

## Description

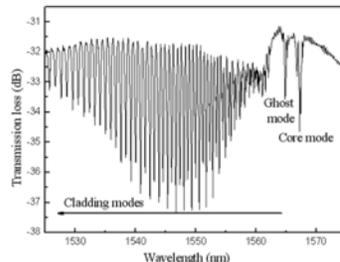
**The Tilted FBG (TFBG) wave vector has an angle with respect to the fiber axis giving it a different axial, radial, and azimuth geometry.**

The TFBG transmission spectrum has many resonance peaks providing a wealth of information not otherwise available in standard FBGs. TFBG resonance wavelength of the cladding modes and mode coupling are highly sensitive to the environmental refractive index.

Useful in optical sensing, filtering, and polarization independent components. For the construction of micro-bending sensors, humidity sensors, liquid-level sensors, advanced strain and temperature sensors, refractometers, and concentration sensors for biochemical applications. The high refractive index sensitivity of TFBGs combined with depositing bio-functional materials on the TFBG, also make it useful platform for creating antibody, antigen and other types of biosensors.

## Key Features

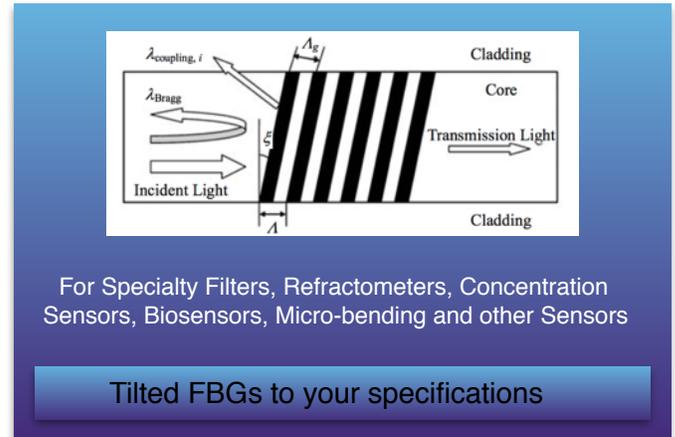
**Easy to daisy-chain.** Well suited for projects that include the need to monitor engineering parameters at many points. The T75 can be provided as single FBGs according to customer specifications or in FBG Arrays of various lengths and with flexible number of FBGs.



### Low cost and ease of use.

The T75 was designed for projects that require both the availability of low-cost TFBGs and stable operation for highly accurate measurements. The original design makes handling and use very easy. Fastening methods are by simple fiber bonding, laying, or embedding. Technica is happy to provide available information and advice with regard to application specific installation and monitoring requirements.

**Proven field performance.** The T75 sensor has been in production for several years and continues to receive excellent customer feedback. Hundreds of thousands of FBGs have been manufactured and delivered from our state-of-the-art production facility with practically no returns since initial release. The T75 is an extension of our FBG family and a reliable core element for an expanding range of applications.



FBGs manufactured and sold by Technica under International License from United Technologies Corporation, Inc.

| Parameter                                | Specifications   |
|--|--|
| Wavelengths / Tolerance                  | 1460 to 1620 nm, +/-0.5; 980, 1060, 1310nm, other                            |
| Tilt Angle                               | 0.1 to 45.0 Degrees  |
| Reflection BW (FWHM)                     | 0.1 nm to 1.0 nm; other opt.   |
| Reflectivity %                           | 1% to 99%  |
| FBG Length                               | 1-24 mm  |
| SLSR                                     | >15 dB; other options  |
| Response Time (Strain, Temp)             | 0.01 ms, 0.1ms   |
| Temperature Range / Sensitivity          | -40°C to +275°C; ~10 pm/°C<br>other options available                        |
| Strain Range / Sensitivity               | >15,000 $\mu\epsilon$ with 1.2pm/ $\mu\epsilon$ ;<br>other options available |
| Fiber Type and Cladding Diameter Options | Single-Mode Non-PM / PM<br>125 (std), 80, 50, 40 $\mu\text{m}$ DIA           |
| Fiber Coating                            | Acrylate, Polyimide, Gold  |
| Fiber Pigtail Length                     | 1 m, other options   |
| Optical Connector                        | FC/APC, or custom  |

## Applications in Biosensing, Chemicals and Gas Detection, and Commercial Sensing

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