

# SWIR Bandpass Filters

## Self-blocking SWIR Bandpass Filters for Spectral Sensing and Imaging

Materion Balzers Optics SWIR bandpass filters stand out by their unique self-blocking filter design, combining wide blocking and high passband transmittance in a single all-dielectric interference coating. All filters are deposited by plasma-assisted processes and show extreme stability in terrestrial and space environments. They can be completed with our broad band dichroic beamsplitters.



### Benefits

- Self-blocking filter design with blocking range over full detector response
- High transmittance in passband
- Long-term shift-free spectral performance
- Excellent environmental stability

### Applications

- Spectral sensing and imaging with InGaAs or HgCdTe (MCT) detectors
- NIR Raman spectroscopy
- Plasma diagnostics and Emission spectroscopy
- Fiber Optics Transmission measurements
- Global remote sensing
- Atmospheric greenhouse gas monitoring

### Technical Data

#### Passband wavelength

Custom-made

#### Blocking

1100 to 2100 (2700) nm, OD3 or better  
(depending on requirements)

#### Transmittance

> 85% outside blockband

#### Angle of Incidence

Standard 0°, different AOI on request

#### Substrate Material

Fused silica, BK7 or BK7G18 (radiation resistant)

#### Dimensions

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

#### Parallelism

< 3 arcmin

#### Surface Defects

5/3 x 0.16

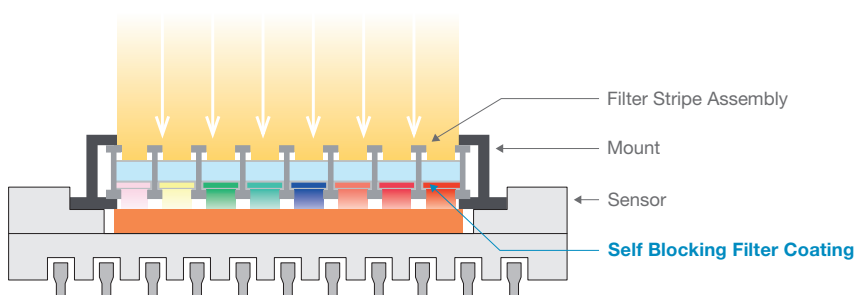
#### Environmental Stability

Temperature -100 °C to +300°C

Gamma and proton radiation

Elevated humidity

Hard, all-dielectric coatings



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### All-dielectric self blocking SWIR bandpass filters

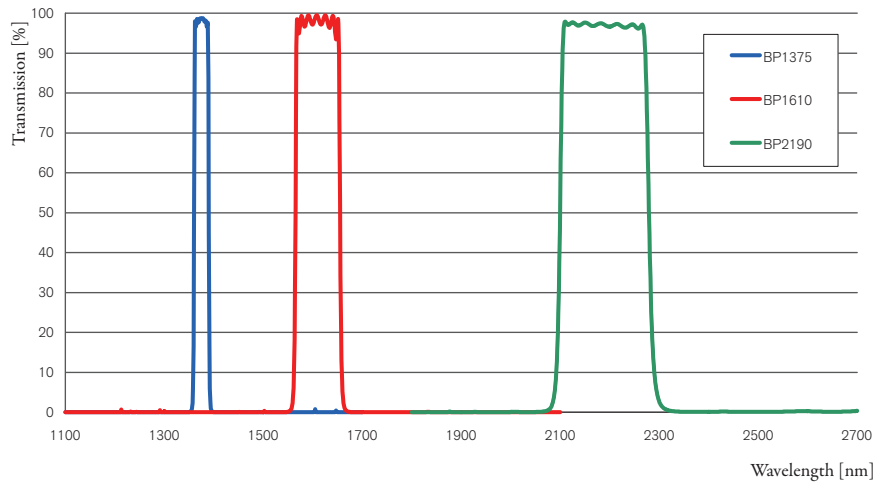


Fig. 1: Design spectral transmittance, passband

### Spectral response

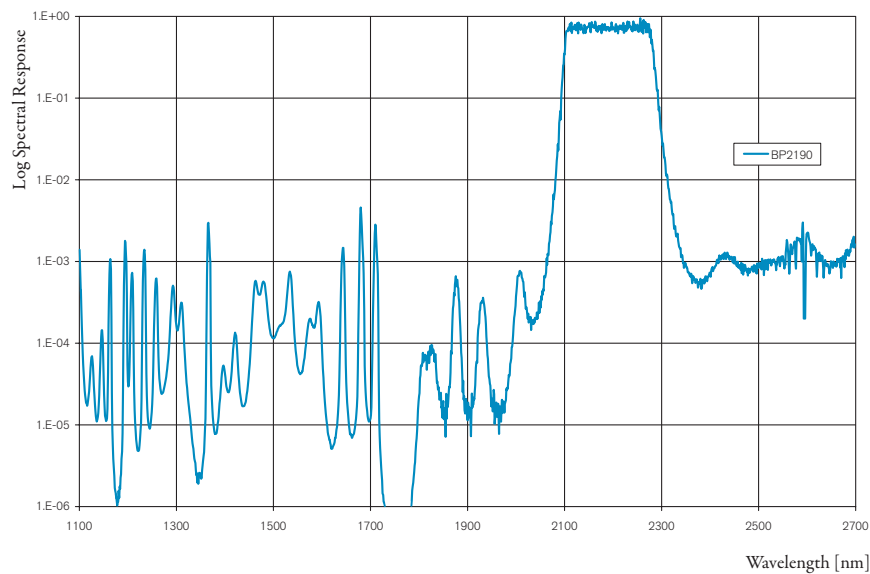
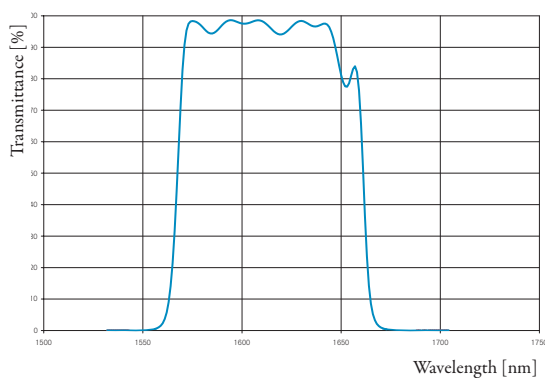


Fig. 2: Measured log spectral response (integrated blocking band response 0.42%)

### SWIR bandpass 1610 nm



### SWIR bandpass 2190 nm

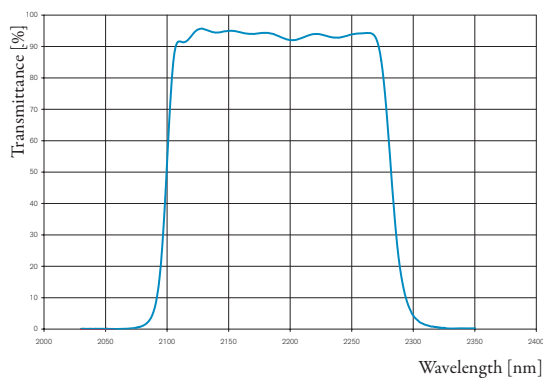


Fig. 3: Measured spectral characteristics of BP1610 and BP2190, measured CWL 1611.1 and 2190.9nm (expected design CWL 1610/2190nm)

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