

## Description

The T105 is a Fiber Bragg Grating (FBG) Array inside a loose, virtually frictionless, transparent Teflon tube, and it is available in a wide range of optical specifications. Naturally packaged directly in bare 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.

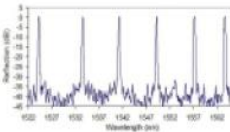
The T105 optical sensor consists 1 to 99 Fiber Bragg Grating sensing elements embedded in single-mode acrylate, polyimide, copper, or gold coated fiber which is then further protected from strain by an outer Teflon tube. The sensor yields excellent wavelength to temperature linearity. It can be used on its own, or as a multi-point temperature compensation line running parallel with our T100 Sensing Arrays, when the latter are used as multi-point strain sensors in varying temperature environments.



T105 Teflon FBG Temperature Sensing Arrays use Zeus technology. Produced 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 T105 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 T105 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, to optimally fit the applications. Standard connectors termination or spliced to specialty cables.



**Low cost, easy installation, and long lifetime.** The T105 was designed for projects that require both the availability of low-cost FBGs 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 mounting brackets, by teflon tube bonding, laying, or by embedding.

**Proven field performance.** The T105 Teflon FBG Arrays are a volume manufactured product. In mass production since years, the core T100 sensing array inside the T105 Array construction continues to improve in specifications and available options each year and we continue to receive excellent customer feedback. Currently installed in applications worldwide with practically no returns since initial release. The T015 is a valuable product line enhancement that extends the range of addressable applications.

Parameter	Specifications
Wavelengths / Tolerance	1460 to 1620 nm, +/-0.5; 980, 1060, 1310nm, other
Reflection BW (FWHM)	0.2nm to 0.3nm; other opt.
Reflectivity %	>70%; other options
FBG Length	8mm; 1-24 mm options
SLSR	15 dB; other options
Response Time / Settling Time	1 second / Few seconds and varies based on Teflon tube size and wall thickness chosen
Temperature Range /	-40 to 300°C;
Sensitivity	~10 pm/°C
Fiber Type and Coatings	SM Polyimide; other coatings: Acrylate, Copper, Gold
Teflon Protection DIA	1 mm, other options from 0.6mm to 9.4mm
Multi-Strand Configuration	Supported to 16 fibers
Cable Bend Radius	>30mm; other options
Optical Connectors	FC/APC, other options

## Applications in Medical Robotics, Energy, Structure Test Facilities, Vehicle Labs, Industrial

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東京都港区白金台5-13-26-501

オプトワークス株式会社

TEL. : 03-3445-4755

メールアドレス : [sales@opto-works.co.jp](mailto:sales@opto-works.co.jp)