

Optical filters

OPTICAL FILTERS USED IN KUROKESU PRODUCTS

DATASHEET



KUROKESU

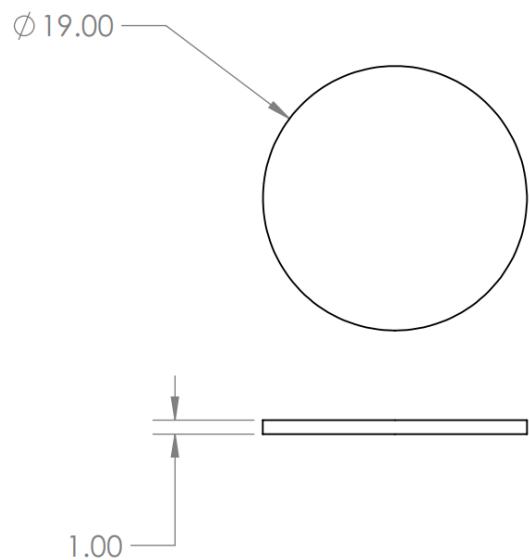
2022-01-15, Rev. #30

LP0508-P0050 - IR CUT filter

This filter is designed and manufactured for C1, C1 PRO, C920 and Brio reworked cameras but can be used for all other applications (like astronomy). It is used to block IR and UV light.

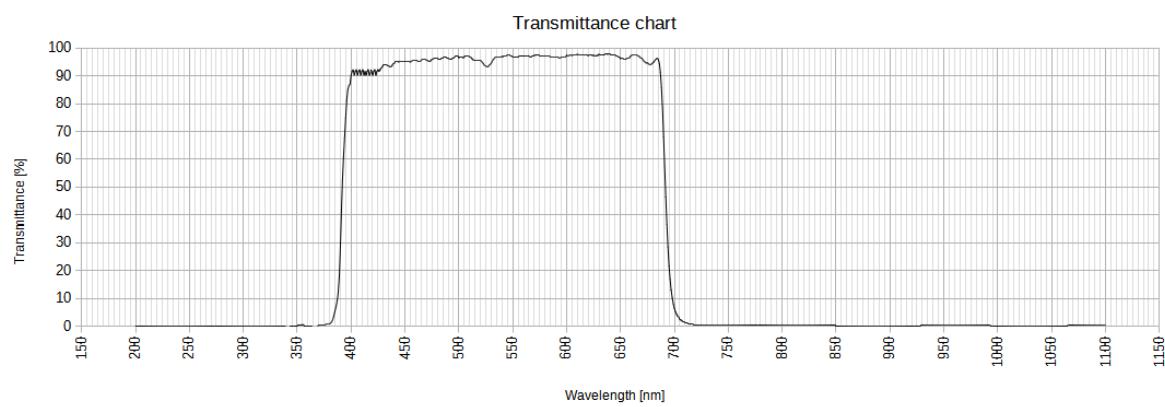
Dimensions

- Diameter: 19.0+/-0.1mm
- Thickness: 1.0+/-0.1mm



Specifications

- Coating: AR+UV+IR block
- Transmittance(avg) > 90%@370 -650nm
- OD value: >2@750-1050nm

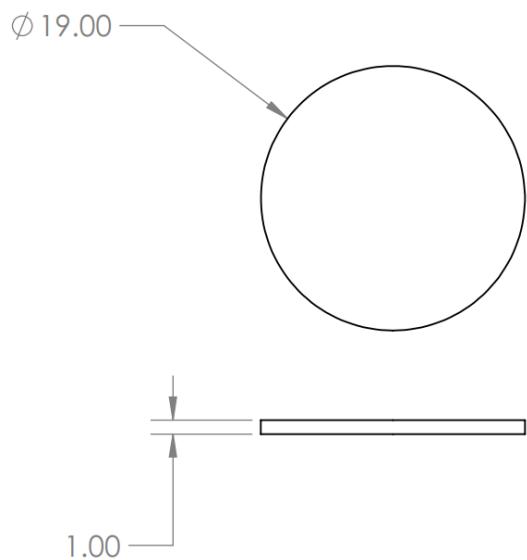


LP0508-P0051 - Longpass NIR 850nm filter

Longpass filter is manufactured for C1, C1 PRO, C920, and Brio reworked cameras but can be used for all other applications (like astronomy). This filter blocks visible light and lets the IR portion of the spectrum reach the sensor.

