

# WDM Filter

## WDM Filter for 5G

Materion Precision Coatings has developed a wavelength-division multiplexing (WDM) filters for optical multiplexer module utilized in modern telecommunication equipment. Integrated into the optical multiplexer module, the filters are designed to provide you the high steepness of transmittance slopes in the transition zones between passband and stopband for near infrared wavelength. Our WDM filters are increasing overall transmission as well minimizing the temperature shift. It is flexible for spectrum design for various infrared wavelengths.



### Benefits

- High transmission and low insertion loss
- Optimized spectral performance
- Steep cut-on/cut-off slopes
- Low temperature shift
- Excellent environment stability
- Compact size
- Cost effective solution for telecom optical module
- Customized designs possible

### Applications

WDM filters provide high transmission for various infrared laser beam signal. Filters can be:

- Integrated in optical multiplexer module
- Placed in the optical path in WDM-Transceivers

### Technical Data

**Spectral specifications** It can be customized according to the incident angle, bandwidth and insertion loss specified by the requirements. Generally, the insertion loss of passband can be less than 0.25dB at 0° incidence

**Central Wavelength ( $\lambda_c$ ):** 1271nm,1291nm,1311nm, 1331nm,1351nm,1371nm

**Wavelength range:** 1250 - 1620nm or other wavelength

**Pass band:** Bandwidth between -0.3dB  $\geq$  14nm or other requirements

**Stop band:** Bandwidth between -30dB  $\leq$  26nm or other requirements

**Thermal Wavelength Drift:**  $\leq$ 4 pm/°C

**Operating Temperature:** -40°C ~ 85°C

**Substrate:** WMS-15 or equivalent

**Size:** 1.0x1.0x1.0mm or other size

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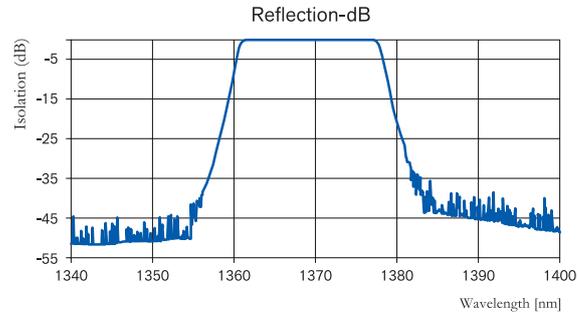
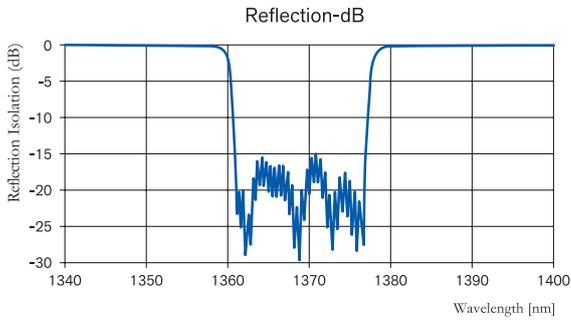
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Central wavelength( $\lambda_c$ )	1271nm, 1291nm, 1311nm, 1331nm, 1351nm, 1371nm
Bandwidth @-0.3dB (=93.3%)	$\geq 15\text{nm}$
Bandwidth @-30dB (=0.1%)	$\leq 25\text{nm}$
Pass Band width @-0.3dB	$(\lambda_c-7) - (\lambda_c+7)$
Stop Band Width @-30dB	$1260-(\lambda_c-3) \text{ \& } (\lambda_c+13)-1460$
Max IL within Pass Band	$\leq 0.25\text{dB}$ (=94.4%)
Max Reflection IL within Stop Band	$\leq 0.2\text{dB}$
Ripple within stop Band	$\leq 0.1\text{dB}$
Ripple within Pass Band	$\leq 0.25\text{dB}$ (=94.4%)
Reflection Isolation	$\geq 13\text{dB}$ (=5%)
Polarization Dependent Loss within	$\leq 0.05\text{dB}$
Thermal Wavelength Drift	$\leq 5 \text{ pm}/^\circ\text{C}$
Operating Temperature	$-20^\circ\text{C} \sim 85^\circ\text{C}$
AOI	$1.8^\circ$

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