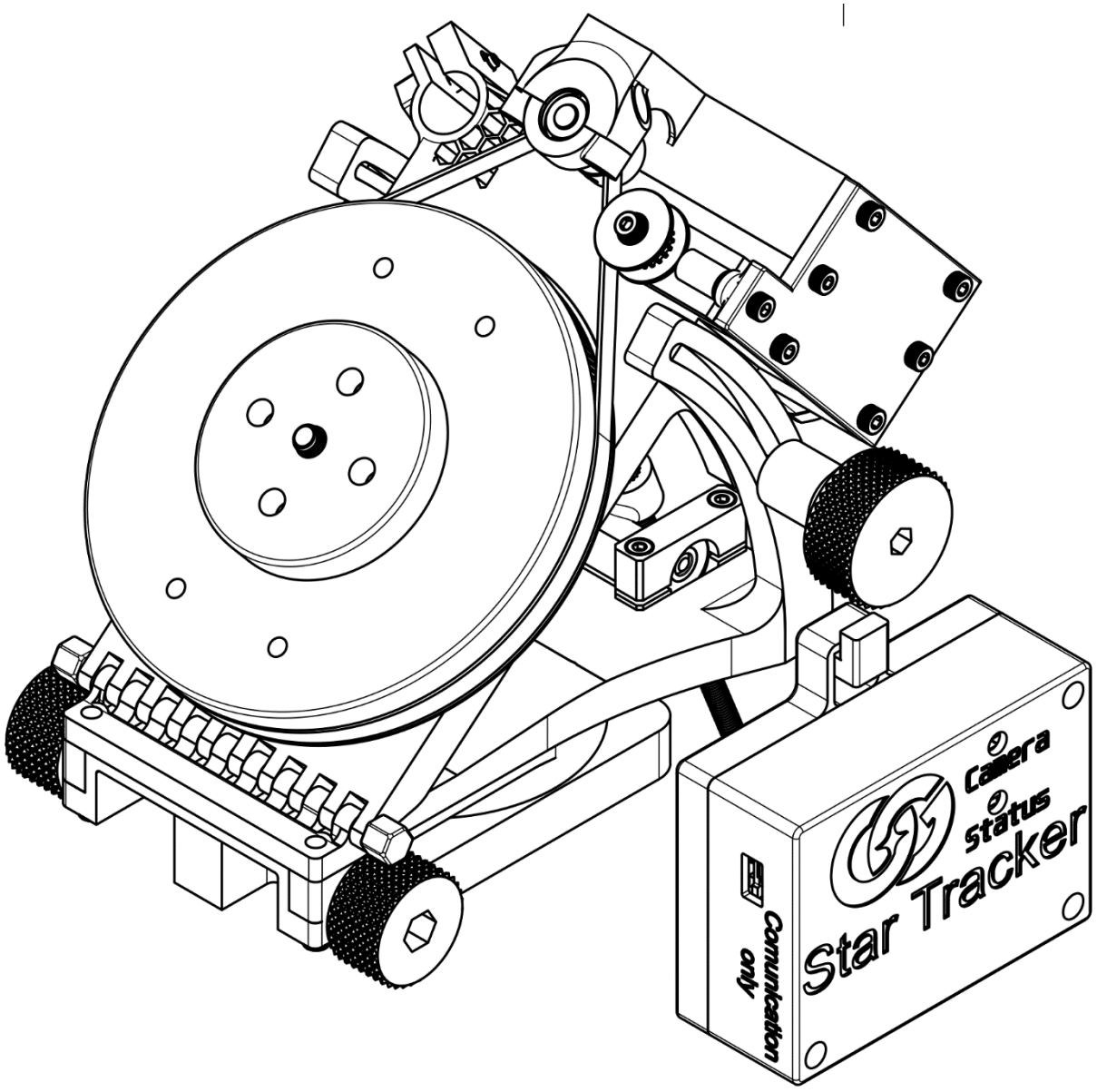
