

FIBER BRAGG GRATINGS (FBG)

APODIZED - CHIRPED FBG

ARTICLE GTL-FBG-ADG-820

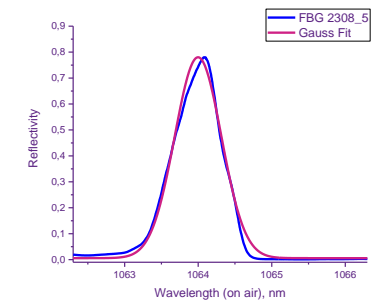
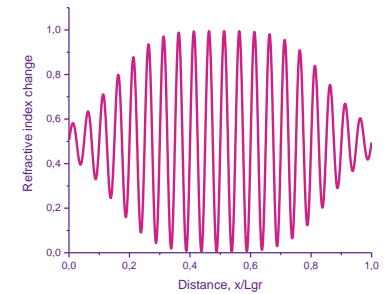
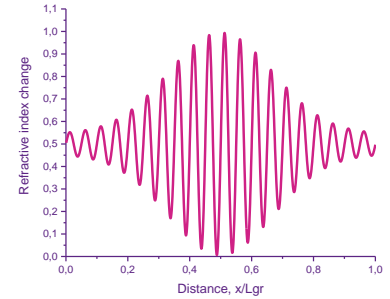
The apodized FBGs have special profile of induced refractive index modulation and grating strength along the grating length. Therefore, side lobes level becomes smaller in compared to ordinary gratings. There are a lot of apodization profiles which lead to the optimization of various FBG parameters such as strength, FWHM, SLSR, the value of dispersion. We are using several types of apodization profiles and functions: sine, Gauss, Semi Gauss and Super Gauss.

The simple one is “sine” type which saves the length of the gratings and provides SLSR around 20dB. Such function is optimal for save of the grating length and value of SLSR level.

The Gaussian type “Gauss” which ensures best SLSR value around -30dB. A lot of applications such as pulsed fiber lasers need special dispersion value and reflection spectrum of the FBG. Gaussian profile of apodization for chirped FBGs allows good results on these applications. The reflection spectrum of apodized chirped FBG with gaussian profile of reflection spectrum and profile of refractive index change along the FBG are presented on the graphs.

The “SuperGauss” apodization profiles are required for “Flat Top” reflection spectra of chirped FBGs. The “SuperGauss” profile of refractive index change along the FBG is presented on the picture.

Apodized FBGs are useful in sensing applications, signal and Brillouin scatter filtering and others.



FBG CHARACTERISTICS	GTL-FBG-ADG-820	TOLERANCE/NOTE
Wavelength range, nm	600 ÷ 2300	± 0.1 ÷ ± 1 custom request
Types of fiber	Single-Mode, PM, Double clad	or custom
Wavelength to quick order, nm	1069 Chirp rate: 2.9 nm/cm, 1081 Chirp rate: 1.02 nm/cm, 1529 Chirp rate: 19.96 nm/cm, 1875. Chirp rate: 4.08 nm/cm	± 0.1 ÷ ± 1 custom request
Reflectivity, %	5 ÷ 99	2 ÷ 5 custom request
Chirp Rate, nm/cm	0.01 ÷ 25	custom request
Bandwidth (WFHM), nm	0.5 ÷ 50	custom request
SLSR, dB	> 15	custom request
FBG Recoating	None, Acrylate, Polyimide	or custom
Tensile Strength, kpsi	> 100	

The configuration can be changed at the customer's request. The parameters specified in this specification can be changed in accordance with the terms of reference.