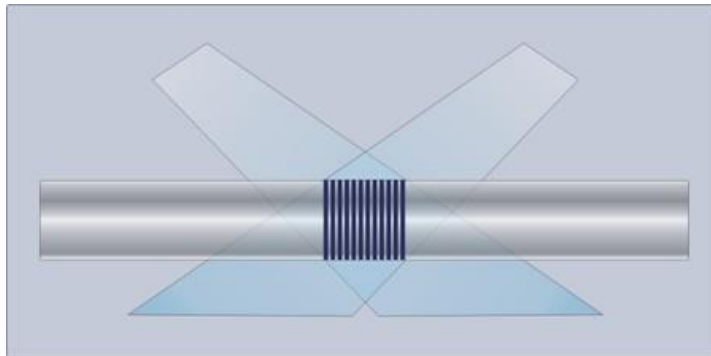
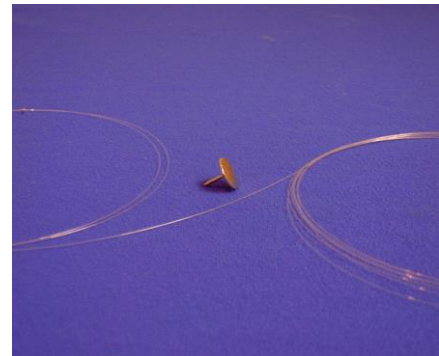


- Optical strain and/or temperature sensor
- Zero power, EMI immune
- Intrinsically safe
- Highly stable
- Multiple km signal integrity
- Available singly or in multiple FBG arrays
- Suitable for composite embedment
- Can be used to manufacture smart sensors and transducers
- Suitable for long-term SHM



FBG recorded by interfering UV laser beams



FBG sensor in acrylate coated fibre

A Fibre Bragg Grating (FBG) is a novel optical sensor recorded within the core of a standard optical fibre. It reflects a narrow bandwidth of light, which responds faithfully to changes in temperature and strain. Many FBG sensors can be recorded onto a single optical fibre and interrogated simultaneously with a single instrument - the effect is a very low cost mechanism for distributed monitoring of strain and/or temperature within large structures, particularly suited to design validation and structural health monitoring

SmartFBG Specifications (typ):

	Unit	Standard				Options
Centre wavelength	nm	1528 – 1608				Alternative wavelength range
FBG length	mm	1	2	5	10	
Peak reflectivity	%	>=50	>=50	>=70	>=80	
3 dB bandwidth	nm	<1.5	<1.2	<0.7	<0.3	
SLSR single sensor	dB	15				> 15
Strain range	µstrain	+/- 9,000				> +/- 9,000
Strain sensitivity	pm/µstrain	1.20				
Strain resolution <sup>†</sup>	µstrain	0.4				
Temperature sensitivity <sup>‡</sup>	pm/°C	11				
Temperature resolution <sup>†</sup>	°C	0.05				
Fibre type		Single Mode SMF-28, 9/125 µm				
Fibre coating and FBG recoating options*		Acrylate	Polyimide			High temperature acrylate Other custom coatings
Temperature range <sup>‡</sup>	°C	-270 to +85		-270 to +300		
Cable and connections		To suit application				

<sup>†</sup> with 0.5 pm resolution interrogator  
<sup>‡</sup> decreased temperature sensitivity below -170 °C, no temperature sensitivity below -220 °C

\* Polyimide recoating recommended for strain applications

All specifications are correct at the time of writing and may change without notice.

Certain specifications may be speculative or untested - please contact us to confirm the specification meets with your requirements.