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# Optical filters

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OPTICAL FILTERS USED IN KUROKESU PRODUCTS

## DATASHEET



**KUROKESU**

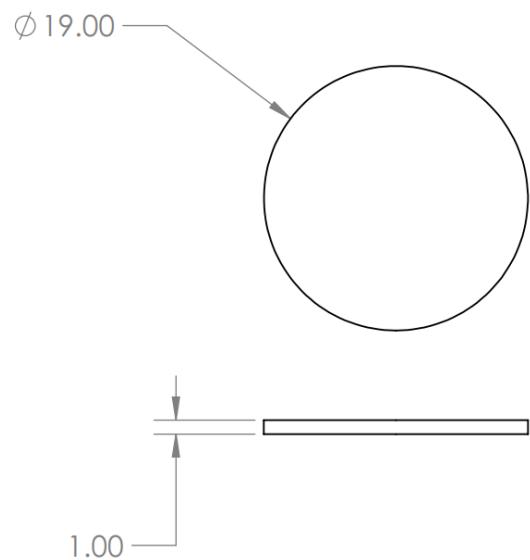
2022-01-07, Rev. #23

## 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.

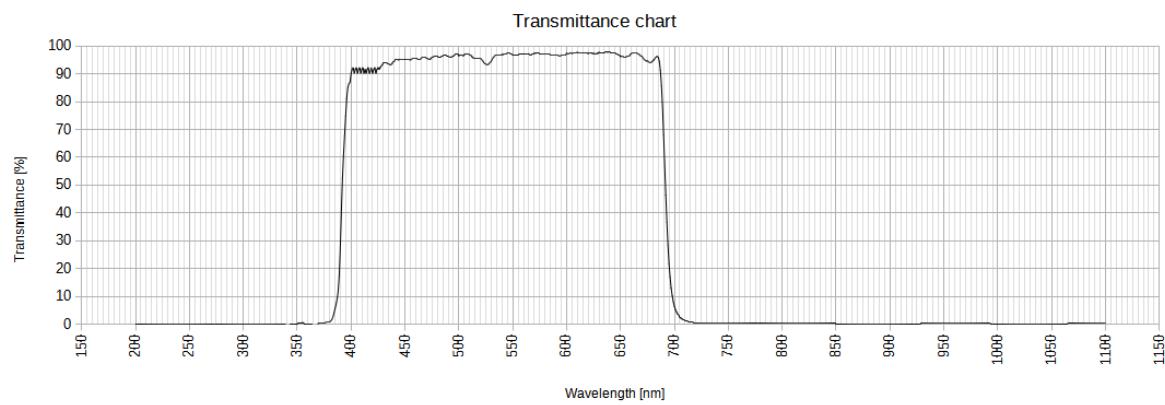
### Dimensions

- 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

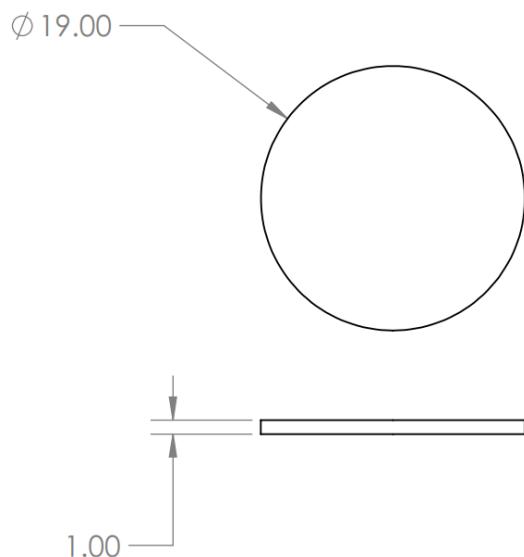


# LP0508-P0051 - Longpass NIR 850nm filter

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.

