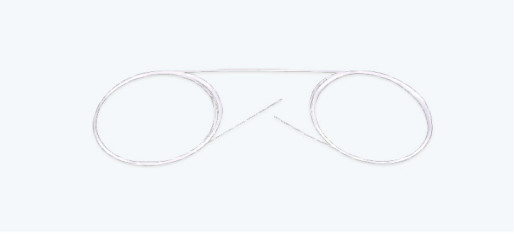
Fibre Bragg Grating

Fibre Bragg Grating
YOSC-FBG-15xx

A wavelength reflecting device made by using ultraviolet light and phase mask engraved on an optical fibre. YOSC adopts advanced production processes to mass-produce fibre Bragg gratings of various wavelengths in the C+L band.



Features

- Stable performance, high reflectivity, and small 3dB bandwidth
- High precision, strong stability, and excellent reliability
- Customizable
- High SLSR

Applications

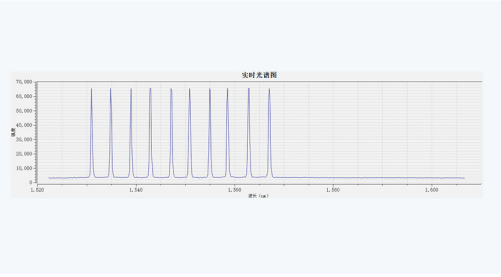
- The core sensitive units of various FBG sensors
- Monitoring of electricity, petrochemicals, civil engineering, tunnels, temperature, strain, pressure, etc.

Parameters

Items	YOSC-FBG-15xx			
Central wavelength (nm)	1500~1600			
Grating type	Apodized or uniform			
Wavelength tolerance (nm)	± 0.3			
Grating length(mm)	3	5	10	15
Reflectivity (%)	>70	>70	>90	>90
3dB bandwidth (nm)	<0.7	<0.7	<0.3	<0.3
SLSR(dB)	>10		>15	
Recoating type	Acrylate/Polyimide			
Tensile strength (Kpsi)	≥ 100			
Fibre type	Acrylate/Polyimide coated optical fibres			
Tail fibre length (m)	1.5 (typical)			
Operating temperature (°C)	Acrylate fibre: -20~80; Polyimide fibre:-40~200			

Fibre Bragg Grating Array YOSC-FBG-N

YOSC-FBG-N is multiple fibre Bragg gratings written on the same fibre, suitable for longdistance and multipoint simultaneous testing. Fibre optic grating array can improve the stability and reliability of the system, while simplifying the entire sensing system.



Features

- Strong tensile strength, no fusion point in the middle, single fibre processing, high SNR, and customizable
- High mechanical strength
- The number and spacing of grating can be customized
- Customizable

Applications

- Distributed sensing measurement
- Fuel cell

Parameters

Items	YOSC-FBG-N
Central wavelength (nm)	1500~1600
Grating type	Apodization or equation
Wavelength tolerance (nm)	± 0.3
Grating length(mm)	2~10
Reflectivity (%)	1~95
3dB bandwidth (nm)	<0.5
SLSR(dB)	≥15
Recoating type	Acrylate/Polyimide
Tensile strength (Kpsi)	≥ 100
Fibre type	Acrylate/Polyimide coated optical fibres
Grating interval	Customized
Number of gratings	Customized

Femtosecond Fibre Bragg Grating YOSC-FsFBG-15XX

YOSC-FsFBG-15XX uses femtosecond laser to directly penetrate the coating layer of the fibre and write FBG onto the fibre core. It can be written with special optical fibres to ordinary communication optical fibres. Femtosecond laser direct writing FBG have high stability and can withstand temperatures up to 1000°C in the grating area.

Features

- The temperature resistance of the grating area reaches 1000°C
- Written directly through the coating with high mechanical Strength
- The grating area can be as short as millimeters, achieving point sensing and solving temperature strain cross sensitivity
- Radiation resistance, and electromagnetic interference resistance
- Customizable

Applications

- Fuel cell
- Low temperature, superconducting magnet
- Oil and gas exploration

Parameters

Items	YOSC-FsFBG-15XX
Central wavelength (nm)	1500~1600
Grating type	Apodization or even
Wavelength tolerance (nm)	± 0.3
Grating length(mm)	6 (customizable)
Reflectivity (%)	0.01 ~ 99
3dB bandwidth(nm)	<0.5
SLSR(dB)	>15
Tensile strength (Kpsi)	≥ 200
Fibre type	Acrylate/Polyimide
Pigtail length(m)	1 (typical)
Operating temperature (°C)	Acrylate:-40~85; PI:-200~350

Weak Reflectivity Fibre Bragg Grating Array YOSC FsWFBG-N

YOSC-FsWFBG-N is based on the self-developed femtosecond laser automatic micromachining system to prepare a weak grating array, which is written on a fibre with thousands of weak reflectivity gratings. Using femtosecond laser direct writing technology, the center wavelength, reflectivity and other parameters can be customized according to customer needs. Combined with special coated optical fibres, it can be stably used in extremely harsh environments.

Features

- High reliability, high sensitivity, high resolution
- Written directly through the coating with high mechanical strength
- Strong reuse capability, quasi distributed/ distributed compatibility
- High temperature resistance, radiation resistance, and electromagnetic interference resistance

Applications

- Oil and gas exploration and dynamic monitoring of oil and gas storage
- Safety monitoring of structures such as tunnels, bridges, and fans
- Leakage monitoring of long-distance oil and gas pipelines

Parameters

Items	YOSC-FsWFBG-N
Central wavelength (nm)	1500-1600
Grating type	Apodization or equation
Wavelength tolerance (nm)	±0.3
Grating length(mm)	6(customizable)
Reflectivity (%)	<0.1%
3dB bandwidth(nm)	>0.2(customizable)
Tensile strength(Kpsi)	≥200(PI)
Fibre type	Acrylate/Polyimide
Working temperature(℃)	Acrylate:-40~85; PI:-200~350
Grating interval(m)	Customizable
Number of gratings(/km)	Customizable