

OF High-Precision Optical Filter



The OF High-Precision Optical Filters are made of state-of-the-art fiber Bragg gratings (FBGs). They are offered in different options, including TeraXion's best-in-class athermal package.

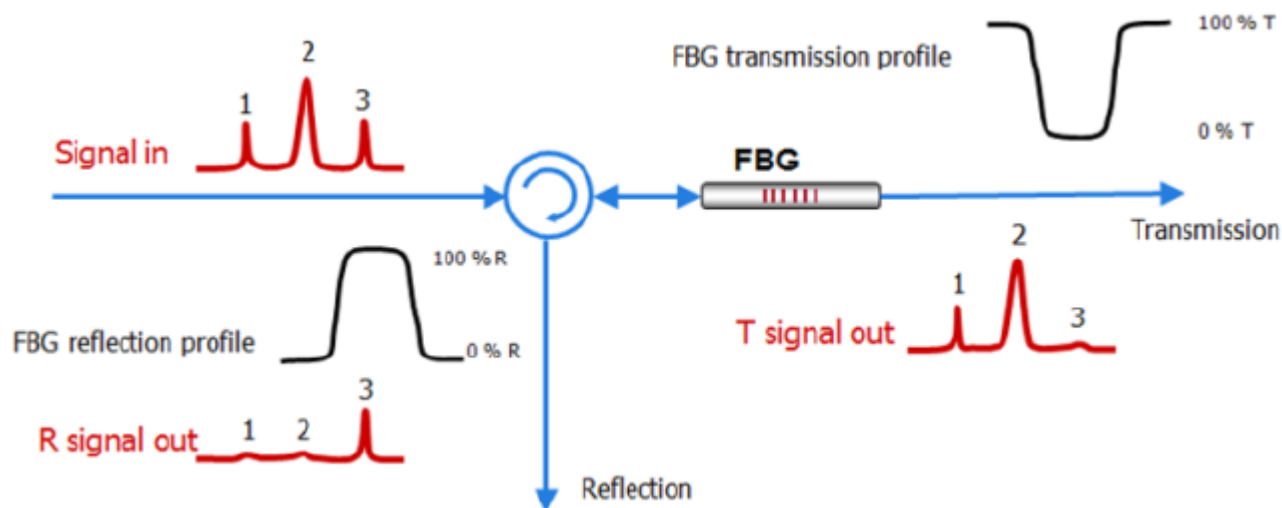
TeraXion's optical filters can be centered from 780 nm up to 2100 nm. They can also be shaped with a bandwidth (BW) as low as 2 GHz (0.016 nm) up to thousands of GHz.

Thanks to its proven simulation modelling, manufacturing processes, and athermal packaging expertise backed by 20 years delivering high-precision FBG components, TeraXion provides optical filters that can meet a wide set of demanding requirements.

Top 6 Features

- **Outstanding central wavelength accuracy:** < 50 pm absolute accuracy.
- **High stability:** < 0.5 pm / °C drift when integrated within TeraXion's best-in-class athermal package.
- **Flat top & steep edge shapes:** > 20 dB drop over 4 GHz for steep edge models, tailored for challenging signal isolation needs.
- **Low dispersion models:** < 5 ps peak-to-peak group delay, ideal for picosecond laser spectral filtering.
- **High reflectivity & high optical isolation:** Up to 99.9% reflectivity combined with typical > 35 dB mean out-of-band isolation, provides remarkable signal-to-noise ratio (SNR) enhancement.
- **Narrow to wide bandwidth (BW):** As low as 2 GHz (0.016 nm) up to thousands of GHz.