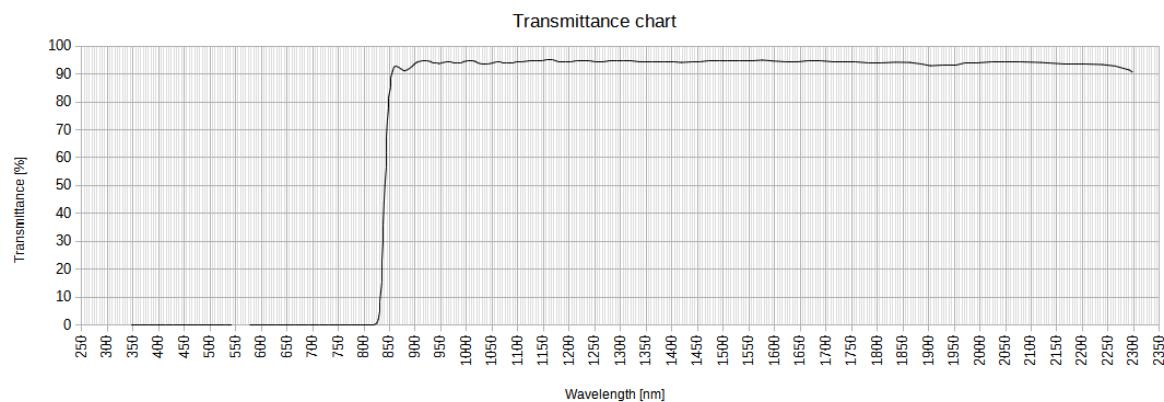
## Dimensions

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



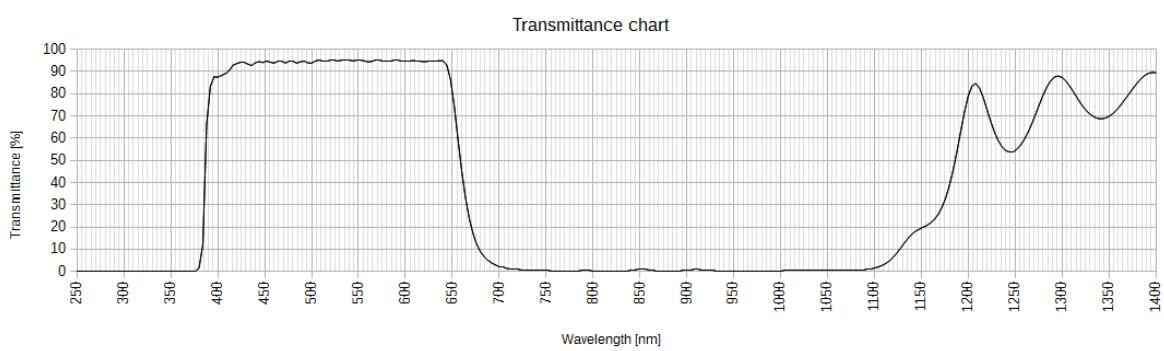
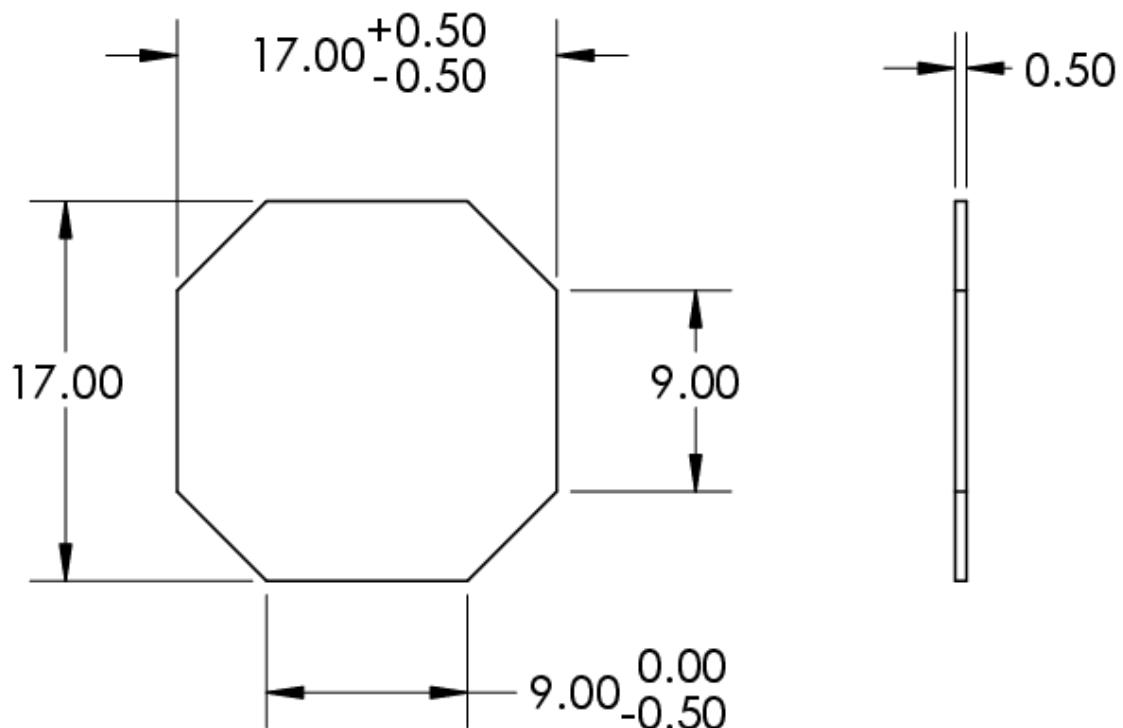
## Specifications

