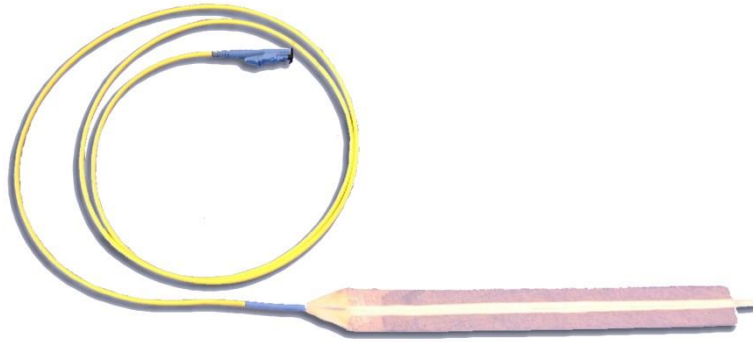- **FBG strain and/or temperature sensor**
- **Flexible, unobtrusive veil cloth construction**
- **Zero power, electrically immune**
- **Intrinsically safe**
- **Developed by Smart Fibres for composite embedment**

- **Available singly or in multiple arrays**
- **Highly stable**
- **Multiple km signal integrity**
- **Suitable for long-term SHM**

Example SmartTape Construction

SmartTape is a lightweight and highly flexible FBG strain and temperature sensor, constructed by integrating the sensing fibre within an unimpregnated glass fibre mat (veil cloth). The sensor is embedded or attached by simply brushing on with a suitable resin. The result is a sensor that is convenient for composite manufacturers to handle and embed, or suitable for surface mount attachment to irregular shaped structures, or in installations where a very low sensor profile is desired.

Installations to date include wind turbine, yacht masts, civil structures and riser pipes.

SmartTape Specifications (typ):

	Unit	Standard	Options*
Tape Dimension	mm	As required	
Gauge Length (approx.)	mm	5	As required within sensor length
Strain Range	µstrain	+/- 9,000	> +/- 9,000
Strain Sensitivity	pm/µstrain	1.20	
Strain Resolution[†]	µstrain	0.4	
Temperature Range	°C	-20 to +50	Extended temperature range
Temperature Sensitivity	pm/°C	11	
Temperature Resolution[†]	°C	0.05	
Fibre Type		Single Mode SMF-28, 9/125 µm	
Typical FBG Type		CWL 1510 - 1590 nm, FWHM ~0.7 nm R >70%, Apodised profile, SLSR >15dB	Alternative CWL or spectral profile
Cable and connections		To suit application	
Recommended Bonding Agents (subject to temperature range)		Composite matrix (embedded) Unfilled epoxy resin (surface mounted)	

[†] with 0.5 pm resolution/1 pm accuracy (e.g. SmartScan) interrogator
*Custom SmartTape available on request for volume 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.