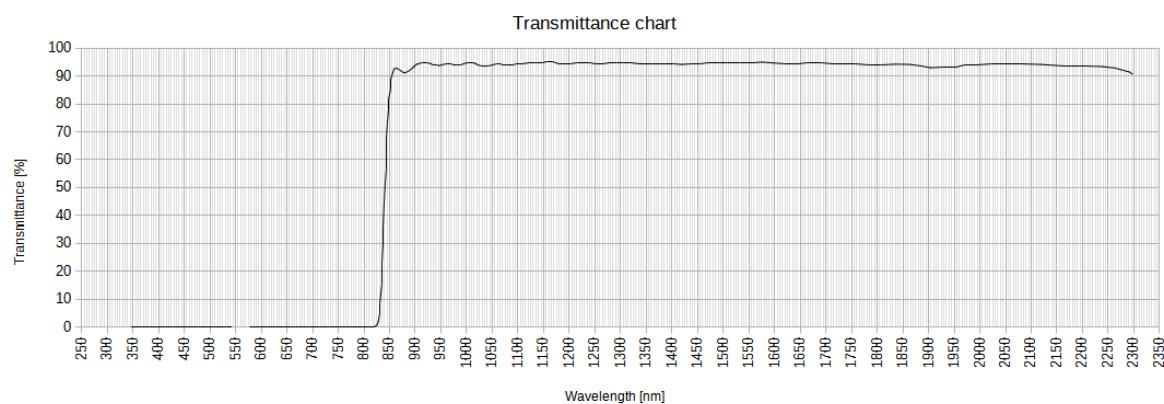
Dimensions

- Diameter: 19.0+-0.1mm
- Thickness: 1.0+-0.1mm



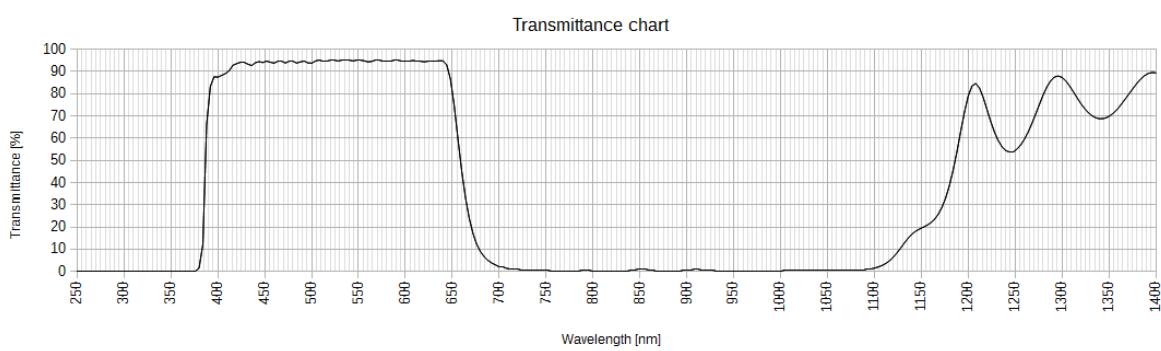
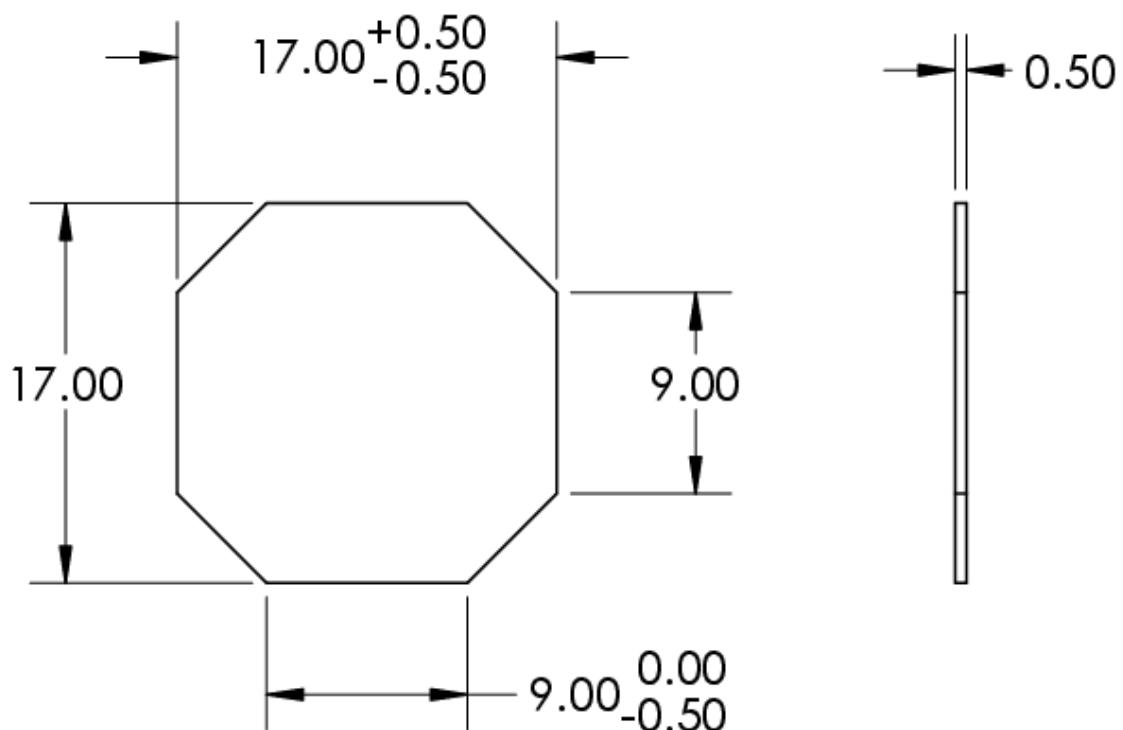
Specifications

