



*SmartBar Embedded Rebar Sensor*

### Key Features

- Long Gauge FBG Strain Sensor
- Zero Power, EMI Immune, Intrinsically Safe
- Multiple km Signal Integrity
- Suitable for Embedment in Inhomogeneous Construction Materials
- Highly Stable
- Temperature Compensation Option
- High Multiplexing Capability

### About SmartBar

SmartBar is a long-gauge FBG sensor packaged within a metallic rebar, developed to withstand embedment within concrete, bitumen and other construction materials. SmartBar is available in a variety of gauge lengths, with or without temperature compensation, and can be connected in multiple sensor strings. Applications include road pavement monitoring, embedded concrete load monitoring and ground anchor instrumentation.

### Specifications

Parameter	Standard	Options
Sensor Length	500, 1,000, 2,000 mm	
Gauge Length (approx.)	As required within sensor length	
Strain Range	± 1,500 µstrain	Contact us for > 1,500 µstrain
Strain Sensitivity	1.2 pm/µstrain	
Strain Resolution <sup>†</sup>	0.4 µstrain	
Temperature Range	-20 to +50 °C	Extended temperature range
Temperature Sensitivity	11 pm/°C	
Temperature Resolution <sup>†</sup>	0.05 °C	
Fibre Type	Single Mode SMF-28, 9/125 µm	
Typical FBG Type	CWL 1510 to 1590 nm, FWHM ~0.7 nm, R > 70 %, Apodised profile, SLSR > 15dB	Alternative CWL or spectral profile
Cable and Connections	To suit application	

<sup>†</sup> with 0.5 pm resolution interrogator

Specifications may change without notice