

[OEFBG-TTU]

Thermo-Tunable Fiber Bragg Grating Filter

Features:

- Custom FBG Filter specifications
- Wide range of FBG bandwidth and reflectivity
- FBG CWL tuning range up to 1 nm
- Transmission (standard) or reflection mode
- SM, PM, MM, DCF fiber
- Fiber pigtailed with protective tubing
- Fiber connectors (optional)
- Provided with or without FBG (by request)
- Thermo-electrical cooler (TEC) with temperature feedback and heatsinking
- Turnkey solution available

Applications:

- Spectroscopy
- Optical sensing
- Laser technology
- R&D and laboratory testing
- For fine tuning of the FBG wavelength
- For stabilizing the FBG wavelength



Fig. 1. OEFBG-TTU Thermo-Tunable FBG Filter (OEM)

Product description:

The Thermo-Tunable Fiber Bragg Grating filter (OEFBG-TTU) offers the possibility for fine tuning of the FBG center wavelength, using a Thermo-electrical cooler (TEC), over a range of up to 1 nm. The Fiber Bragg Grating (FBG) Filter specifications can be completely customized and defined by the customer (some limitations apply). The use of FBG technology allows the device to be manufactured in both transmission and reflection mode, or in reflection mode only (by request). When in reflection mode, the customer is required to use an external optical circulator. Circulators are available from O/E Land, at the 1060 nm, 1310 nm and 1550 nm ranges, and by request.

The FBG Filter is pre-installed in a small enclosure, in which the temperature is precisely controlled. The controlled temperature can vary from 5°C to 100°C, achieved by using a high-efficient TEC. This will guarantee not only the tuning of the FBG central wavelength, but also it can stabilize the central wavelength at a certain temperature point if that is the need.

The OEM version comes with the enclosure pre-mounted on a heatsink for improved performance and includes the TEC and thermistor feedback. This version requires the use of an external TEC controller to operate, provided by the customer. A turn-key version of the device is also available (OETFG-300T), which comes with a TEC controller included. As the enclosure is easily accessible, both versions can also be provided without a FBG Filter, so that the customer can use their own (by request).

Product specifications:

Parameters	Unit	OEFBG-TTU
FBG Center wavelength (CWL)	nm	400-2400
FBG Bandwidth (FWHM)*	nm	0.05 - 100
FBG Reflectivity*	%	0.1 – 99.99
FBG CWL Tuning range**	nm	< 1
FBG CWL Shift (typ.)	pm/°C	10
Tuning resolution	nm	~ 0.1
Insertion loss	dB	< 0.5
Out band suppression	dB	10-40
Optical power handling	mW	500
Connectivity	-	Fiber connectors or fiber pigtail
Fiber type	-	SM, PM, MM, DCF
TEC operating range	°C	5 - 100
TEC driving current/voltage	-	3.5A / 4V DC
Temperature feedback	-	Included, with thermistor (10kΩ, NTC)
Heatsinking	-	Included
Device operating temperature***	°C	20-30
Device storage temperature	°C	0 - 70
Dimensions (OEM version)	mm	100x80x40

* Some limitations apply.

**Tuning range can significantly vary depending on FBG specifications.

*** Recommended values. The ambient environment temperature can limit the performance, incl. the tuning range.

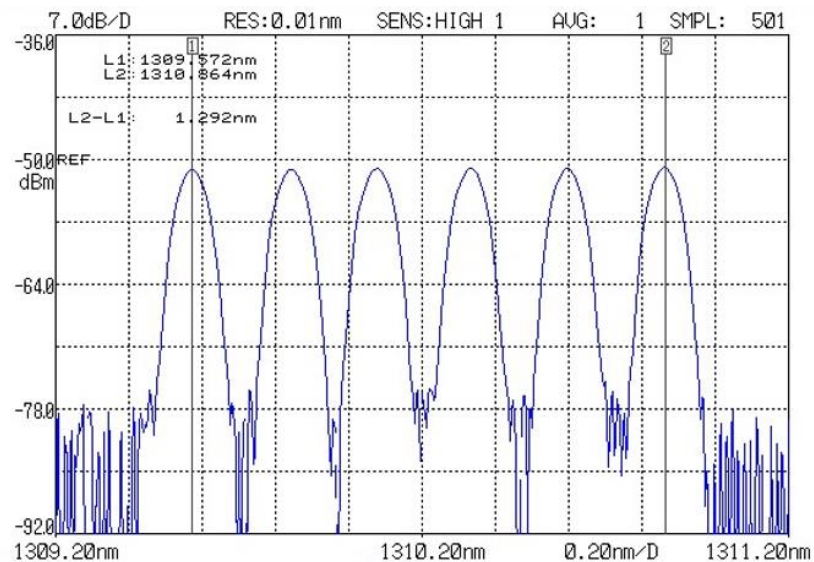


Fig.2. FBG reflection spectra over the tuning range.

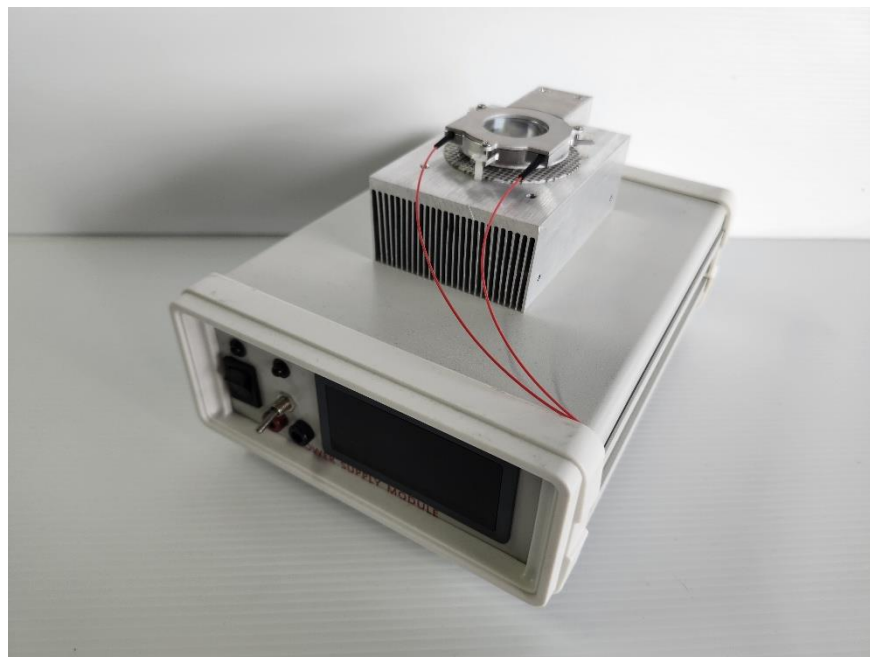


Fig. 3. OEFBG-TTU Thermo-Tunable FBG Filter (turn-key)

Ordering number:

OEFBG-TTU-WL-TR-BW-R- Type:	WL	TR	BW	R	Type
	Wavelength (nm)	Tuning range (nm)	Bandwidth (nm)	Reflectivity (%)	[-]: OEM T: Turn-key
Example:	OEFBG-TTU-1550-1-0.5-90-T				