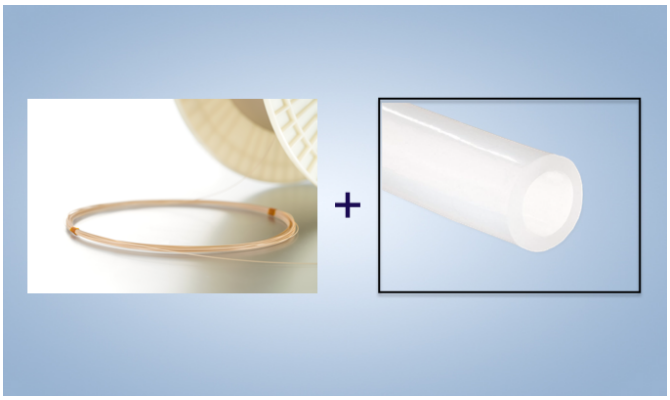
T155 / Teflon & PEEK FBG Temperature Sensing Cable

Description

The T155 is a ruggedized high temperature non-metallic cable sensor designed for monitoring distributed temperatures in environments to 260 Degrees Celsius while protected from strains by a loose, virtually frictionless, external Teflon tube.

At its core, the T155 optical sensing cable consists of an array of Fiber Bragg Grating (FBG) sensors. The outer layer of the cable is a tight buffer, chemically inert, abrasion resistant PEEK polymer coat which protects the FBG sensors and ruggedizes the cable. A final external loose Teflon tube protects the sensor from strains.

The T155 Temperature Sensing Cable is primarily used as a temperature compensation cable running in parallel with a T150 PEEK FBG Strain & Temperature Sensing Cable and offers temperature compensation measurements at individual FBG points spaced at customer defined lengths. The cable is designed to make handling and installation fast, easy and intuitive.



T155 Teflon & PEEK FBG Temperature Sensing Cables use Zeus technology. Produced by Technica under International License from UTC.

Key Features

High temperature resistant non-metallic sensor. Ideally suited for applications where there is concern that the high temperature or chemical composition of the surrounding environment will cause damage to the sensors.

Rugged and reliable. In side-by-side comparison with other protection materials, the chemically inert PEEK material offers superior protection. Polyether Ether Ketone (PEEK) is an advanced material used for motor windings with one of the highest strength to weight ratios of any engineered polymer. Often a good alternative for aluminum, steel, and glass. A detailed list of technical specifications and environmental ratings for the PEEK overcoating material is available upon request. Further protected by the loose Teflon tube, the T155 is the ideal temperature compensation sensor for T150 PEEK FBG Strain Sensing Cables.

Easy handling and deployment. The original design of this cable eliminates the fragility typically associated with single layer coated fibers and enables significant field installation productivity improvements. Fastening methods are by simple mounting brackets, by teflon tube bonding, laying, or by embedding.

Long lifetime. The T155 cable construction focuses on demanding projects that require stable operation over the long term. The cable is qualified to the same rigorous standards used for comparable shielded electronic systems.

Proven field performance. The T155 Teflon & PEEK FBG Sensing Cable are an evolutionary step for extending the addressable market of our T150 PEEK FBG Strain Sensing Cables for which we continue to receive excellent customer feedback.

Parameter	Specifications
Operating Temperature	-40 to 260°C
Primary Fiber Coating	Polyimide of 155um OD
Secondary Fiber Coating	PEEK of 900um OD
External Teflon Cable Outer Diameter	2 mm, other options to 9.4mm
PEEK Resistivity	10^{16} to 10^{12} Ohm-in (depending on T).
Temperature Sensitivity	~10 pm/°C (+/-1.7pm/°C)
Response Time / Settling Time	1 second / Few seconds and varies based on Teflon tube size and wall thickness chosen
Maximum Sensors / Cable	100
Distance Between Sensors	1.5 mm to 100 m, uniform or custom spacing
Cable Bend Radius	> 30 mm std, lower bending radius options
Cable Tensile Strength	>100 kpsi
Cable Type	PEEK Ruggedized
Optical Connectors	FC/APC, other options

Applications in Energy, Aerospace, Fire Monitoring, and Industrial Applications

Technica undertakes rigorous manufacturing process development before releasing licensed products. The company also adopts improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

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