- Wavelength: >850nm
- Coating: AR (install reflective side face towards object)
- Transmittance(avg) > 80%@850-2200nm
- OD value > 3.5@200-800nm



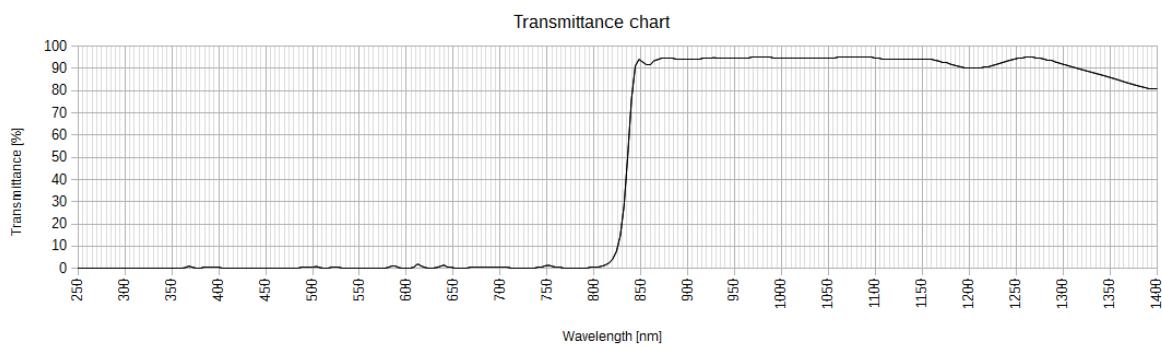
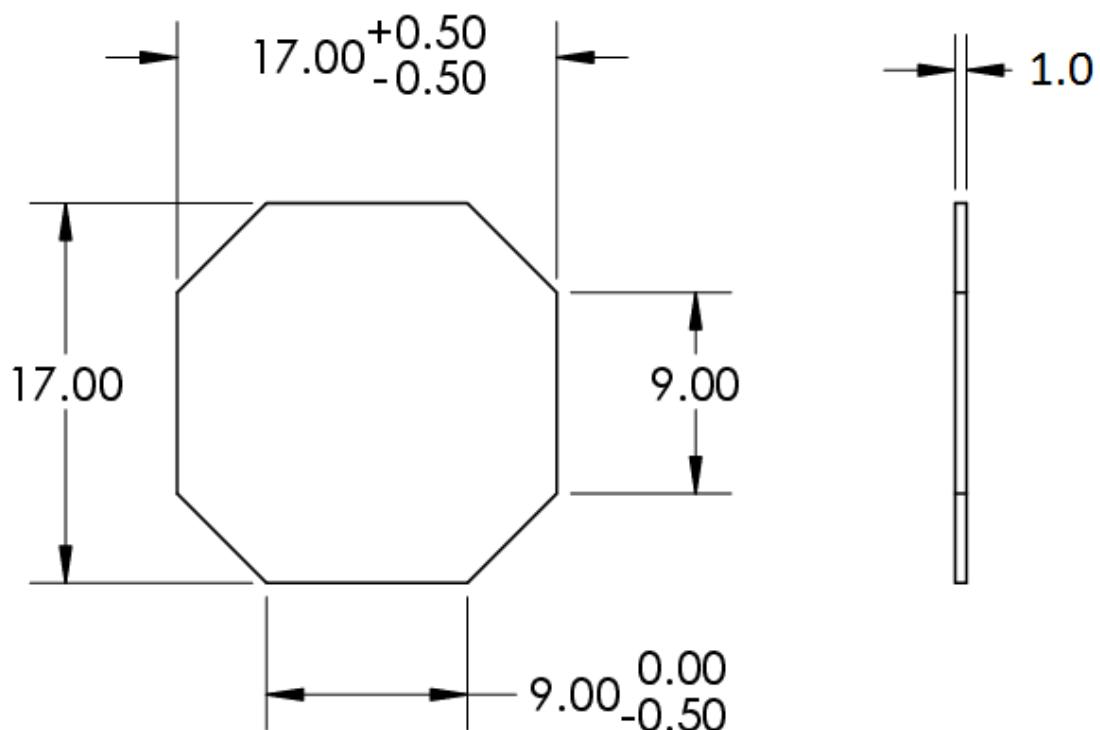
F2LOW650 - IR CUT 650nm filter