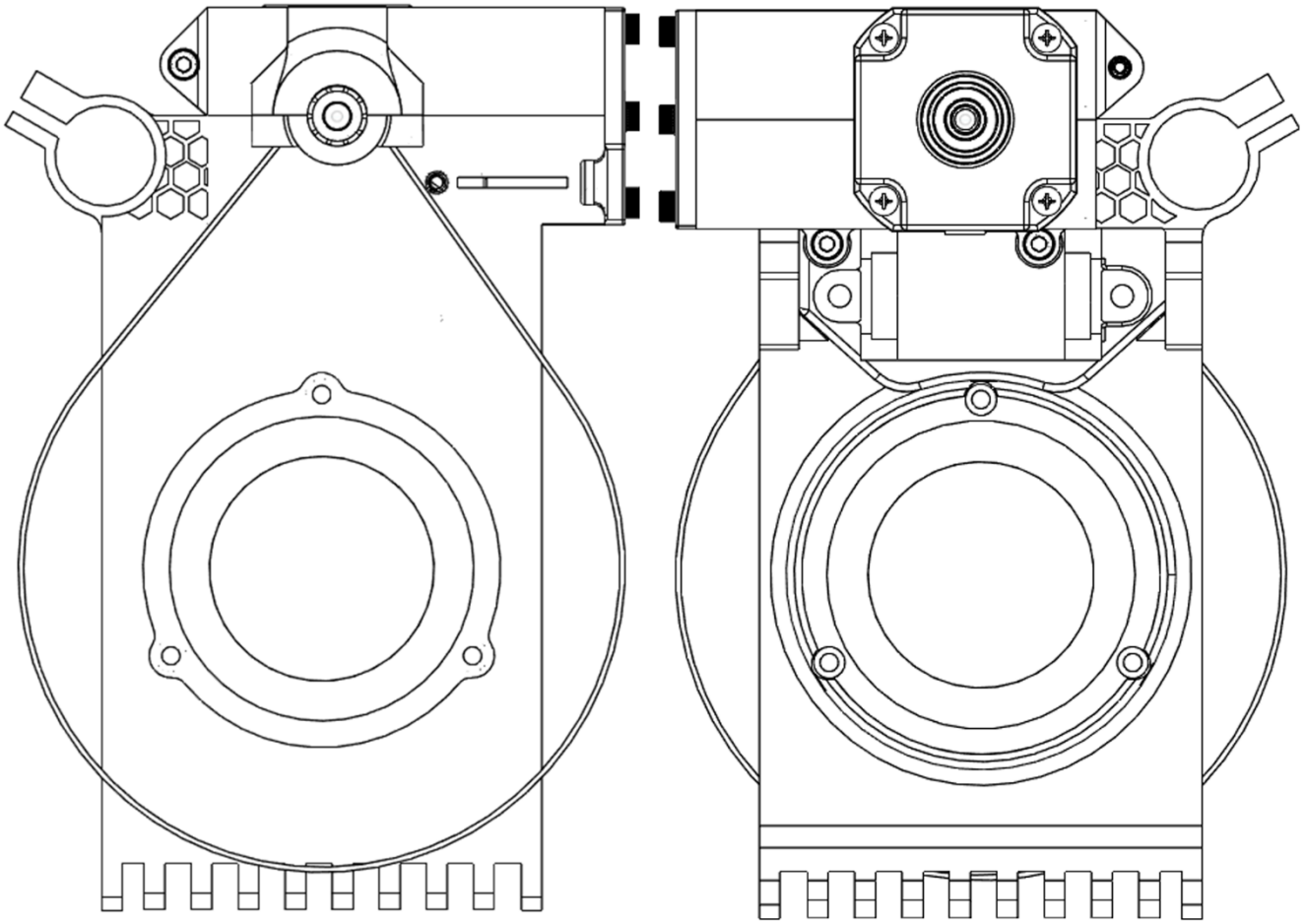
Instruction manual

