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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

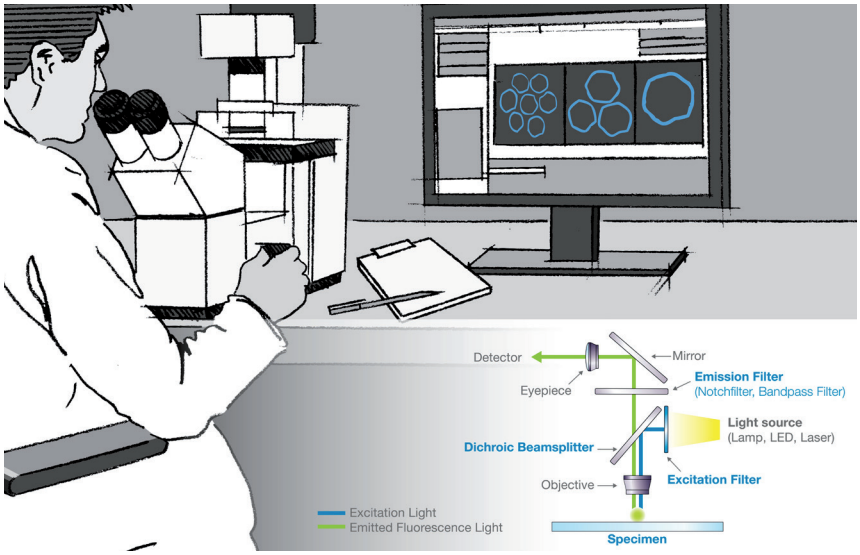
- Sharp separation between blockband and passband
- High transmittance > 90 % outside the blockband
- Long-term shift-free spectral performance
- High environmental stability
- Wide flexibility in filter size

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 %	



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All-dielectric bandpassfilter for the VIS range with OD5 blocking

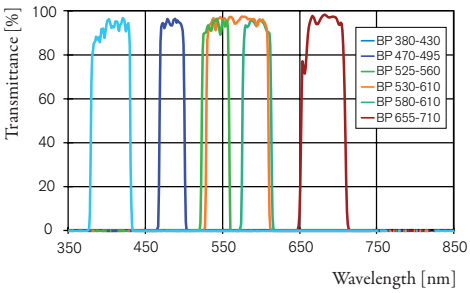

Fig.1: Measured spectral transmittance, passband

All-dielectric bandpassfilter for the VIS range with OD5 blocking

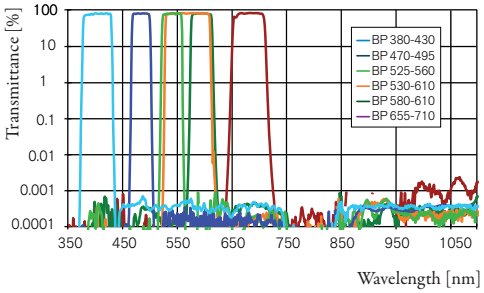

Fig.2: Measured spectral transmittance, blockband

Shortpass 400 nm with OD5 blocking

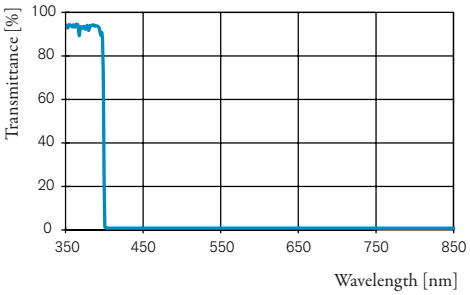

Fig. 3: Measured spectral transmittance

Multi-Bandpass 420 – 475 / 500 – 610 nm

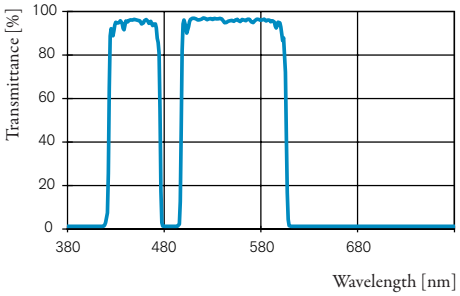

Fig. 4: Measured spectral transmittance,
OD 5 blocking for 350–410, 488, 630–800 nm

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