This filter is designed and manufactured for C1, C1 PRO, C920 and Brio reworked cameras but can be used for all other applications (like astronomy)



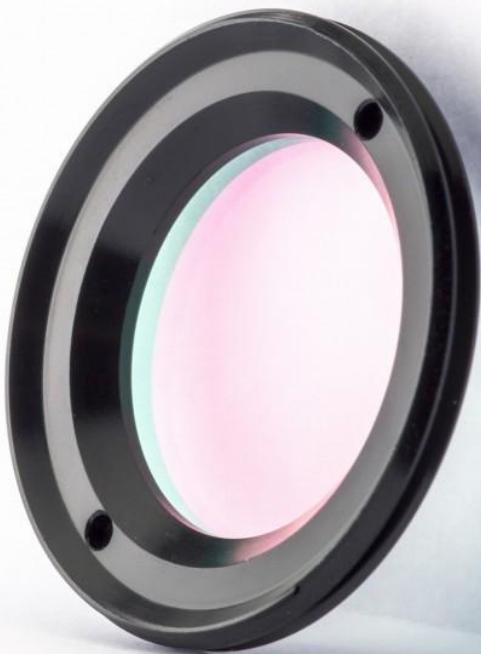
F2HIGH830 - longpass NIR 830nm filter

Longpass filter is manufactured for C1, C1 PRO, C920 and Brio reworked cameras but can be used for all other applications (like astronomy)



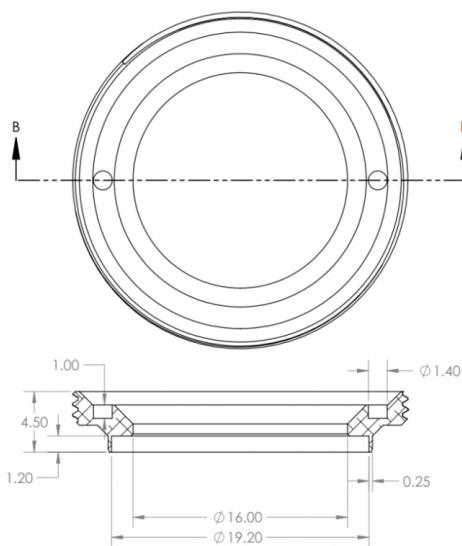
D19x1_IRCUT_SCREWIN - Screw in low profile IR-CUT filter

Low profile screw-in IR CUT filter is designed for CS and C-mount cameras. Filter can be used with most lenses without disassembling camera or lens.