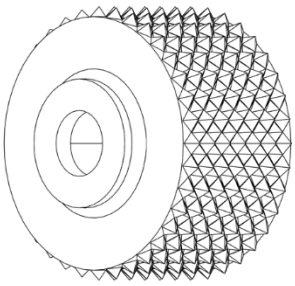
star tracker



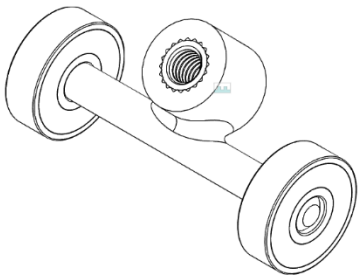
List of 3d printed parts



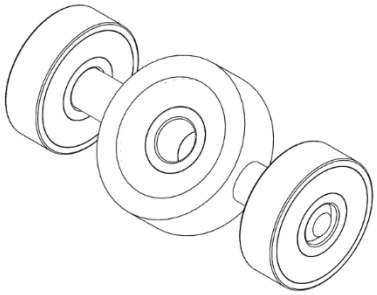
Main part with assembled gearbox



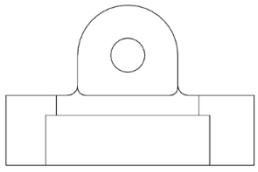
m5 bottom knob 2x



bottom part with threaded insert and 2x 625 bearings

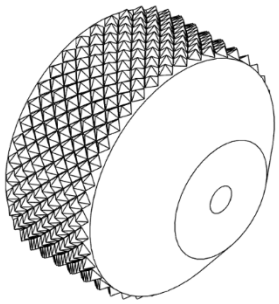


rotating bearing holder with 3x 625 bearings

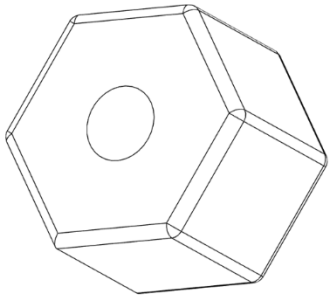


Top holder 2x

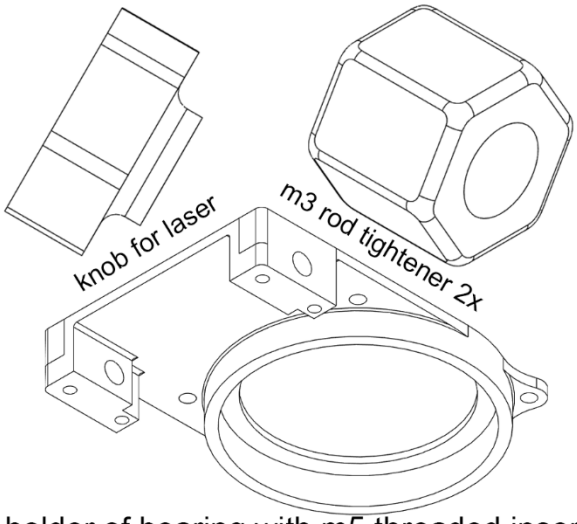
Bottom holder 2x



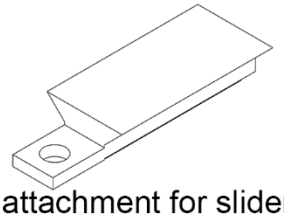
top knob m3



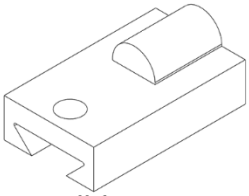
rotator with m5 threaded insert



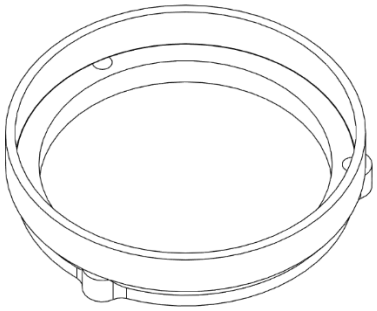
Middle holder of bearing with m5 threaded insert



