

Preliminary

- **Ultra-low group delay ripple**
- **Very low insertion loss**
- **Single or multi-channel gratings**
- **Recoated/bare fiber or athermally packaged**
- **Wide range of dispersion values from 200 to 2000ps/nm**

Dispersion Compensating Gratings

With the number of channels increasing in the C and L bands, and data rates exceeding 10 Gbps, chromatic dispersion has become a critical problem for optical networks. Current techniques for managing dispersion are ineffective, suffer from high losses and fiber non-linearities, and are too bulky.

SPI has overcome these challenges with a breakthrough chirped FBG design, that matches the dispersion slope of any fiber type to within 99% accuracy per channel or over a group of channels. In addition, these dispersion compensation gratings (DCGs) have extremely low insertion loss of <1.5 dB, very low group delay ripple and can handle high optical powers. The slope compensation and low group delay ripple means error-free transmission at bit rates up to 40 Gbps.

Applications

- **Single-channel and multi-channel compensation for 10 and 40 Gbps systems**
- **Gratings can be stretched or thermally tuned for Tunable DCMs**
- **Integrated onto transponder boards for low-cost metro applications**

Compliance

- **Telcordia GR-1221 and GR-1209**

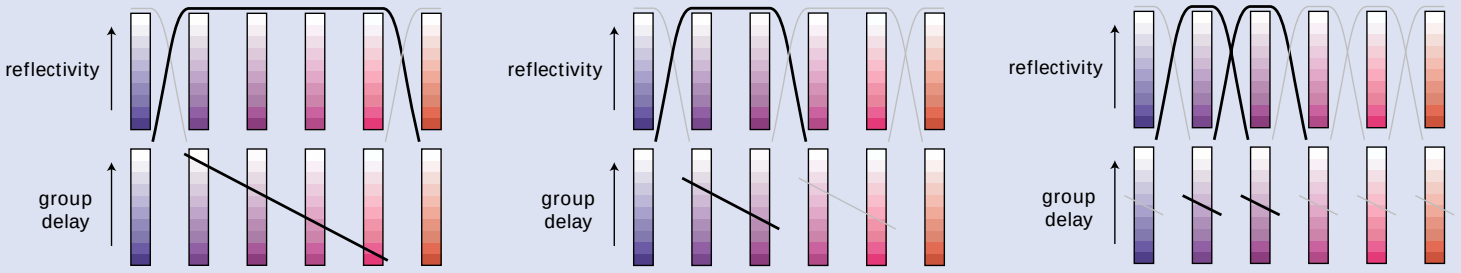
© Copyright 2002
BACK TO CONTENTS

BragNet™

Dispersion Compensating Gratings

Southampton Photonics

4 channels	2 channels	2 x 1 channel



Specifications

Parameter	Value
Channel spacing	100 GHz
Channel bandwidth	0.25nm
No of channels per DCG	see Dispersion Matrix
Dispersion	see Dispersion Matrix
Center wavelength	100 GHz (ITU grid)
Wavelength range	C & L Band
Insertion loss for reflected channels	< 1.5 dB
Ripple in reflection over channel bandwidth	< 0.5 dB
PDL	< 0.1 dB
PMD	< 0.8 ps
Operating temperature	-5 to 70ºC
Storage temperature	-40 to 85ºC

Dispersion Matrix

Distance in SMF (Km)	Dispersion ps/nm	No of Channels
20	-340	1 x 4
30	-510	1 x 2
40	-680	1 x 2
50	-850	2 x 1
60	-1020	2 x 1
70	-1190	2 x 1
80	-1360	2 x 1
90	-1530	2 x 1
100	-1700	2 x 1

Dimensions - 6.5 mm x 180 mm

Southampton Photonics, Inc. is a manufacturer of in-fiber optical components and subsystems based on its Application Specific Fiber Platform. The company designs and manufactures optical filters (based on fiber Bragg gratings), OADMs, ODMs, dispersion compensators, high-power and multi-port optical amplifiers and components, DFB fiber lasers and laser arrays. SPI's Application Specific Fiber Platform allows the manufacture of reliable, high-performance components and subsystems in volume.

The company's expertise is in specialty fiber, fiber Bragg grating design and fabrication, fiber based ASE sources and amplifiers, and laser technology - which comprise the key components of the Application Specific Fiber Platform. These core technologies are the basis for SPI's state-of-the-art components and subsystems, and make optical systems and networks more flexible, powerful and less expensive. Southampton Photonics' in-fiber technology enables optical networks to transport more bits, over more channels, with greater accuracy, at a lower cost.

2002/v1 *Specifications subject to change without notice*