

Ultra-Narrow Band-Pass Filter Module

IXC-FBG-PS-M

This all fiber-based filter provides a clean extraction of narrow-band signal, Full Width Half Maximum (FWHM) could be selected at time of order from 1 to 4 GHz. Filter shape exhibits a flat-top shape in order to preserve signal integrity, steep edges and a high crosstalk over the full C or L band to remove all unwanted signals and noises.

The all fiber design with no moving part ensures long time reliability. Fiber Bragg Gratings used in the module are thermally packaged in order to get a very stable central wavelength against lab temperature variations.

Fine tuning of the central wavelength by user is available through fine tuning screw.

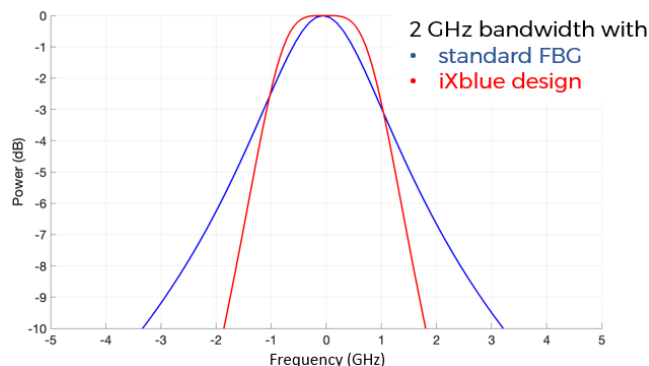
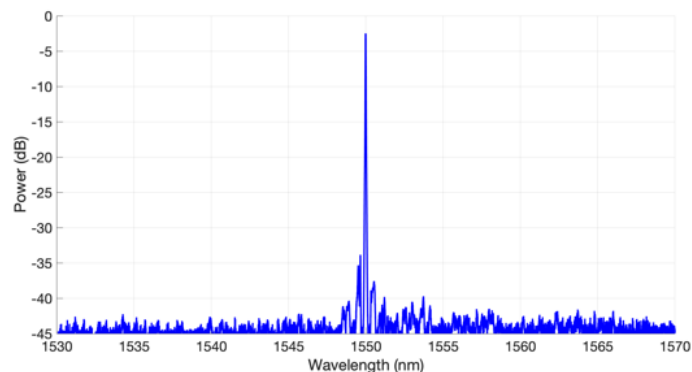


FEATURES & BENEFITS

- Flat-top symmetrical pass-band filter
- Down to 1 GHz (8 pm) FWHM
- < 4 dB Insertion Loss
- > 25 dB Optical Rejection Ratio @ 10 GHz
- PM or SMF
- +/- 100 pm fine tuning

APPLICATIONS

- Microwave photonics
- Quantum communication
- Space communication
- Lidar
- Lines filtering for lasers and sensors
- RF filtering
- ASE or laser mode suppression
- Linewidth reduction
- Frequency discriminator



Typical response (IN OUT)

Flat-top symmetrical band-pass design with an improved Q-factor, leading to better selectivity and higher signal-to-noise ratio.

IXC-FBG-PS-M TECHNICAL SPECIFICATIONS

Parameters

Band-pass center wavelength \underline{CW}^*	1525 ... 1610 (TBD) nm
Band-pass bandwidth \underline{B} (FWHM)	1, 2, 3 or 4 (TBD) \pm 0.5 GHz
Insertion loss IL	< 4 dB
Out-of-band attenuation ΔT at ± 10 GHz	> 25 dB
Rejection Bandwidth (IN -> OUT)	> 25
Tuning range	\pm 100 pm
Tuning resolution	1 GHz
CW thermal drift [- 5 : 70] $^{\circ}$ C	< 150 pm
Packaging	165 x 55 x 15 mm
Input power (max.)	300 mW
Pigtail length	0.5 m
Optical connectors \underline{CC}	FC/APC, FC/PC, SC/PC, SC/APC (0.9 mm buffered fiber)

* Referenced to vacuum at +/- 0.05nm, slow axis (PM Fiber)

Specifications are subject to change without notice

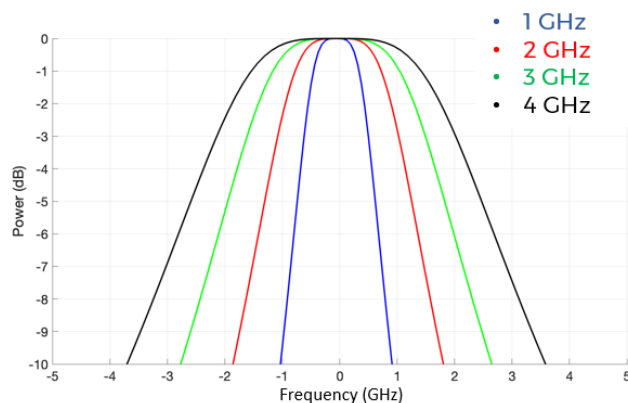
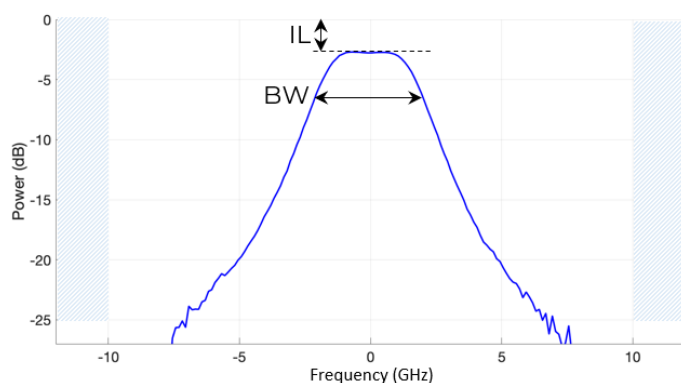
IXC-FBG-PS-M-CW-B-FT-CC ORDERING GUIDE

