

# TECHNICAL NOTE

## Edge Filters vs. Notch Filters for Raman Instrumentation

### RazorEdge® Filter Advantages:

- Steepest possible edge for looking at the smallest Stokes shifts
- Largest blocking of the laser line for maximum laser rejection

### StopLine® Notch Filter Advantages:

- Measure Stokes and Anti-Stokes signals simultaneously
- Greater angle-tunability and bandwidth for use with variable laser lines

The graph below left illustrates the ability of a long-wave-pass (LWP) filter to get extremely close to the laser line. The graph in the center compares the steepness of an edge filter to that of a notch filter. A steeper edge means a narrower transition width from the laser line to the high-transmission region of the filter. With transition widths guaranteed to be below 1% of the laser wavelength (on Semrock U-grade edge filters), these filters don't need to be angle-tuned!

The graph on the right shows the relative tuning ranges that can be achieved for edge filters and notch filters. Semrock edge filters can be tuned up to 0.3% of the laser wavelength. The filters shift toward shorter wavelengths as the angle of incidence is increased from 0° to about 8°. Semrock notch filters can be tuned up to 1.0% of the laser wavelength. These filters also shift toward shorter wavelengths as the angle of incidence is increased from 0° up to about 14°.

