis Cable strain

option-b-nozzle-cam-3do-pcb-kabelhalter-v13.3mf

Option B Base zipped to X-axis Cable strain

option-a-nozzle-cam-3do-4k-boxholder-v9.3mf

Option A X-Axis Support Mount - Base



option-a-nozzle-cam-3do-4k-boxholder-v9.stl

Option A X-Axis Support Mount

nozzle-cam-3do-4k-v13-led-pearl-blind.3mf

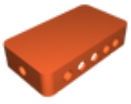
To be glued near the LED - optional

option-a-nozzle-cam-3do-pcb-top-v9.stl

Option A PCB Top

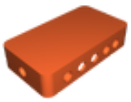
option-a-nozzle-cam-3do-pcb-top-v9.3mf

Option A PCB Top



option-a-nozzle-cam-3do-pcb-case-v9.3mf

Option A PCB Case



option-a-nozzle-cam-3do-pcb-case-v9.stl

Option A PCB Case

Print files

nozzle-cam-3do-4k-v13-led-pearl-ab-print_015mm_petg... .gcode

PET 0.40 mm 0.15 mm 1.08 hrs 7 g Prusa MK3S/S+ & MMU2S

Camera case (for both options A+B)

nozzle-cam-3do-v13-all-parts-print_02mm_petg_mk3smm... .gcode

PET 0.40 mm 0.20 mm 2.76 hrs 24 g Prusa MK3S/S+ & MMU2S

Option B (x-axis Cable Mount)

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