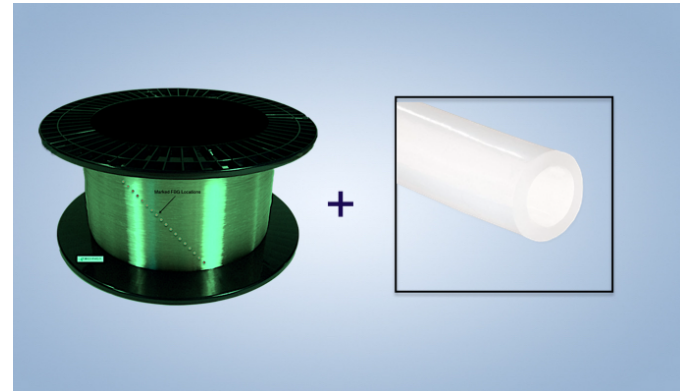


## Description

The T175 is a Single-Mode (SM) Fiber based Fiber Bragg Grating (FBG) High Strength Multipoint Temperature Sensing Array inside a loose, virtually frictionless, transparent Teflon tube. Written Through-the-Coating and featuring Bandwidths from 0.1nm to 50nm, Reflectivities from 1% to 90%, with ultra-low Polarization Dependent Frequency Shift (PDFS) and Polarization Dependent Loss (PDL), and SLSR > 15dB.

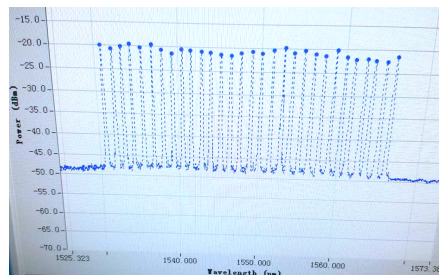
Naturally packaged (written) directly in fiber, these high-strength sensing cables are further protected from strain by an outer Teflon tube. The T175 can be used on its own, or as a multi-point temperature compensation line running parallel with our T170 High Strength Sensing Cables, when the latter are used as multi-point strain sensors to 500kpsi, in temperature varying environments. Excellent wavelength to temperature linearity. Designed to make handling and installation fast, easy and intuitive. Delivers advantages inherent to all FBG sensors. Equally sensitive as traditional strain and temperature sensors but immune to EMI.



T175 Teflon FBG Temperature Sensing Arrays use Zeus technology. Produced by Technica under International License from UTC.

## Key Features

**Temperature Linearity.** The precision made FBG structure written into the fibers' core for producing the T175 yields a sensor 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 T175 is a ready to deploy Teflon 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. Standard connectors termination or spliced to specialty cables.

**Low cost, easy installation, and long lifetime.** The T175 was designed for projects that require both the availability of low-cost high-strength FBG arrays and stable operation for highly accurate measurements over the long-term. The original design makes handling and installation very easy. Fastening methods are by simple fiber bonding, laying, or embedding. Technica is happy to provide support and advice with regard to application specific installation and monitoring requirements.

**Proven reliability and performance.** The core technology used for reel-to-reel volume production of the T175 high strength sensing arrays has been developed over several years and received excellent customer feedback. The T175 is a product line enhancement that extends the range of addressable applications.

Parameter	Specifications
Wavelengths / Tolerance	1458 to 1622 nm, +/-0.5nm; 980, 1060, 1310nm, other
Reflection BW (FWHM)	0.1nm to 1.5nm Standard; 1.5nm to 50nm Chirp
Reflectivity %	50%, 1% to 90% options
FBG Length, Adjacent Space	1mm to 24mm, 1mm to 1km adjacent spacings available
SLSR	>15dB; other options
Response Time / Settling Time	1 second / Few seconds and varies based on Teflon tube size and wall thickness used
Temperature Range / Sensitivity	-40°C to +100°C; ~10 pm/°C
Fiber Type and Coating	Single-Mode Fiber with Premium Acrylate Coating
Splice-Free Array Length	No Minimum, 10km Max
Teflon Protection DIA	1 mm, other options from 0.6mm to 9.4mm
Multi-Strand Configuration	Supported to 16 fibers
Fiber Bend Radius	>30mm, other options
Optical Connector	FC/APC, LC/APC, or custom

**Applications include Security, Medical, Robotics, Structures, Energy, Industrial and R&D**

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.

**Technica Optical Components** / 3657 Peachtree Rd, Suite 10A, Atlanta, 30319, USA, [info@technica.com](mailto:info@technica.com), [www.technica.com](http://www.technica.com)