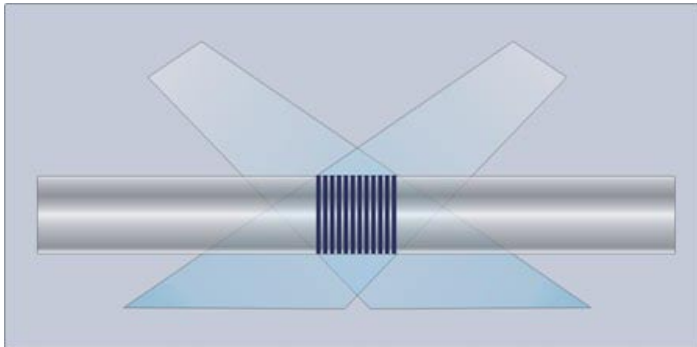
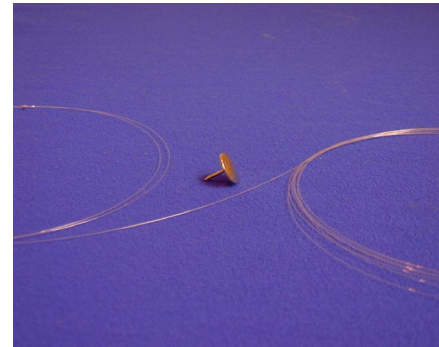


- ◇ **Optical strain and/or temperature sensor**
- ◇ **Zero power, EMI immune**
- ◇ **Intrinsically safe**
- ◇ **Highly stable**
- ◇ **Multiple km signal integrity**
- ◇ **Available singly or in multiple FBG arrays**
- ◇ **Suitable for composite embedment**
- ◇ **Can be used to manufacture smart sensors 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	1510 – 1590				Alternative wavelength range
FBG length	mm	1	2	5	10	
Peak reflectivity	%	50	70	70	80	
3 dB bandwidth	nm	1.2	0.7	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, 9/125µm				
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 (e.g. W4)  
<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.