



flawless fusion with infinite possibilities

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

Temperature and Strain Sensing FBGs



SIFAM's Temperature and Strain Sensing Fibre Bragg Gratings have class-leading performance derived from sophisticated design techniques and advanced manufacturing technologies.

These devices feature very low crosstalk, high stability at elevated temperatures and are offered with a wide range of available bandwidths and reflectivities to give optimised and reliable application performance.

SIFAM sensing FBGs can be fabricated both in standard 125mm fibre and in reduced-cladding 80mm fibres for applications requiring tight bend radii.

All devices are proof-tested prior to shipment to confirm mechanical integrity after fabrication.

Key Features:

- Flexible design & manufacture
- Very low cross-talk
- Low insertion loss
- Highly stable optical characteristics
- Specialised packaging for shipping
- ISO 9001 registered manufacturing facility

Applications:

- Strain and temperature sensing elements
- Structural health monitoring
- Hydrophonic development

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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	Low R	High R	Unit
Wavelength Range	1525 -1565		nm
Bandwidth (FWHM)	0.1 to 1.0	0.1 to 0.5	nm
Peak Reflectivity	1 to 10	10 to 90	%
Tolerance on Peak Reflectivity	±10		%
Tolerance on Bandwidth	±10		%
Crosstalk	@ > ±1.5*FWHM	<-20	dB
	@ > ±2.5*FWHM	<-30	
	@ > ±5*FWHM	<-40	
Wavelength Accuracy ₂	< 0.25		nm
Temperature Sensitivity ₃	Approx. 10		pm/°C
Strain Sensitivity	Strain * wavelength (nm)		nm

1. All specifications met over defined channel bandwidth over specified operating temperature and all states of polarisation
2. Specified at 23 ± 2°C
3. Exact value is fibre-dependent

Environmental Specifications

Parameter	Specification	Unit
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-40 to +85	°C
Relative Humidity	5 to 85	%RH
Operating Strain Range	<0.3	%

Device format parameters

Parameter	Specification	Unit
Fibre Type	See available fibre types	
Pigtail Length	> 1	m
Device Format	Unpackaged	Recoated or Uncoated
Proof Test Level (Unpackaged)	1	%

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Indicative Performance Figures

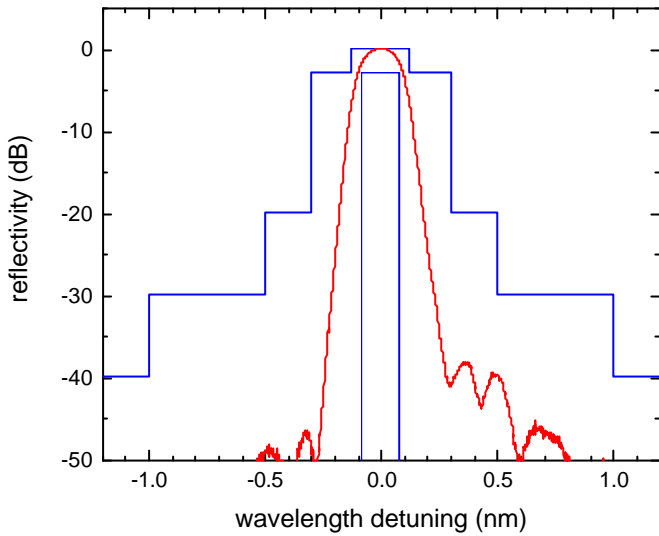
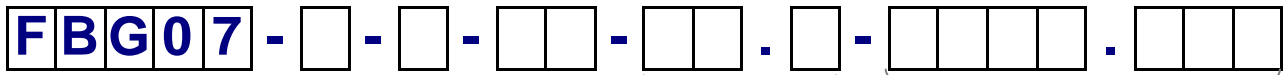


Fig. 1: An example of a 0.2nm bandwidth sensor grating
(Order code FBG07-U-R-80-0.20-1542.000)

Ordering Code Information



Code	Device format	Code	Fibre type	Reflectivity (%)	Bandwidth (nm)	Centre wavelength (nm)
R	Recoated	A	Corning SMF-28 (125/250 μ m, 0.12 NA)			
U	Uncoated	H	Corning HI 1060 Flex (125/250 μ m, 0.2 NA)			
		R	Corning RC 1550 (80/165 μ m, 0.21 NA)			