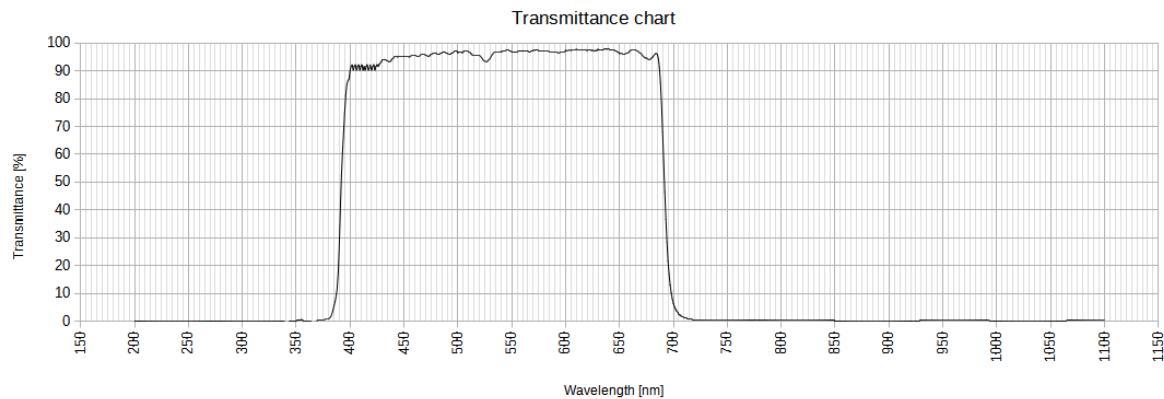
Dimensions

- Diameter: 25.4+/-0.1mm
- Thickness: 4.5+/-0.1mm



Specifications

- Coating: AR+UV+IR block
- Transmittance(avg) > 90%@370-650nm
- OD value: >2@750-1050nm



Tool

Knipex **48 11 J1** Precision Circlip Pliers are recommended to install and remove filter.

- Tips (diameter): Ø 1.3 mm
- Size of bore: Ø 12 - 25 mm
- EAN: 4003773048527
- Dimensions: 140 x 48 x 12 mm
- Weight: 105 g



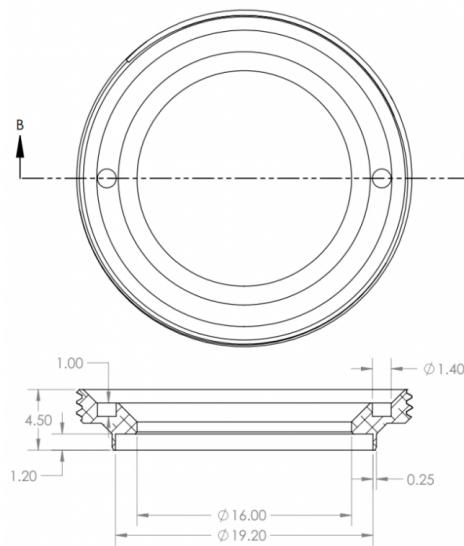
D19x1_NIR_SCREWIN - Screw in low profile Longpass NIR 850nm filter

Low profile screw-in NIR filter is designed for CS and C-mount cameras. Filter can be used with most lenses without disassembling camera or lens.



