

Interference Filters



Features

- 80% peak transmission
- Non-hydroscopic
- Wide bandwidth

Technical Specifications

Transmission at Laser Line (%)	80, minimum (85, typical)
Out of Band Transmission (%)	0.001 (50 db attenuation)
Spectral Range	X-Ray to 1150 nm
Effective Index	2.1
Operating Temperature	-20°C to +80°C (-4°F to +176°F)
Humidity Resistance	Minimum 40 Cycles (MIL-STD-810E) Method 507 Procedure 1
Dimension (mm)	25.4 (24.4 mm without ring)
Useable Aperture (mm)	23 ±0.4
Thickness (mm)	4 ±0.25 (3 mm without ring)
Available Band Pass (at FWHM)	20 nm (0 to 15° angle of incidence) 40 nm (0 to 25° angle of incidence) 70 nm (0 to 35° angle of incidence)
Available Center Wavelengths (nm)	532, 635, 660, 670, 680, 685, 780, 810, 830
Bandwidth Tolerances (nm)	20 ±2 40 ±8 70 ±14
Center Wavelength Tolerances (dependent on bandwidth)	+2/-2 +5/-5 +10/-10

Superior Reliability & Performance

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Angle of Incidence and Blue Shifting

The center wavelength of the filter will shift toward shorter (blue) wavelengths as the angle of incidence increases; the greater the angle the greater the shift (see % shift vs. angle of incidence graph). This is known as blue shifting. The amount of blue shift may be calculated using the following formula:

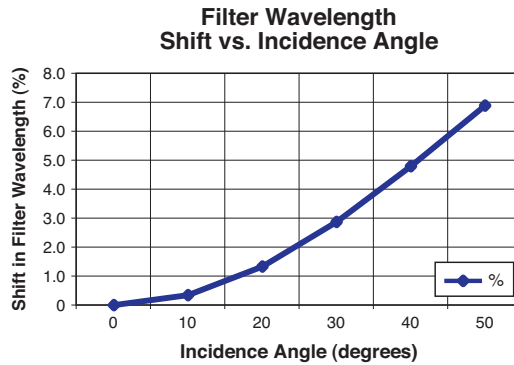
$$\lambda_1 = \lambda_0 (1 - \sin^2\theta/n^2)^{1/2}$$

where θ = angle of incidence

λ_1 = resulting wavelength at angle θ

λ_0 = central wavelength at normal incidence

n = effective index of the filter



Laser Diode Tolerances

Another aspect to take into account when selecting a filter is laser diode tolerances. Diodes typically have a wavelength tolerance of ± 10 nm; this wavelength (measured at room temperature) will increase with temperature increases and decrease with temperature decreases at a rate of 0.25 nm/ $^{\circ}$ C.

Ordering Information

To order a filter, choose the center wavelength and bandwidth from the Specifications on page 1. The order code is:

<center wavelength> CW - <band pass> BP - 25.4-80%

For example: 635CW-20BP-25.4-80%

Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all interference filters. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.



**Coherent, Inc.,
Corporate Headquarters**
5100 Patrick Henry Drive
Santa Clara, CA 95054

Coherent Salem
32 Hampshire Road
Salem, NH 03079
phone (603) 685-0907
fax (603) 893-5604
e-mail fiber@Coherent.com

Benelux +31 (30) 280 6060
China +86 (10) 6280 0209
France +33 (0)1 6985 5145
Germany +49 (6071) 968 333
Italy +39 (02) 34 530 214
Japan +81 (3) 5635 8700
Korea +82 (2) 460 7900
UK +44 (1353) 658 833