

T35 / Multi Core Fiber FBGs

Description

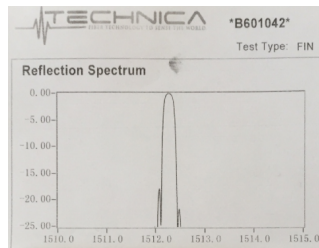
The T35 Multi Core Fiber (MCF) FBG is a Singlemode Multi Core Fiber based Fiber Bragg Grating (FBG) for commercial use, offered in a four core and seven core fiber design.

Available in a wide range of optical specifications. Naturally packaged (written) directly in fiber, these sensors can be used as they are or they can be packaged into a variety of higher level sensors for use in optical sensing systems. Small-size, fast response time and multiple parallel transmission signals. The T35 Multi Core Fiber FBG handling and installation is fast, easy and intuitive. Delivers the advantages inherent to FBG based sensors. Immune to EMI.

T35 series FBGs are fabricated using licensed and proprietary state-of-the-art laser manufacturing technologies. Standard in Dual Acrylate coated fiber and ready for OEM packaging upon request.

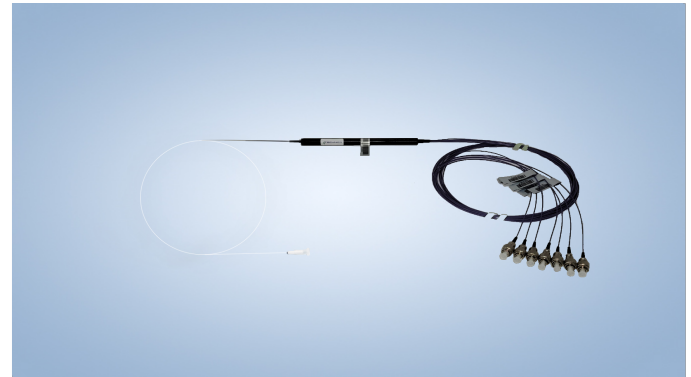
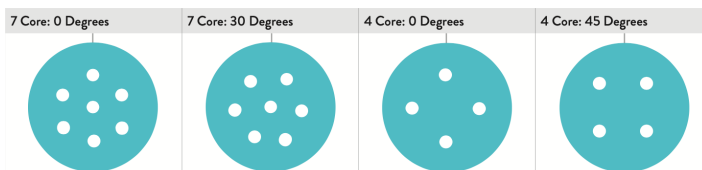
Key Features

Temperature linearity. The precision made FBG structure written into the fibers' core for producing the T35 yields a simple transducer configuration of high resolution, linearity, and measurement repeatability. High SLSR and customer specified BW for clear signal processing.



Advanced FBG Inscription Controls. Well suited for projects that include the need to monitor strain and/or temperature at many points along the MCF fiber. The T35 can be provided with single FBGs according to customer specifications or with FBG Arrays of various lengths and with a flexible number of FBGs. Moreover, the FBGs can be inscribed into all the cores at a physical location, or only on some of the cores. They can also be all with the same wavelength or with all different wavelengths at the same physical location along the fiber.

Multi Core Design Options. The T35 is offered in three main fiber core configurations: square, hexagon plus central core, and hexagon plus central core spun. Enables simultaneous transmission of different signals in the parallel cores within the same fiber.



MCF FBGs are manufactured and sold by Technica under International Licenses from Raytheon.

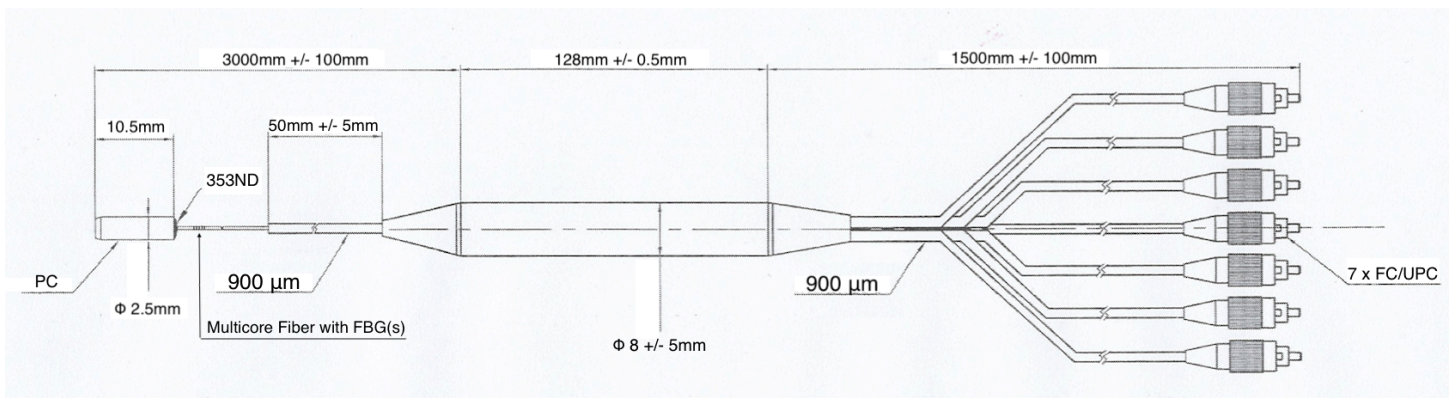
Parameter	Specifications
FBG Wavelength	1460 to 1620 nm, +/-0.5; 980, 1060, 1310nm, other
FBG Bandwidth (FWHM)	0.1 - 1.0nm
FBG Length	1-24mm
FBG Reflectivity	>20% in center core. The FBGs in all cores are clearly visible for monitoring
FBG SLSR	>10dB in center core. The FBGs in all cores have good contrast for monitoring
Response Time	0.01ms, 0.1ms
Temperature and strain sensitivity	10pm/°C and 1.2pm/με
Fiber Coating Type	Dual Acrylate
Operating Temperature	-20°C to +70°C, -55°C to +85°C
Optical Connectors	FC/UPC
Pigtail, Length	Standard SMF28C fiber w/ Acrylate Coat, 1m, other options
Fiber Specifications	See Page 2

Applications in Medical, Shape Sensing, Research Labs, Aerospace, Robotics, Other

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.

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Multi Core Fiber (MCF) Specifications					
	SM-7CoreStd	SM-7CoreA	SM-7CoreB	SM-7CoreS	SM-4Core
Operating Wavelength	1520 - 1620nm	1310nm	1520 - 1650nm		1520 - 1650nm
Cut-Off Wavelength	1300 - 1500nm	1190 - 1310nm	1300 - 1500nm		1300 - 1500nm
Numerical Aperature	0.20 - 0.22				0.14 - 0.17
Mode Field Diameter	9.8 +/- 0.5 μ m @1550nm	4.8 - 5.6 μ m @1310nm	5.7 - 6.5 μ m @1550nm		7.4 - 8.5 μ m @1550nm
Core Spacing	80 +/- 0.3 μ m	35 μ m (nominal)			50 μ m (nominal)
Core Position Shape	Hexagon plus central core			Hexagon plus central core spun	Square
Cladding Diameter	240 +/- 0.3 μ m	125 +/- 1 μ m			
Coating Diameter	350 +/- 10 μ m	245 +/- 7 μ m	245 +/- 10 μ m	200 +/- 7 μ m	245 +/- 12 μ m
Proof Test	1 (100kpsi)				
Fiber Bend Radius	>17mm				



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