



# ULTRA-NARROWBAND (<1 NM) FILTERS

CELEBRATING 50 YEARS ISO 9001:2008 CERTIFIED • SBA REGISTERED SMALL BUSINESS • ITAR REGISTERED • MADE IN THE USA



## KEY FEATURES:

- Sub-nanometer bandpass filters for UV, visible, and NIR wavelengths
- High transmission
- Multicavity designs available for steeper edge slopes
- Custom wavelengths
- Custom sizes
- High physical durability

## APPLICATIONS:

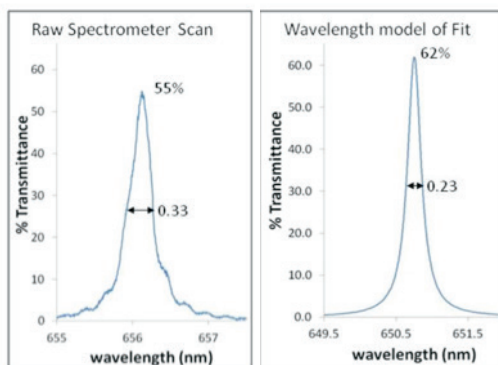
- Astronomy
- Laser Cleanup
- LIDAR
- Free-space Optical Communications
- Range-finding
- Remote sensing

Omega has a long history of producing ultra-narrow bandwidth filters, starting with the Hydrogen alpha (656.28 nm) filters over 40 years ago. Improvements in production methods which enable multi-cavity designs have allowed us to push to steeper edges and into the near-infrared wavelengths.

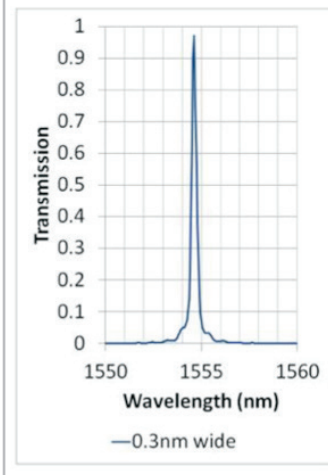
Testing of these very steep and narrow filters is a challenge- we have used a combination of standard spectrometers, tunable lasers and laser angle rocking to characterize the performance.

### Hydrogen alpha filters

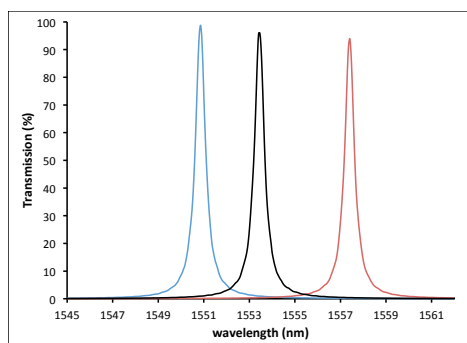
Shown below as measured (left) and modeled (right).



### Ultra-narrow NIR filters



### ITU- C-Band Laser Bandpass filters



- Used in optical communications, the ITU C-band covers the spectral range of 1530 to 1565 nm.
- The ITU grid places 100 laser channels across this band.
- At left are filters at C-band laser lines ITU 29, 32 and 37.