Fiber Bragg Grating (FBG) Filtering Profile



Optical Specifications

Parameters	Values	Units
Center wavelength at 25° C (referenced to vacuum)	780 - 2100	nm
Center wavelength accuracy ⁽¹⁾⁽²⁾	< 50	pm
Center wavelength stability (athermal package)	< 0.5	pm / °C
Reflection bandwidth (BW) ⁽²⁾	2 - thousands 0.015 - tens	GHz nm
Reflectivity ⁽³⁾	Up to 99.9	%
Mean out-of-band isolation ⁽⁴⁾	Typ. > 35	dB
Power handling	Up to 1	W
Fiber type	PM or non-PM	
Polarization extinction ratio (PER) ⁽⁵⁾	> 20	dB

(1) < 150 pm when using PM fiber in athermal package

(2) Maximum wavelength accuracy and minimum BW are available between 1020 - 1070 nm & between 1520 - 1620 nm

(3) Maximum measurable reflectivity may be limited by BW and fiber type

(4) Equivalent to the metrology and test noise floor, higher isolation by design

(5) Lower PER for athermal packages

Packaging/Mechanical Specifications

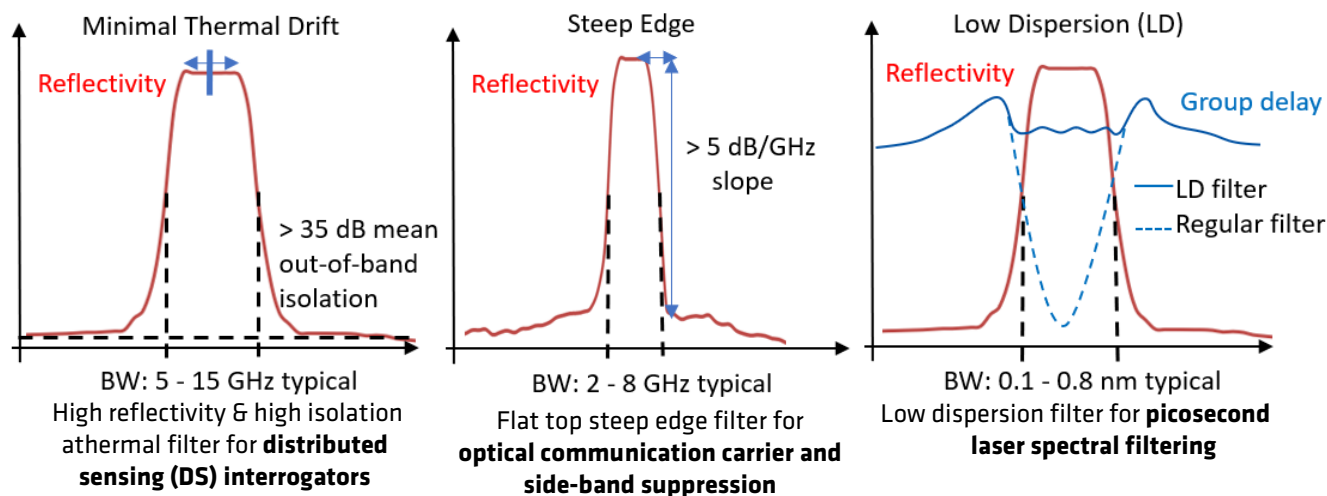
Parameters	Values	Units
Package options	Bare - Recoat - Athermal	-
Tube dimensions (Φ x l): Short athermal package option	4.8 x 75	mm
Tube dimensions (Φ x l): Long athermal package option	6.3 x 195	mm
Pigtail length options	0.5 - 1 - 1.5	m
Connectors	Various options	-
RoHS-compliant ⁽¹⁾	Yes	-

(1) Long athermal package

Optional Features

Features	Parameters	Values	Units
Steep edge model	Transition slope	> 20	dB over 4 GHz
Low dispersion model	Peak to peak group delay (GD)	< 5	ps

Filter Profile Examples by Application



TeraXion
An indie Semiconductor Company

© 2021 TeraXion Inc. All rights reserved.

TeraXion Inc. reserves all of its rights to make additions, modifications, improvements, withdrawals and/or changes to its product lines and/or product characteristics at any time and without prior notice. Although every effort is made to ensure the accuracy of the information provided on this information sheet, TeraXion Inc. does not guarantee its exactness and cannot be held liable for inaccuracies or omissions.

teraxion.com
2716 Einstein Street
Quebec, Quebec, CANADA G1P 4S8
+1 (877) 658-8372 / info@teraxion.com