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



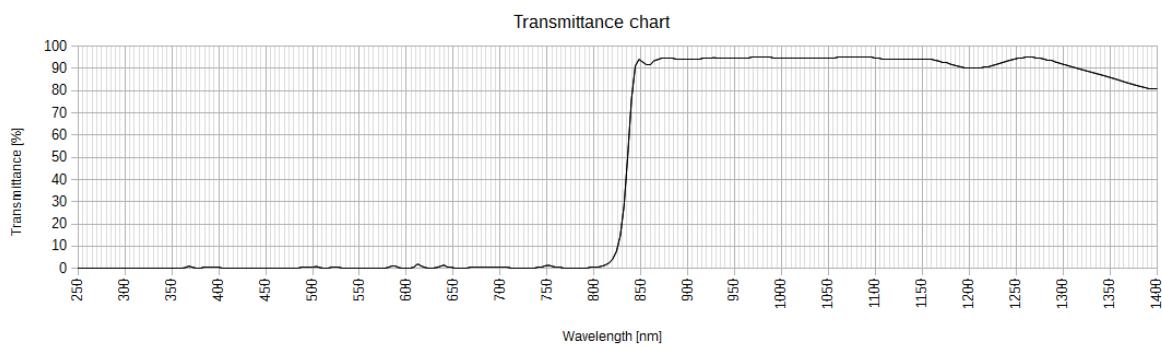
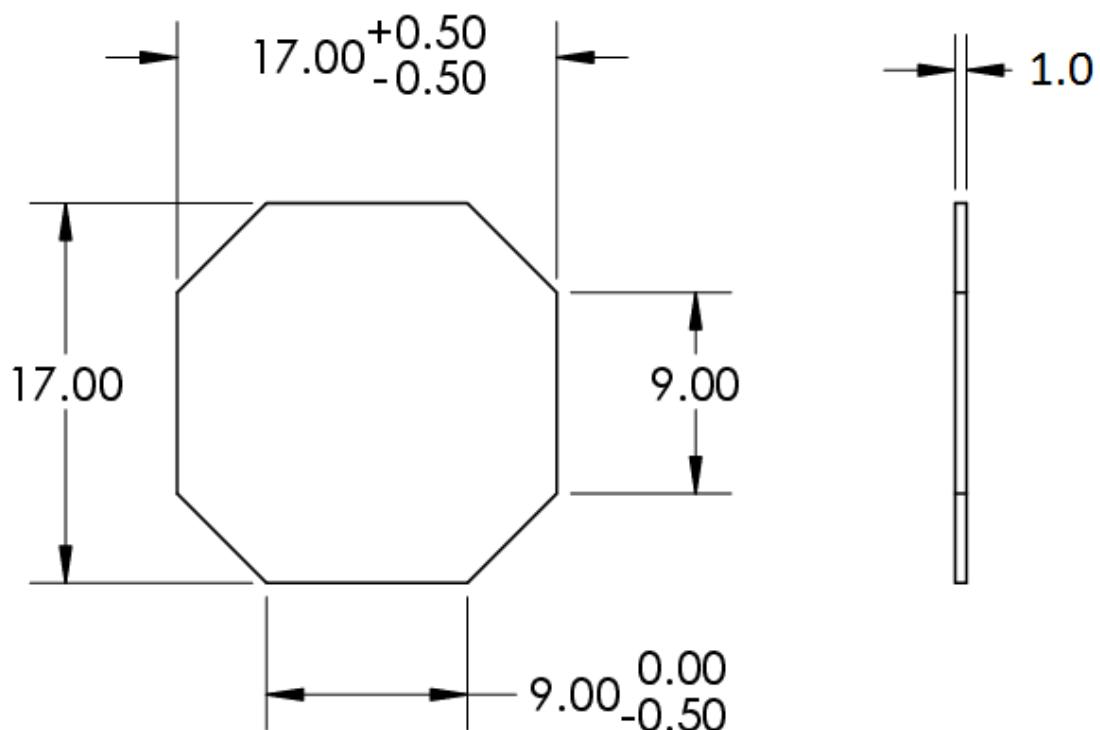
## F2LOW650 - IR CUT 650nm filter