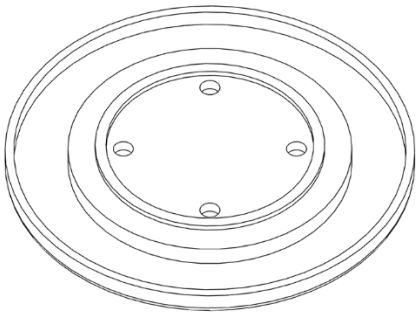
attachment for slider



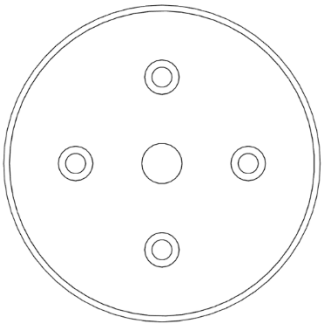
slider



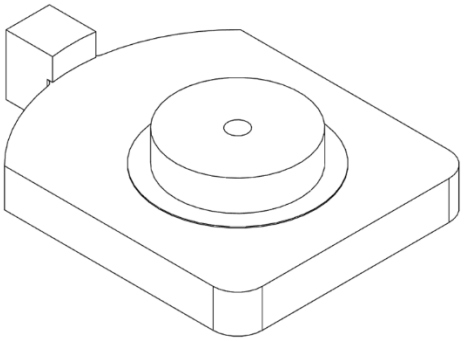
middle bearing holder



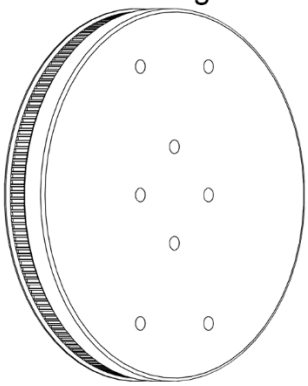
Cover and tightener



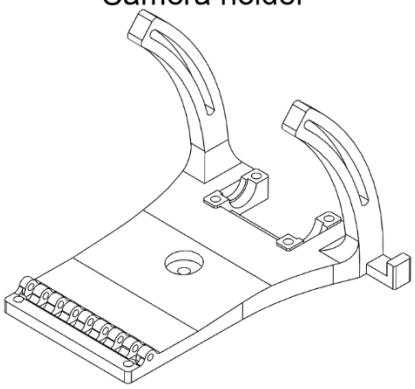
Camera holder



Stationary part

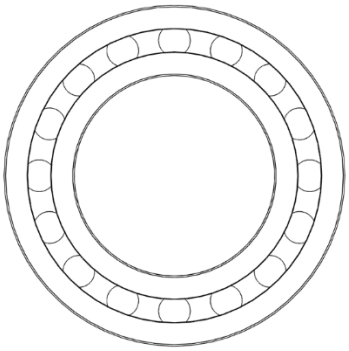


Big pulley

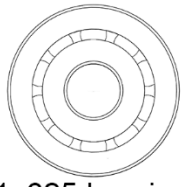


Main bottom part

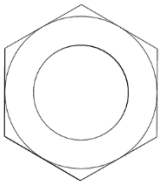
Hardware parts



3x 16008 bearing



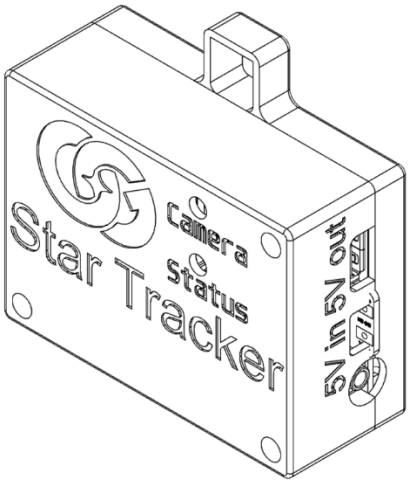
1x625 bearing



5xM5 nut

5x M3x20
DIN 912

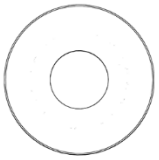
2x M5x50
DIN 933



electronics box with pcb

4x M3x10
DIN 912

30x M3x8
DIN 912



20 teeth
pulley

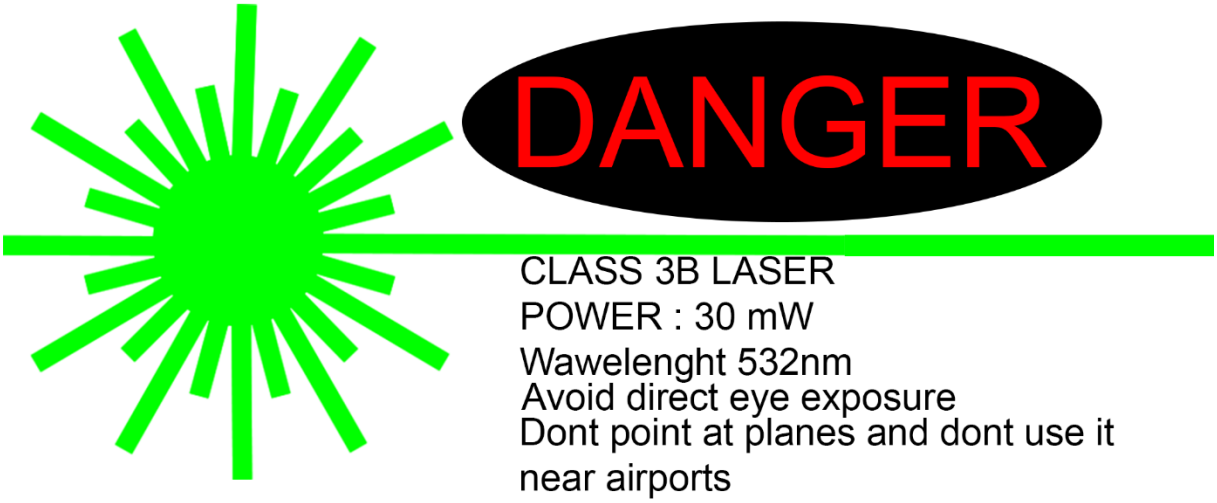
3x M3x16
DIN 933

1x M3x12
DIN 933

- 1x Allan key 2mm
- 1x Allan key 2,5mm
- 1x Allan key 4mm
- 1x 1/4-20unc x 1/2-inch din933
- 1x xh2,54 cable for stepper motor
- 1x laser
- 2x AAA bateries for laser

Important

Do not leave the star tracker in direct sun or in temperatures over 45 °C.



