



flawless fusion with infinite possibilities

SIFAM
F I B R E O P T I C S

Dispersion Compensating FBGs



SIFAM Dispersion-Compensating FBGs have class-leading performance derived from sophisticated design techniques and advanced manufacturing technologies. Inherently linear dispersion characteristics, low group delay ripple and accurate dispersion matching give excellent performance for both 10Gb/s and 40Gb/s data.

Proprietary laser-welded athermal package technology ensures high wavelength stability over temperature and life, and is fully compliant with Telcordia GR-1209 and GR 1221.

SIFAM DCGs are available both in 10G versions with a large available dispersion range, and 40G versions that support wide channel bandwidths with minimised group delay ripple and maximum dispersion linearity.

SIFAM can incorporate Dispersion-Compensating FBGs into modules for single channel or multiple channel dispersion compensation.

Key Features:

- Cost-effective Sonet/SDH channel upgrade
- Accurate dispersion compensation for 40G
- Low insertion loss
- Low ripple & system penalty
- Flexible design & fast delivery
- Stable, compact packaging
- Telcordia compliant design
- ISO 9001 registered facility

Applications:

- Dispersion compensation of:
 - 10G WDM/DWDM and Sonet/SDH channels
 - 40G channels

Compliance:

- Telcordia GR-1209
- Telcordia GR-1221

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As part of our policy of continuous product improvement we reserve the right to change specifications at any time

Optical Specifications

Parameters ₁	10 Gb/s	40 Gb/s	Unit
Channel Bandwidth	±25	±40	GHz
Channel Wavelength Range	1525 -1565 (1565 - 1610 available on request)		nm
Minimum Channel Spacing	100	200	GHz
Insertion Loss	< 1		dB
Insertion Loss Ripple	< 0.5		dB
Dispersion Range	±300 to ±1700	±300 to ±1200	ps/nm
Dispersion Tolerance	< ±4	< ±2	%
Dispersion Slope	0-900 ps/nm 0-1200 ps/nm	N/A N/A	ps/nm ²
Raw Group Delay Ripple (p-p) ₂	< 30	< 20	ps
Filtered Group Delay Ripple (p-p) ₃	< 10	< 6	ps
Polarisation Dependent Loss	< 0.1		dB
Polarisation Mode Dispersion	< 0.7	< 0.5	ps
Maximum CW Input Power	27		dBm

1. All specifications met over defined channel bandwidth over specified operating temperature and all states of polarisation
2. Raw GDR measured with 300 MHz RF modulated laser and 3 pm resolution
3. GDR filter width: 10G- 25 pm; 40G- 100 pm

Environmental Specifications

Parameter	Specification	Unit
Operating Temperature Range	-5 to +70	°C
Storage Temperature Range	-40 to +85	°C
Relative Humidity	5 to 85	%RH
Environmental Qualification	Telcordia GR-1209 & GR-1221	

Housing Options

Parameter	Specification	Unit
Fibre Type	Corning SMF-28	
Pigtail Length	> 1	m
Device Format	Packaged Unpackaged	Athermal Recoated or Uncoated ₄
Athermal Package Dimensions	OD Length	5.9 180
Proof Test Level (Unpackaged)	100	kpsi

4. Centre wavelength accuracy for unpackaged devices: ± 0.2nm

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Indicative Performance Figures

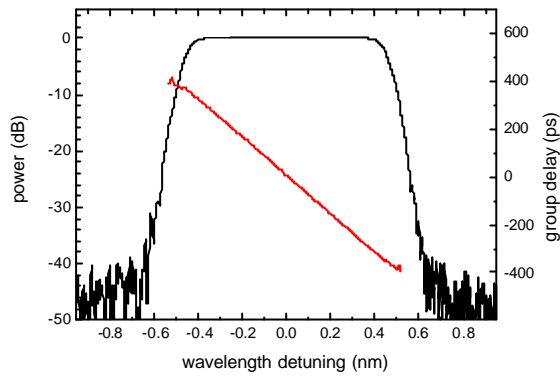


Fig. 1: Reflectivity and group delay

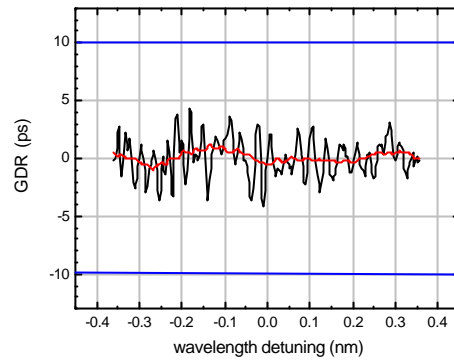


Fig. 2: Raw and filtered group delay ripple

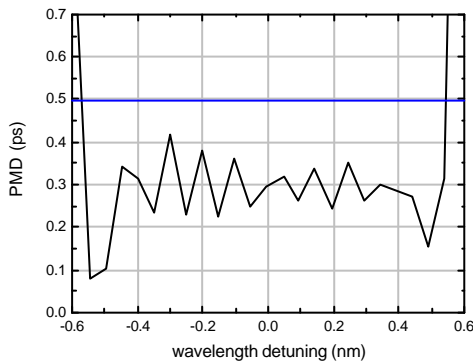


Fig. 3: Polarisation mode dispersion

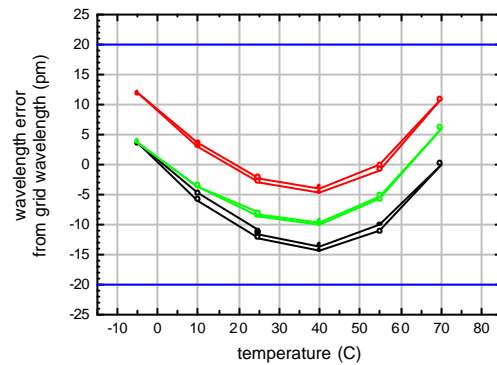
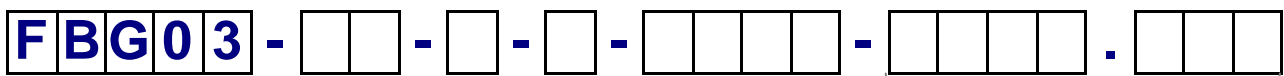


Fig. 4: Absolute centre wavelength accuracy over temperature (for three DCGs)

Ordering Code Information



Code	System bit rate	Code	Device format	Code	Dispersion sign	Dispersion (ps/nm)	Channel wavelength (nm)
10	10 Gb/s	P	Athermal package	P	Positive		
40	40 Gb/s	R	Recoated	N	Negative		
		U	Uncoated				

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