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)



## Replace filter in C1 and C1 PRO cameras

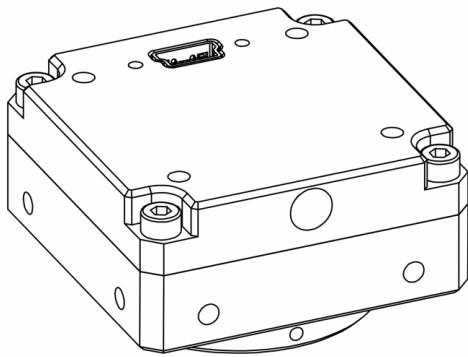
C1 and C1 PRO cameras can be ordered with filter options:

- 650nm short pass
- 850nm long pass
- No filter
- Custom

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

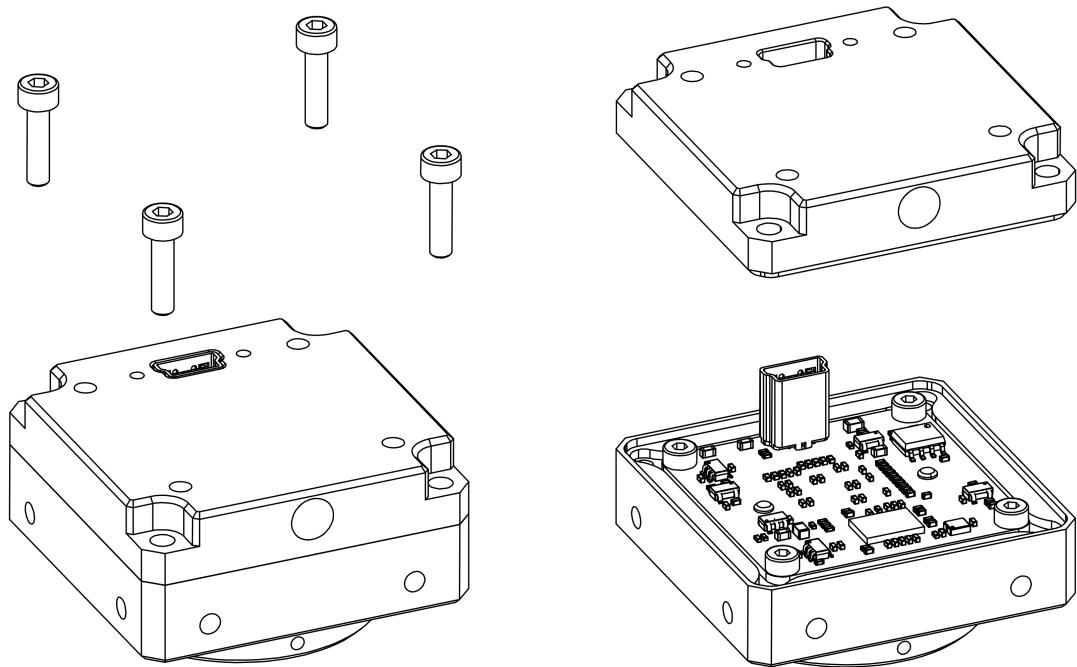
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Make sure camera is clean so dust particles will not be transferred on a filter or imaging sensor.



