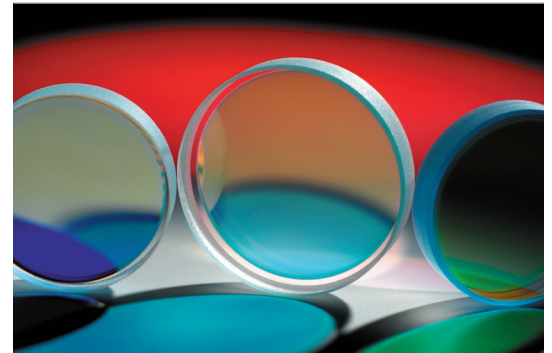




# Fluorescence Filter Sets

## Fluorescence Filter Sets for Highly Sensitive Detection of Fluorophores

Materion Balzers Optics fluorescence filter sets include excitation and emission filters (bandpass, shortpass or longpass) as well as a dichroic beamsplitter. Cut-on and cut-off wavelengths of the filters are optimized for the excitation light source and for the fluorescent dye. The filter performance is realized by all-dielectric hard coatings deposited onto a single substrate. Because absorbing glasses and filter mounts are not needed, there is a high flexibility for the filter dimensions in compact optical set-ups.



### Benefits

- High transmittance > 95%
- Deep blocking >OD5
- Steep filter edges for sharp imaging
- Long-term shift-free spectral performance
- High environmental stability
- High flexibility in filter size

### Applications

- Fluorescence detection of fluorophores, e.g. CY5, CY3, FITC, TRITC

### Technical Data

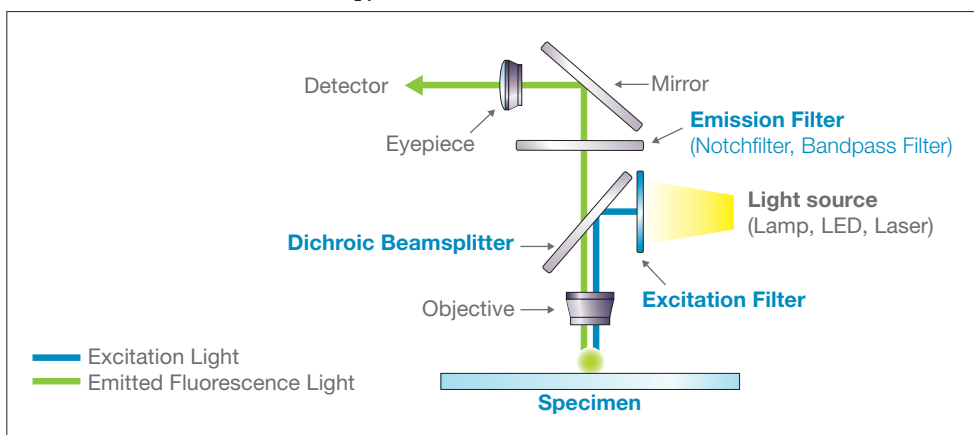
#### Excitation and emission filters

|                    |  |
|--------------------|--|
| Transmittance      | $T_{ave} > 95\%$   |
| Blocking           | OD5 / OD6  |
| Angle of incidence | AOI=0°   |
| Dimensions         | standard size Ø 25 mm,<br>thickness 3 mm (other dimensions on request) |

#### Dichroic Beamsplitter

|                         |   |
|-------------------------|---|
| Transmittance           | 90% – 97%   |
| Reflectance             | 90% – 99%   |
| Angle of incidence      | AOI=45°,<br>(different AOI on request)                            |
| Dimensions              | standard size 36mm x 26mm x 1mm,<br>(other dimensions on request) |
| Substrate               | fused silica, BK7 or float glas                                   |
| Parallelism             | < 3 arcmin  |
| Surface Defects         | 5 / 3 x 0.1   |
| Environmental Stability | Temperature -40 ... + 150 °C<br>Humidity up to 99%                |

### Schematic of Fluorescence Microscopy



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**Filter set for fluorescence detection of CY5 (measurement)**

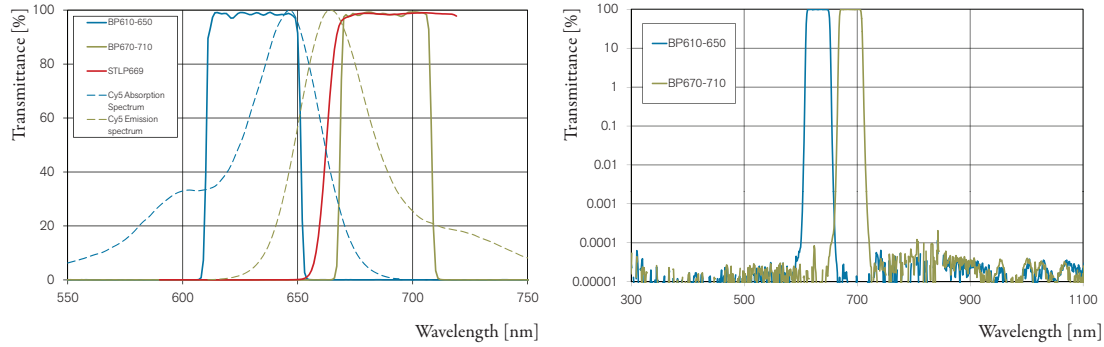


Fig. 1: Measured spectral transmittance in passband (left) and in blockband (right) range.

**Filter set for fluorescence detection, e.g. CY3, TRITC (measurement)**

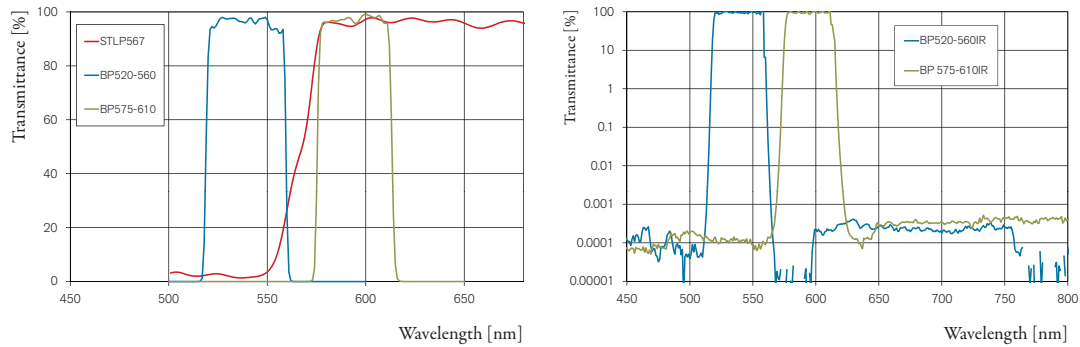


Fig.2: Measured spectral transmittance in passband (left) and in blockband (right) range.