

# Fibre Amplifier Component



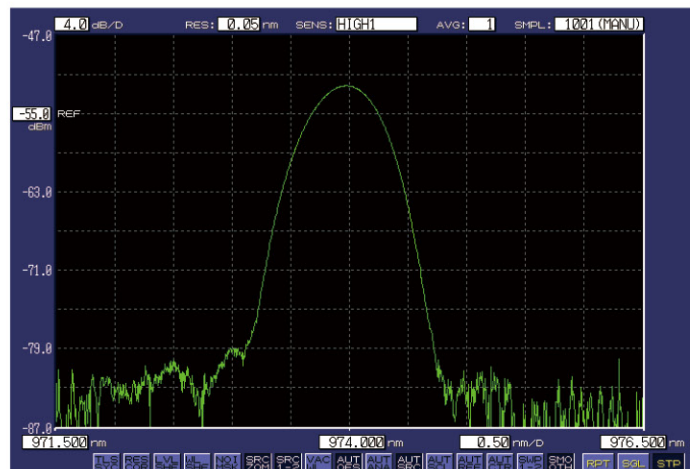
## FBG for 980nm Pump Laser

The FBG for 980nm pump laser is written by UV light within the fibre (SMF) core. The FBG as pigtail is connected to the 980nm pump laser diode, providing external cavity feedback, which make the pump laser wavelength locked at the center wavelength of FBG. Due to the low temperature sensitivity of FBG, the stability of 980nm pump laser wavelength can be greatly improved, and the temperature control of 980nm pump laser is unnecessary. As the narrows the bandwidth of the 980nm pump laser output, the ratio of the output power within the erbium ion absorption band can be increased, thereby increasing the efficiency and the stability of the pump laser.

## Characteristics

- High-precision control of the reflective wavelength, within  $\pm 0.25\text{nm}$
- High-precision control of the reflectivity, within  $\pm 0.5\%$
- Side lobe suppression ratio up to  $-25\text{dB}$  to  $-30\text{dB}$  by apodization, better than the industry standard

Spectrum of Grating Reflection



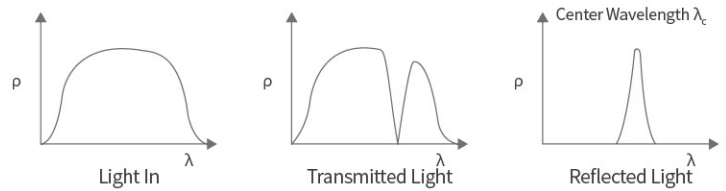
## Applications

- FBG for 980nm pump laser is used to lock output wavelength. Due to the low temperature sensitivity of FBG, the stability of output wavelength and the efficiency of 980nm pump laser can be greatly improved.

## FBG



## Spectrum Response



## Specifications-1

Product Type	AFBG-PMF/SMF-974		
Parameters	Minimum	Typical	Maximum
Centre Wavelength $\lambda_c$ @ 25 °C (measured "in air") (nm)* <sup>①</sup>	973.75	974.00	974.25
Peak Reflectivity @ $\lambda_c$ (%)* <sup>②</sup>	1.5	2.0	2.5
Reflectivity Bandwidth (FWHM) (nm)* <sup>③</sup>	0.4	0.5	0.6
Side Lobe Suppression Ratio Compound (SLSR) (dB)	-	-	-25
Proof Test Level (>8 sec pull test) (kpsi)	150	-	-
Bending Radius (mm)	15	-	-
Operating Temperature Range (°C)	-20	-	75
Change of Central Wavelength with Temperature (nm/K)	0.01		
Grating Region Length (mm)	50		
Grating Type	Apodized		
Fiber Type	PMF/SMF		
Maximum Pump Power Through the Grating (W)	1		
FBG Length (m)	3 - 4 or As Requested		

## Specifications-2

Product Type	AFBG-PMF/SMF-976		
Parameters	Minimum	Typical	Maximum
Centre Wavelength $\lambda_c$ @ 25 °C (measured "in air") (nm)* <sup>①</sup>	975.85	976.00	976.15
Peak Reflectivity @ $\lambda_c$ (%)* <sup>②</sup>	2.5	3.0	3.5
Reflectivity Bandwidth (FWHM) (nm)* <sup>③</sup>	0.60	0.65	0.7
Side Lobe Suppression Ratio Compound (SLSR) (dB)	-	-	-25
Proof Test Level (>8 sec pull test) (kpsi)	150	-	-
Bending Radius (mm)	15	-	-
Operating Temperature Range (°C)	-20	-	75
Change of Central Wavelength with Temperature (nm/K)	0.01		
Grating Region Length (mm)	50		
Grating Type	Apodized		
Fibre Type	PMF/SMF		
Maximum Pump Power Through the Grating (W)	1		
FBG Length (m)	3 - 4 or As Requested		

\*<sup>①</sup>Centre wavelength  $\lambda_c$  are available as requested from 973nm to 976nm

\*<sup>②</sup>Peak reflectivity @  $\lambda_c$  are available as requested from 0.5% to 10%

\*<sup>③</sup>Reflectivity bandwidth(FWHM) are available as requested from 0.1nm to 1.0nm