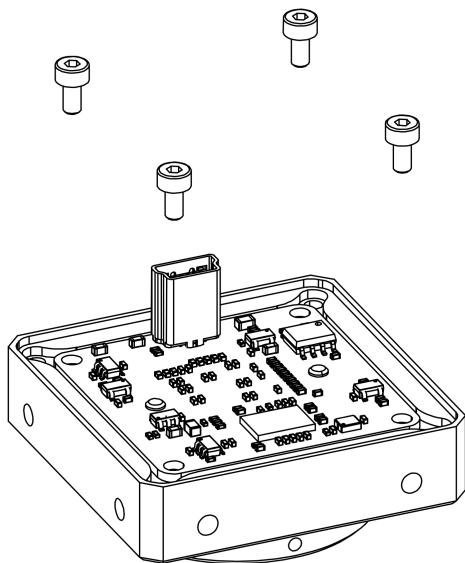
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Unscrew 4 DIN912 M2.5x10 screws (recent models were updated with Torx T5 screws) and remove back plate



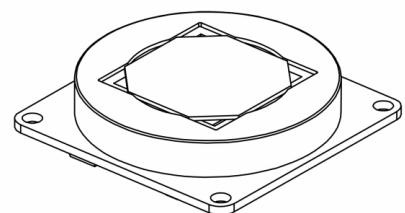
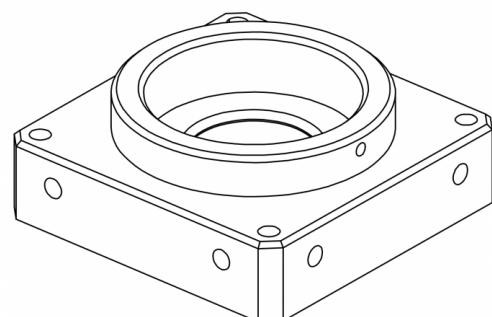
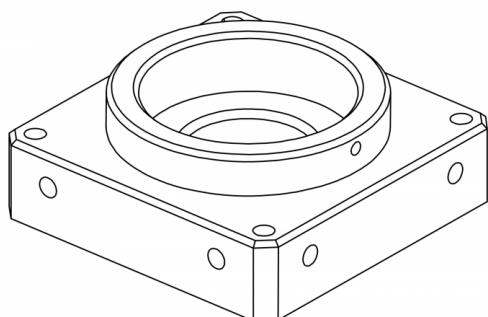
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Unscrew 4 DIN912 M2x5 screws holding PCBA



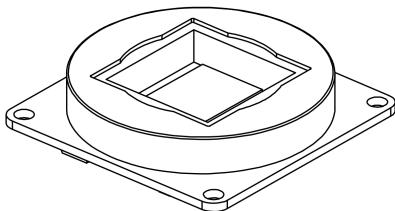
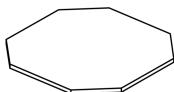
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Carefully flip camera holding everything together. Then lift front plate. Filter is resting on silicone spacer. Filter nor spacer is not glued, but will be slightly bonded to each other.



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



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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.



NIR spectrum

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

