

# Bandpass Filters for Biophotonics

## Steep Edge Bandpass Filters for Fluorescence and Raman Detection

Materion Balzers Optics bandpass filters excel by steep transition between blockband and passband and high passband transmittance. The all-dielectric interference filters are deposited by plasma-assisted processes and show extreme environmental stability. Our sophisticated filter designs are optimized according to the requirements of the application.



### Benefits

- Sharp separation between blockband and passband
- High transmittance > 90 % outside the blockband
- Long-term shift-free spectral performance
- High environmental stability
- Wide flexibility in filter size

### Applications

- Fluorescence detection
- Raman spectroscopy
- Excitation filters for LED and lasers

### Technical Data

#### Passband wavelength

240 – 2000 nm

#### Blocking

OD5 to OD6, depending on requirements

#### Transmittance

> 90 – 95 % outside blockband

#### Angle of incidence

Standard 0°, different AOI on request

#### Substrate material

Fused silica or BK7

#### Dimensions

Standard size Ø 25 mm, thickness 3 mm,  
other dimensions on request

#### Parallelism

< 3 arcmin

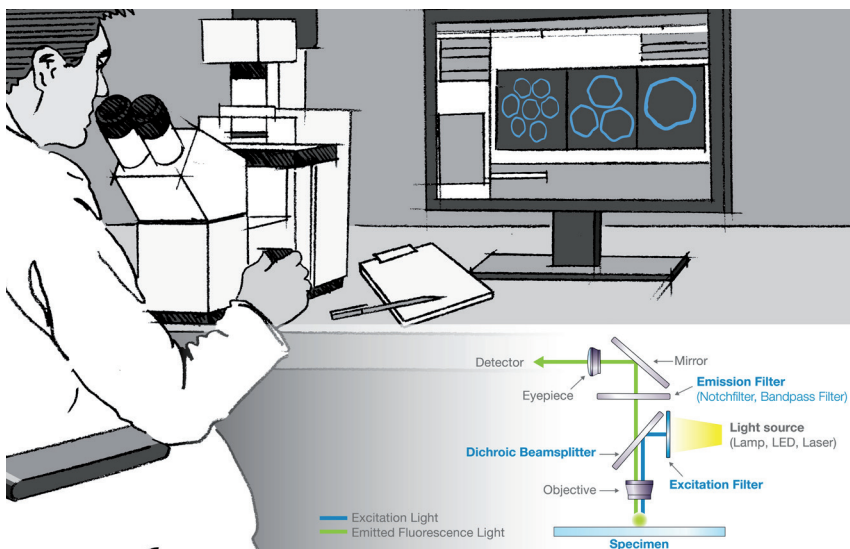
#### Surface defects

5 / 3 x 0.16

#### Environmental stability

Temperature -40 °C to +300 °C

Humidity up to 99 %



### All-dielectric bandpassfilter for the VIS range with OD5 blocking

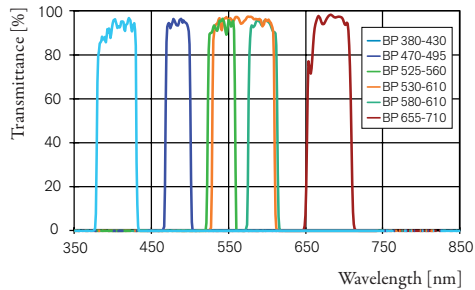


Fig. 1: Measured spectral transmittance, passband

### All-dielectric bandpassfilter for the VIS range with OD5 blocking

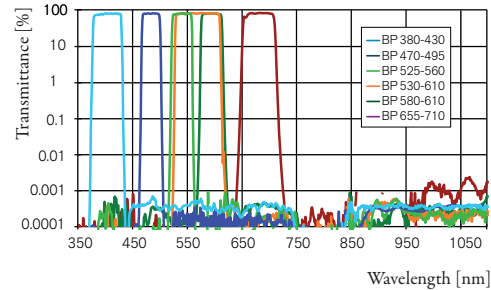


Fig. 2: Measured spectral transmittance, blockband

### Shortpass 400 nm with OD5 blocking

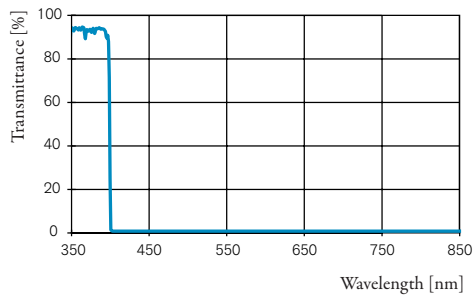


Fig. 3: Measured spectral transmittance

### Multi-Bandpass 420 – 475 / 500 – 610 nm

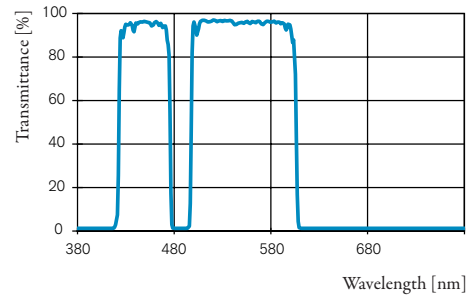


Fig. 4: Measured spectral transmittance,  
OD 5 blocking for 350–410, 488, 630–800 nm