In cold weather (under 0°C) the laser will not shine visible light. It will be shining very dangerous invisible infrared light. In that case you will need to warm the laser with hand or lens dew heater.

First power off the mount before disconnecting stepper motor. It might destroy the stepper motor driver.
Don’t connect stepper motor when the electronics is powered on. It might destroy the stepper motor driver.

Assembly

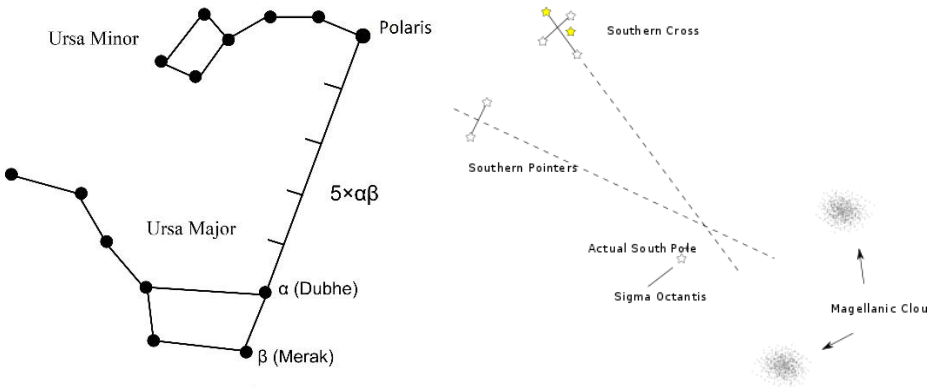
Assembly guide 2

Assembly guide 1

1. Start from 2:50 because the mount is partially assembled
2. In second video the middle bearing holder is bigger because it's a newer version
3. You will use instead of m5x16 m5x25.
4. In second video around 0:15 you will insert here a big bearing (16008)
5. In second video around 1:58 you will use m3x10 screws instead of m3x12

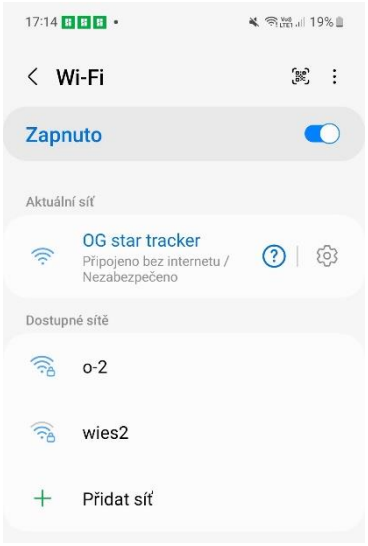
Quick setup

1. Level the tripod
2. Attach the star tracker to the tripod and place the tripod on firm surface.
3. Connect stepper motor to the electronics box (RA port) before powering on.
4. Point at Polaris or south celestial pole for polar alignment.