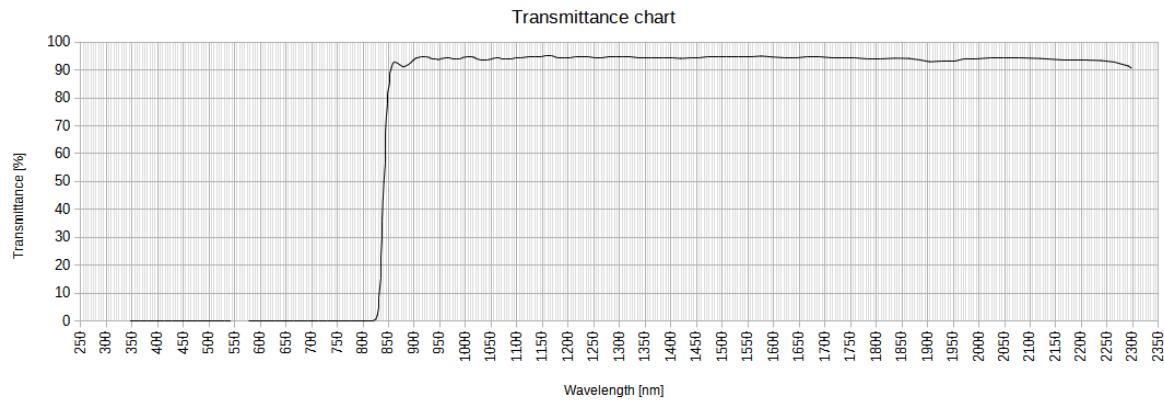
Dimensions

- Diameter: 25.4+/-0.1mm
- Thickness: 4.5+/-0.1mm



Specifications

- Wavelength: >850nm
- Coating: AR (install reflective side face towards object)
- Transmittance(avg) > 80%@850-2200nm
- OD value > 3.5@200-800nm



Tool

Knipex **48 11 J1** Precision Circlip Pliers are recommended to install and remove filter.

- Tips (diameter): Ø 1.3 mm
- Size of bore: Ø 12 – 25 mm
- EAN: 4003773048527
- Dimensions: 140 x 48 x 12 mm
- Weight: 105 g



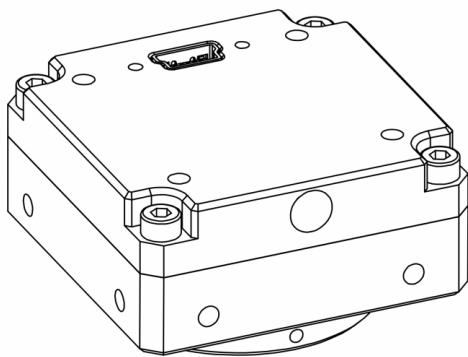
Replacing filter in C1 and C1 PRO cameras

C1 and C1 PRO cameras can be ordered with filter options:

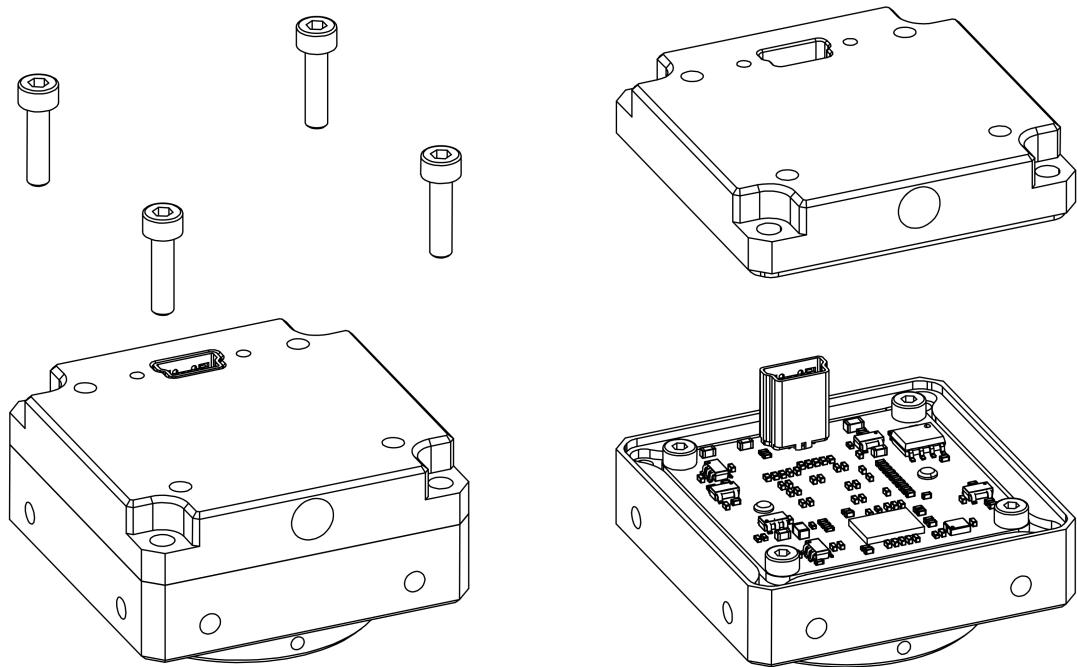
- LP0508-P0050 650nm short pass
- LP0508-P0051 850nm long pass
- No filter
- Custom

In order to replace a only some basic tools and possibly optics cleaning materials and consumables are needed.