\underline{CW} : wavelength between 1525 and 1610

\underline{B} : filter bandwidth in GHz. Available: 1, 2, 3 and 4

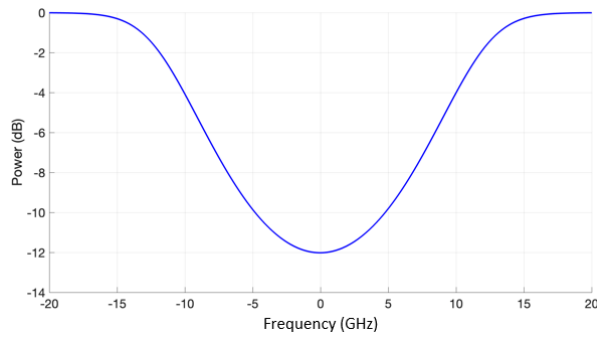
\underline{FT} : Fiber Type. Selection between PM (PM1550) and SM (SMF28)

\underline{CC} : Optical Connector. Available: FA (FC/APC); FP (FC/PC); SA (S/APC) and SP (SC/PC)



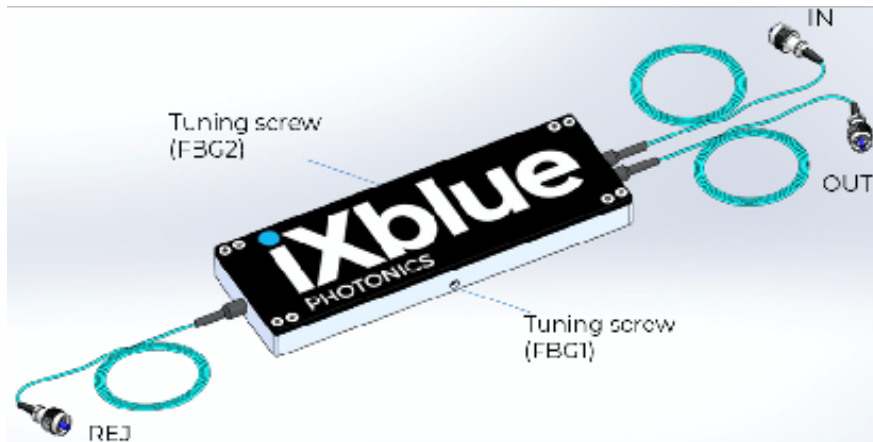
Typical response (IN OUT)

This filter allows transmission of a specific narrow band while rerouting other wavelengths in C or L-band.
Several bandwidths are available ranging from 1 to 4 GHz.



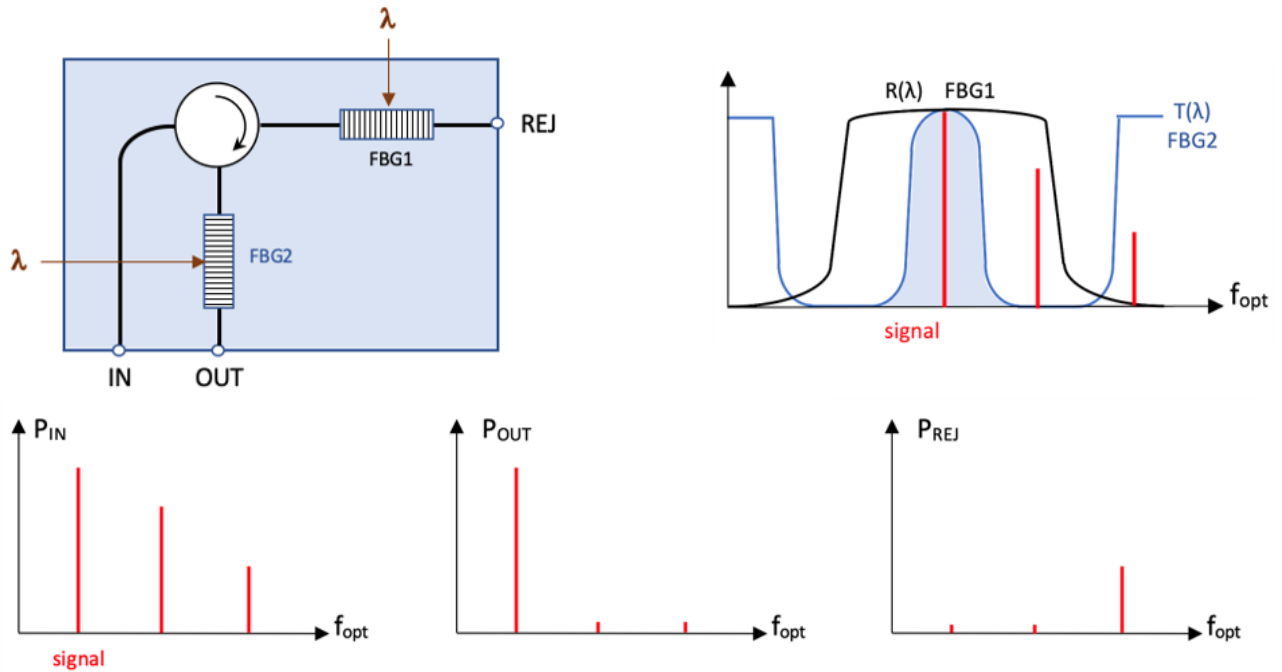
Typical response (IN REJ)

PACKAGING



Passive 3-port module with tuning screws

CONFIGURATION



Optical filter based on 2 athermal FBGs and a circulator