OMEGA OPTICAL | OMEGA OPTICAL HOLDINGS

LASER COMPONENTS®

Athermal NIR Narrow Bandpass Filters

Technical Data Sheet

ISO 9001:2008 Certified • SBA Registered Small Business • ITAR Registered • Made in the USA

Key Features:

- Spectral stability over temperature range of -60 to +80° C
- Multi-cavity designs for flat transmission peak and sharp transition to deep blocking
- >OD 4 from 1 to 2.5 µm
- Broad off-band rejection
- Narrow bandwidths from 1 to 5nm
- Reduced spectral shift with AOI
- Standard wavelengths for common laser lines and C-band optical communication channels
- Custom wavelengths available
- Custom sizes available
- High physical durability
- Inspection to Mil Spec, including temperature influence and shock
- Spectral characterization over angle and temperature

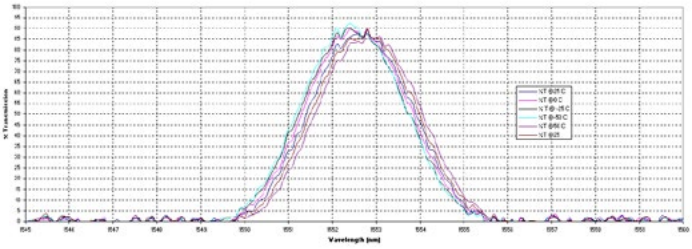
Applications:

- Lidar
- Freespace Optical Communications
- Laser Cleanup
- Range-Finding
- Autonomous Vehicle Applications
- Remote Sensing
- Chemical/Gas Sensing

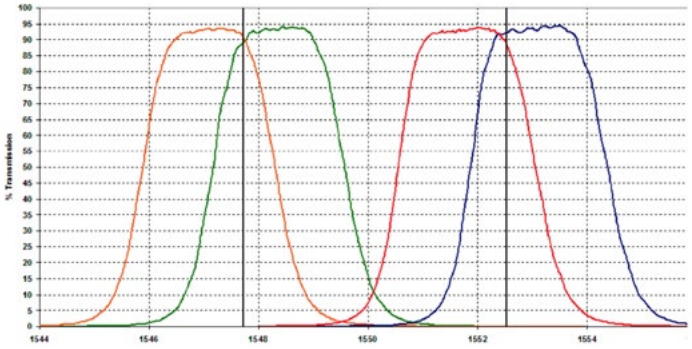
Responding to increased demand for near-infrared narrowbands that exhibit low thermal shift, Omega is pleased to announce our latest 4-cavity Fabry-Perot narrowband filters for demanding LIDAR and optical communications applications. These filters are fabricated from hard oxide materials and matched to the substrate to create their high thermal stability. The design also reduces angle sensitivity, providing improved off-angle performance.

Steep edge slopes allow these narrowbands to reject ambient light as well as adjacent laser lines, a requirement for freespace optical communication in the dense C-band channels.

Please contact us to request a quote for your specifications.



Measured transmission of a NIR narrowband filter is presented for different temperatures: +50, +25, 0, -25, and -50° C.



Filter transmission measured at 0° and 5° angle of incidence (AOI) using a scanning wavelength laser. The black lines locate the target C-band laser lines ITU 31 (1547.7 nm) and ITU 37 (1552.3nm).

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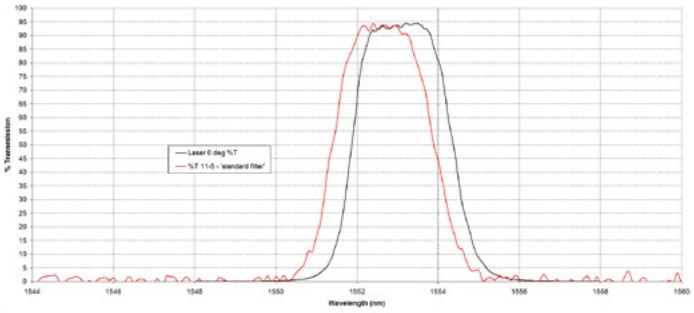
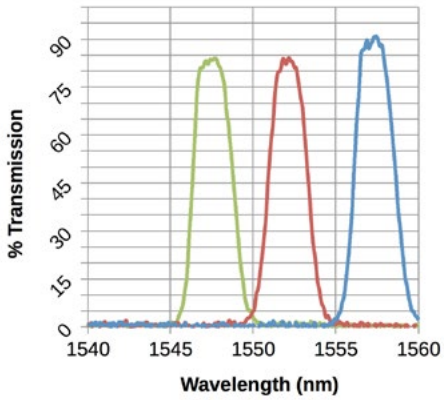
Laser measured transmission for two laser line bandpass filters at 0° and 5° AOI presented on a logarithmic scale to emphasize optical density. The black lines are the C-band laser lines ITU 31 and 37.

Overlay of laser and Cary measurement. The scanning laser measurement is taken as the more 'correct' result. The Cary has an offset due to the F# of spectrometer (F11). While these data sets agree well, except for an offset in center wavelength, the Cary measurement typically exhibits a wider bandwidth and less sharp edge slopes.





Three-line bandpass filter set for laser isolation in the ITU C-Band.

ITU C-Band Laser Bandpass Filter Sets

- The ITU C-Band or erbium window covers the spectral range of 1530 to 1565 nm.
- The ITU Grid places 100 laser channels across this band.
- Omega Optical can provide laser isolation band pass filters at any of these wavelengths.

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