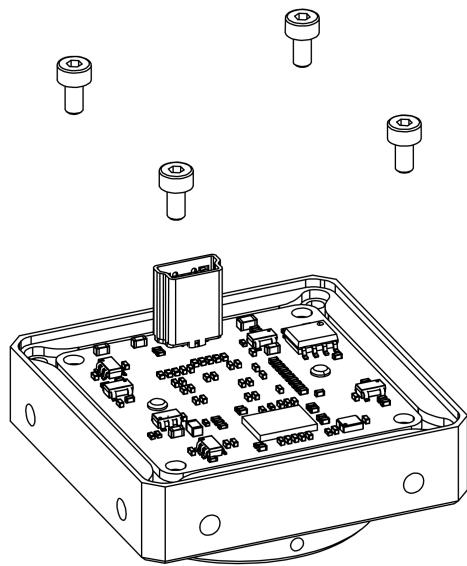
Make sure camera is clean so dust particles will not be transferred on a filter or imaging sensor.



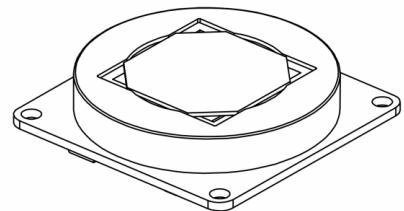
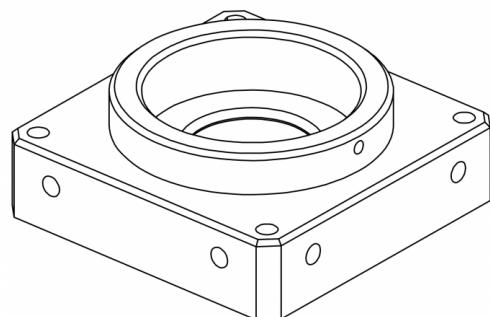
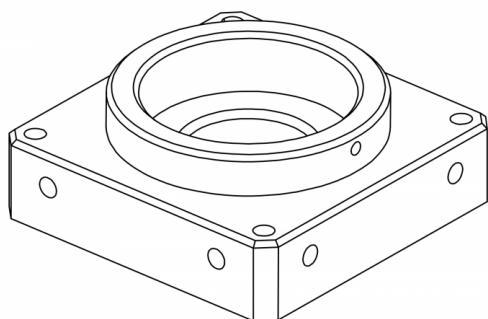
Unscrew 4 DIN912 M2.5x10 screws (recent models were updated with Torx T5 screws) and remove back plate



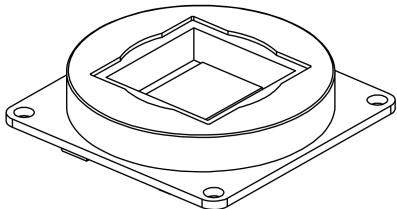
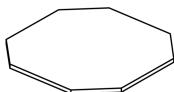
Unscrew 4 DIN912 M2x5 screws holding PCBA



Carefully flip camera holding everything together. Then lift front plate. Filter is resting on silicone spacer. Filter nor spacer is not glued, but will be slightly bonded to each other.



Remove filter with tweezers and replace with new one. Inspect optical path for possible dust. Clean if needed.



Assembly camera in reverse order.

Optical filter influence on captured image

Even if camera sensor has RGB filters sensor is sensitive to wider range of light than human eye can see. This usually covers spectrum range from UV to NIR. Some sort of filter is required in order to get required image style or properties. Various optical filters have different use purposes. This topic covers 3 use cases Visible, NIR and full spectrum.

Example pictures below represents different use scenarios:

Visible spectrum

650nm IR CUT filter should be used in order to get natural picture look.



Full spectrum

No filter is used in the camera. In this scenario all full spectrum of light will reach sensor.



Wide 2.1mm NO FILTER

NIR spectrum

In this scenario only IR portion of light can reach sensor.



Wide 2.1mm IR (>950)