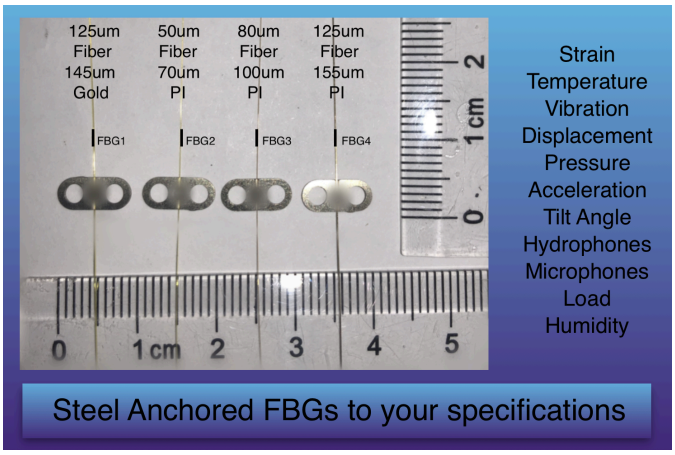
T15 / Stainless Steel Anchored FBG

Description

The T15 is a Polyimide or Gold Coated Single-Mode (SM) Fiber based Fiber Bragg Grating (FBG) factory-bonded to a stainless steel pad or "anchor". The proprietary non-slip mass-manufacturing process used for producing the T15 yields ultra-high consistency and enables direct and immediate field installation of the FBG to many types of surfaces by spot-welding, screwing-in, or chemically bonding the FBG's steel pads to the respective surfaces.

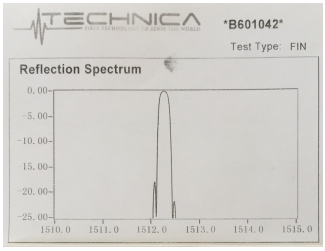
Available in a wide range of optical and mechanical specifications. Naturally packaged (written) directly in fiber, these FBGs can be used as they are or they can be packaged into a variety of higher level components and devices for use in optical systems. Small-size and fast response time. Excellent wavelength to temperature and wavelength to strain linearity. The T15 FBG is designed to make handling and installation fast, easy and intuitive. Delivers the many advantages inherent to all FBGs.



FBGs manufactured and sold by Technica under International License from United Technologies

Key Features

Temperature and Strain Linearity. The precision made FBG structure written into the fibers' core for producing the T15 yields a simple transducer configuration of high resolution, linearity, and measurement repeatability. High SLSR for clear signal processing.



Easy installation. The T15 aims to eliminate the need for civil, industrial, medical, security, rail, marine, aerospace, energy and other engineers and researchers to all become materials experts for bonding polyimide and gold coated fibers onto various surfaces or into various higher level sensor designs that are needed for their various applications. Ideally balancing cost, performance and reliability the T15 is here to simplify the process of using Fiber Bragg Gratings, and to accelerate the creation of new and attractive fiberoptic based commercial solutions. Available for fibers with diameters from 70µm to 155µm and with standardized and custom size stainless steel pads "anchors".

Easy to daisy-chain. Well suited for projects that include the need to provide optical filtering, to monitor strain, temperature and other engineering parameters at many points. The T15 can be provided as a single FBG optical component or in FBG Arrays of various lengths, with a flexible number of FBGs and steel anchors located at customer specified distances along the fiber.

Proven performance and reliability. The T15 Stainless Steel Anchored FBG is a rugged low-cost optical component assembly with stable operation for highly accurate and reliable long-term use. The T15 is a core element for an expanding range of optical devices and applications.

Parameter	Specifications
Wavelengths / Tolerance	850 to 1650nm, +/-0.5; other
Reflection BW (FWHM)	0.1nm to 1.6nm; other options
Reflectivity %	>50%; other options
FBG Length	1-24mm
SLSR	15 dB; other options
Steel to Polyimide or Gold Bond	Proprietary, no-epoxy
Response Time (Strain, Temp)	1.0ns, 0.01ms
Temperature Range / Sensitivity	-50°C to +130°C; ~10pm/°C
Strain Range / Sensitivity	1000, 3000, 5000 µstrain std, higher strain options 1.2pm per µstrain
Fiber Type and Cladding Diameter Options	Single-Mode 125 (std), 80, 50µm DIA
Fiber Coating	Polyimide (155, 100, 70µm), Gold (145µm OD only)
Stainless Steel Pad Size (L,W,H)	9x4x0.8mm std, other options
Fiber Pigtail Length	1 m, other options
Fiber Bend Radius	>17mm std, >2mm option for some fibers
Optical Connectors	LC/APC, FC/APC, or custom

Applications in Structural Engineering, Energy, Industrial, Aerospace, and R&D Labs

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@technicasa.com, www.technicasa.com