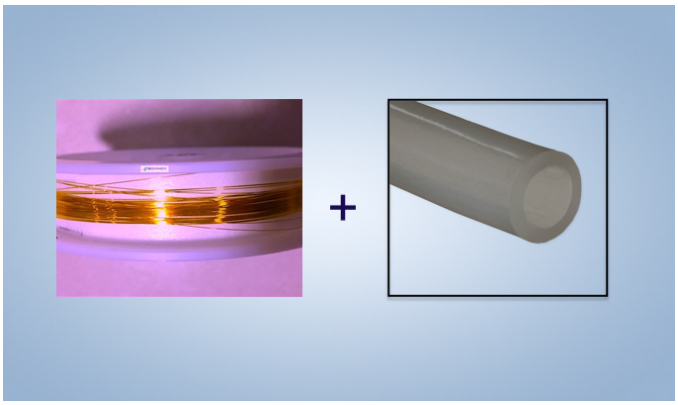
T165 / High Temperature FBG Steel Probe to 1000C

Description

The T165 is Fiber Bragg Grating (FBG) Array inside a loose, virtually frictionless steel tube, and it is available in a wide range of optical specifications. Naturally packaged directly in singlemode (SM) fiber, these daisy-chained FBG sensors are ultra-small and are designed for use in distributed, quasi-distributed, and multi-sensing-point applications with the added requirement of minimal intrusion.

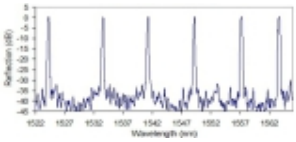
The T165 optical temperature sensing probe consists of 1 to 99 Fiber Bragg Grating sensing elements embedded in polyimide, copper, or gold coated fibers, depending on the desired temperature rating. The sensing array is then protected from strain by an outer 316 Stainless Steel tube. Steel tube capping service is available upon request. SS tube length limitations apply. The sensor yields excellent wavelength to temperature linearity.



T165 Steel FBG Temperature Sensing Probes are produced by Technica under International License from United Technologies Corporation.

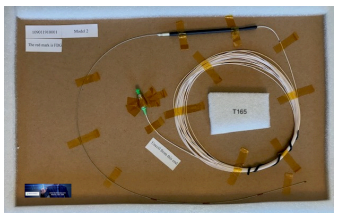
Key Features

Temperature linearity. The precision FBG structure and top quality single mode fiber used in producing the T165 yield a simple transducer configuration of high resolution, linearity, and measurement repeatability.



Daisy-chaining with no limits. Well suited for projects that include the need to monitor many points as the T165 is a ready to deploy Stainless Steel tube protected FBG Array, available in customer defined distances between FBGs, and featuring a flexible and virtually limitless number of FBGs to match the requests of our customers, to optimally fit their applications. Standard connectors termination or spliced to specialty cables.

Reliable high-temperature measurements. The T165 was designed for projects that require both the availability of high-temperature resistant FBGs sensors and stable operation for highly accurate measurements over the long-term. The simple probe design makes handling and installation very easy. Fastening methods are by simple mounting brackets, by steel tube bonding, laying, inserting, or embedding.



Proven field performance. The T165 High-Temperature Multipoint FBG Steel Probes are a commercial product manufactured in increasing volumes. Installed in applications worldwide with practically no returns since initial release. The T165's steel probe packaging and sealing technology is a valuable sensing product line enhancement that extends the range of high-temperature applications addressable by FBG based optical sensors.

Parameter	Specifications
Wavelengths / Tolerance	1460 to 1620 nm, +/-1 nm; 980, 1060, 1310 nm, other
Reflection BW (FWHM)	0.1 nm to 2.0 nm; other opt.
Reflectivity %	>40%; other options
FBG Length	5 mm - 10 mm
SLSR	15 dB; other options
Response Time	1 second
Maximum Temperature Options	Up to +300°C Up to +500 °C Up to +700°C Up to +850°C Up to +1,000°C
Fiber Coating	Polyimide, Copper, Gold, Temperature rating dependent
Fiber Type and Cladding Diameter Options	Single-Mode Non-PM / PM 125 (std), 80, 50µm DIA
Sensor Configurations	Sealed-tip multipoint probe, open array, terminated cable
Fiber Pigtail Length	1 m, other options
Fiber Bend Radius	> 17 mm, other options
Optical Connector	FC/APC, or custom

Applications in Industrial, Nuclear Energy, Engine Testing, and various R&D Programs

Technica undertakes a rigorous development process before products release. The company is also firmly committed to continuous improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

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