

Fiber Bragg Grating Array | os1200



Description

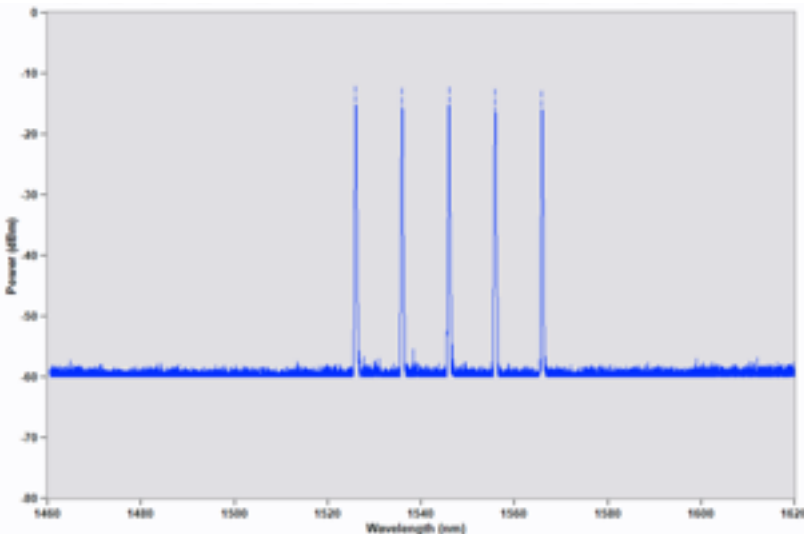
The **os1200 Fiber Bragg Grating (FBG) Array** is designed for use in fiber optic sensing applications. It is a six meter long polyimide coated optical fiber with five FBGs spaced at one meter intervals.

Fiber Bragg gratings are the fundamental elements upon which most fiber optic sensors are based. An FBG is an invisible reflector inside the core of the fiber that is set to a specific wavelength of light. When the fiber where an FBG is located is exposed to strain or temperature, the FBG's "center wavelength" shifts to a higher or lower wavelength. The direction and magnitude of the shift is proportional to the change in strain or temperature. Each os1200 is built with five FBGs at standard center wavelengths.

**Five polyimide coated
FBGs in an array**

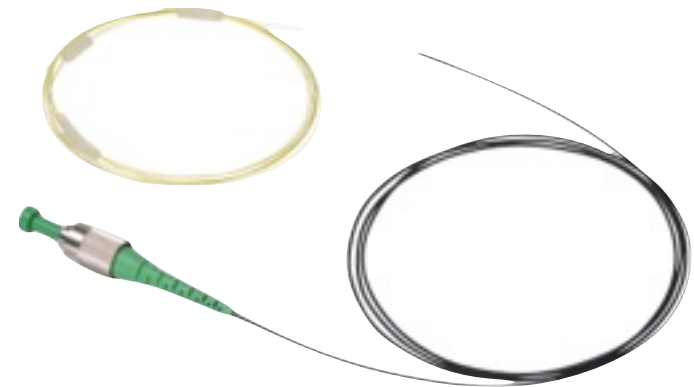
os1200's are used in applications ranging from basic experiments with FBGs to construction of complex transducers containing one or more FBGs. The polyimide coating provides excellent transfer of strain through the fiber coating to the FBG in the fiber core. Polyimide also performs well over a wide temperature range. The splice free array provides a convenient way to take advantage of the multiplexing capabilities of FBGs.

One or two FC/APC connectors, and loose buffer tube protection, are available as packaging options.



Key Features

- Optional FC/APC** connector and loose buffer tube for ease of handling
- Clearly** marked FBG locations
- Splice-free** array
- Non metallic** construction



Benefits

- Longevity** – resistant to lightning, corrosion, EMI.
- Passive** – no spark hazard, no power at sensor
- Multiplexing** – many sensors, few cables, long range
- Versatility** – small size, long distances and sense many properties with one system
- Installation** – weld, glue, embed, connect in series
- Ruggedness** – fatigue over 100 million cycles, wide temperature range

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Physical Properties	os1200
Number of FBGs	5
FBG Length	10 mm
FBG Spacing	1 m \pm 50 mm
Strain Limit	5,000 $\mu\epsilon$
Strain Sensitivity	\sim 1.2 pm/ $\mu\epsilon$
Operating Temperature Range	- 40 to 120°C
Thermal Response	\sim 9.9 pm/°C
Fiber Lead Length	1 m (\pm 10 cm), each end
Fiber Type	SMF28-Compatible
Fiber Coating	Polyimide
Fiber Re-Coating Diameter	145 - 165 μm
Buffer Tube	1 mm loose tube included with optional FC/APC connector
Fiber Bend Radius	\geq 17 mm
Optical Properties	
Center Wavelengths	1526, 1536, 1546, 1556 and 1566 nm (\pm 1 nm)
Peak Reflectivity (Rmax)	> 70%
FWHM (- 3 dB point)	0.25 nm (\pm .05 nm)
Isolation	> 15 dB (@ \pm 0.4 nm around center wavelength)

Ordering Information

os1200-1xx-1yy

	Termination type
1xx	Fiber Lead 1, Length & Connector
xx	UT Standard Lead Length, 1 m
	FC Underterminated FC/APC Connector
	Termination type
1yy	Fiber Lead 2, Length & Connector
yy	UT Standard Lead Length, 1 m
	FC Underterminated FC/APC Connector

Ordering Information Example

os1200-1FC-1UT