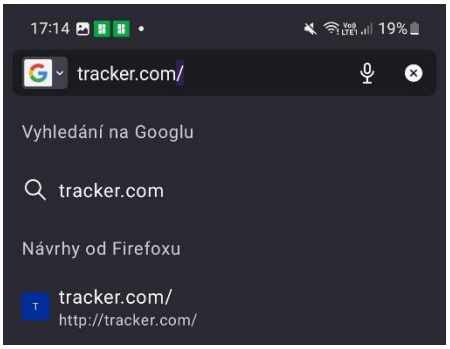
5. Focus the lens with bahtinov mask (or without) on bright star.
6. Use ball head to find object you would like to shoot.
7. Take lights frames you can check a great tutorial on : https://clarkvision.com/articles/astrophotography-made-simple/
8. Power off the mount.
9. Disconnect stepper motor now!
10. Stack and edit the final picture.

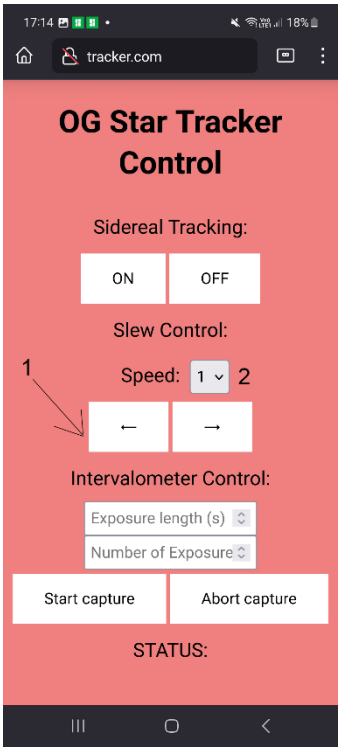
Web app usage



First power on the tracker with usb-c cable that is connected to power bank or phone charger. After that you will see green led diode turn on which means that the tracker powered on.
After tha you will conect to the OG star tracker wifi. It might say that this wifi has no internet connection, you will ignore this.

After connecting to the Wi-Fi you will open an browser of your choice and go to the address tracker.com. If you can't open the address you can try to open it in anonymous mode.





After you have opened the website, you can control the mount from here.

1. With these buttons you can move with the RA axis.
2. Here you can change the speed of the movement.

When you will be moving with the RA axis the green diode would star blinking.

To use intervalometer you need to change the exposure length in manual mode on your camera to bulb.
When the camera will be taking exposures with intervalometer the red diode will turn on. At that time you can't touch the tracker or camera.

Debugging:

The stepper motor is making noises or its not moving.
Then you need to try more powerful power source. Because most likely yours

Power source its not powerful enough. (Yours power bank might be empty or your phone charger is too weak).

If you would have some troubles, you can write me an email:
ogstartracker@gmail.com
Or you can ask on our discord server. (It’s faster than email)

Discord link

Enjoy

Technical specifications

Payload(MAX)	3kg
Gear reduction	101.25
Body dimension	200mm x 160mm x 115mm
Latitude adjustment range	0-25°, 25°-50°, 45°-65°.
AZ adjustment range	50°
Warranty	2 years
Periodic error (10min)	17” arc-seconds
Wi-Fi control	yes
Operation Temperature	-15°-35°C
Tripod connection	¼-20 unc screw
Ball head connection	¼-20 unc screw (you can use ¼-20 to 3/8 adapter)
Intervalometer port	Yes 2,5mm jack port
Power connector	Usb-c (5V)
Body material	Pla plastic
Weight	1,5kg
Motor drive	DC stepper motor 0,9°