MATERION
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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

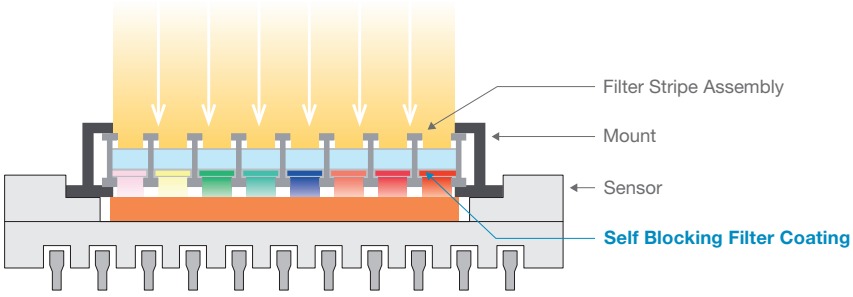
- Self-blocking filter design with blocking range over full detector response
- High transmittance in passband
- Long-term shift-free spectral performance
- Excellent environmental stability

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

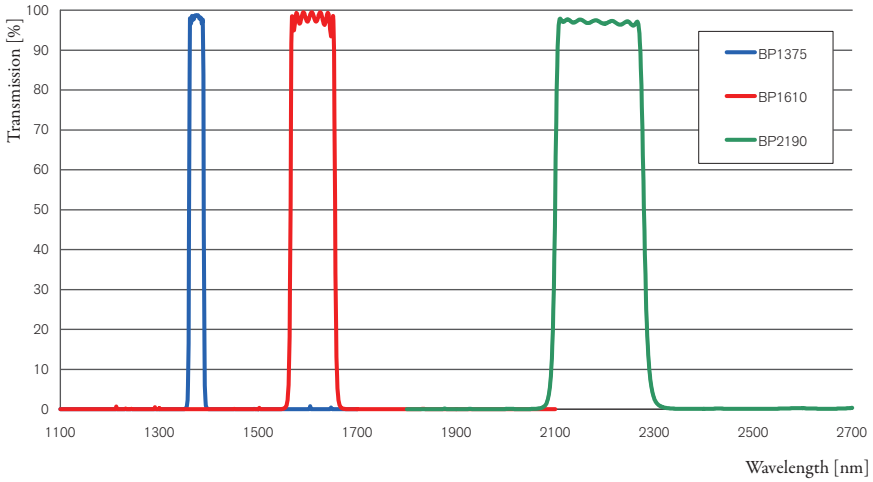


Fig. 1:
Design spectral trans-
mittance,
passband

Spectral response

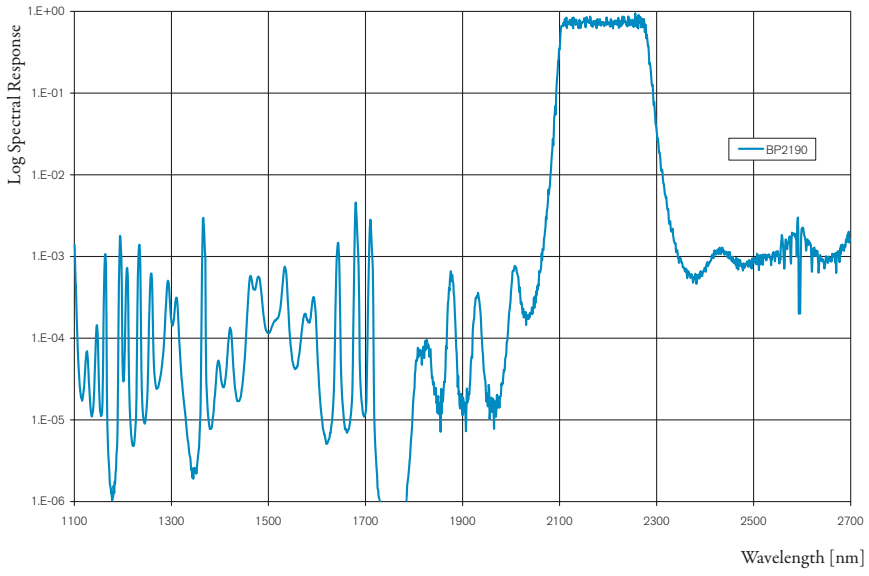
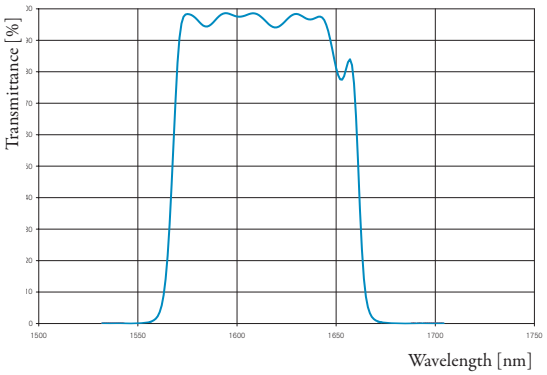


Fig. 2:
Measured log spectral
response (inte-grated
blocking band response
0.42%)

SWIR bandpass 1610 nm



SWIR bandpass 2190 nm

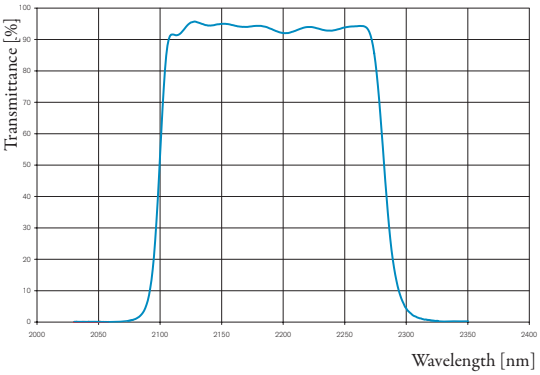


Fig. 3:
Measured spectral characteristics of BP1610 and BP2190, measured CWL 1611.1 and 2190.9nm
(expected design CWL 1610/2190nm)

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