

Global (North America, Europe, Asia-Pacific, South America, Middle East and Africa) Fiber Bragg Grating (FBG) Market 2018, Forecast to 2023

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Abstracts

A fiber Bragg grating (FBG) is a type of distributed Bragg reflector constructed in a short segment of optical fiber that reflects particular wavelengths of light and transmits all others. This is achieved by adding a periodic variation to the refractive index of the fiber core, which generates a wavelength specific dielectric mirror. An FBG is an invisible reflector inside the core of the fiber that is set to a specific wavelength of light. When the fiber where the FBG is located is exposed to strain or temperature, the FBG's "center wavelength" shifts to a higher or lower wavelength. The direction and magnitude of the shift is proportional to the change in strain or temperature.

A fiber Bragg grating can therefore be used as an inline optical filter to block certain wavelengths, or as a wavelength-specific reflector. Fiber Bragg Gratings are made by laterally exposing the core of a single-mode fiber to a periodic pattern of intense ultraviolet light. The exposure produces a permanent increase in the refractive index of the fiber's core, creating a fixed index modulation according to the exposure pattern. This fixed index modulation is called a grating. At each periodic refraction change a small amount of light is reflected. All the reflected light signals combine coherently to one large reflection at a particular wavelength when the grating period is approximately half the input light's wavelength. This is referred to as the Bragg condition, and the wavelength at which this reflection occurs is called the Bragg wavelength. In a FBG, the refractive index of the core is periodically modulated along the fiber's main axis. The period of the modulation ranges typically from a few hundred nanometers to a few microns. When light is launched into a FBG, it experiences a certain amount of scattering at each grating plane. Most of the scattered light becomes more and more out-of-phase and eventually decays due to deconstructive interference. If the Bragg condition is satisfied for one of the colors of the input light, then a sharp reflected peak

is observed in the backward direction with a center wavelength determined by the grating's parameters.

Scope of the Report:

This report focuses on the Fiber Bragg Grating (FBG) in global market, especially in North America, Europe and Asia-Pacific, South America, Middle East and Africa. This report categorizes the market based on manufacturers, regions, type and application. The industry is not very high concentration, the key brand include Micron Optics, Proximion AB, HBM FiberSensing, ITF Technologies Inc, FBGS Technologies GmbH, Technica, iXFiber, Smart Fibres Limited, fos4x, Advanced Optics Solutions GmbH, Wuhan Ligong Guangke, TeraXion, FBG Korea, GEOPTEX bvba(FOS&S), Alnair Labs Corporation and so on.

The global Fiber Bragg Grating (FBG) market segmentation on the basis of type includes Fiber Bragg Grating Filter, Fiber Bragg Grating Sensors and Others. Fiber Bragg Grating Sensors are dominating the market with about 75% share in 2016. Significant and lasting barriers make entry into this market difficult. These barriers include, but are not limited to: (i) product development costs; (ii) capital requirements; (iii) intellectual property rights; (iv) regulatory requirement; and (v) Transitions' unfair methods of competition.

Despite the presence of competition problems, due to the global recovery trend is clear, investors are still optimistic about this area, the future will still have more new investment enter the field. Even so, the market is intensely competitive. The study group recommends the new entrants just having money but without technical advantage and upstream and downstream support do not to enter into this field.

The worldwide market for Fiber Bragg Grating (FBG) is expected to grow at a CAGR of roughly 25.3% over the next five years, will reach 2070 million US\$ in 2023, from 670 million US\$ in 2017, according to a new GIR (Global Info Research) study.

Market Segment by Manufacturers, this report covers

Micron Optics

Proximion AB

HBM FiberSensing

ITF Technologies Inc

FBGS Technologies GmbH

Technica

iXFiber

Smart Fibres Limited

fos4x

Advanced Optics Solutions GmbH

Wuhan Ligong Guangke

TeraXion

FBG Korea

GEOPTEX bvba (FOS&S)

Alnair Labs Corporation

Market Segment by Regions, regional analysis covers

North America (United States, Canada and Mexico)

Europe (Germany, France, UK, Russia and Italy)

Asia-Pacific (China, Japan, Korea, India and Southeast Asia)

South America (Brazil, Argentina, Colombia etc.)

Middle East and Africa (Saudi Arabia, UAE, Egypt, Nigeria and South Africa)

Market Segment by Type, covers

Fiber Bragg Grating Filter

Fiber Bragg Grating Sensors

Other

Market Segment by Applications, can be divided into

Optical Communication

Aerospace Applications

Energy industry

Transportation

Geo-Technical & Civil Engineering

Other

There are 15 Chapters to deeply display the global Fiber Bragg Grating (FBG) market. Chapter 1, to describe Fiber Bragg Grating (FBG) Introduction, product scope, market overview, market opportunities, market risk, market driving force; Chapter 2, to analyze the top manufacturers of Fiber Bragg Grating (FBG), with sales, revenue, and price of Fiber Bragg Grating (FBG), in 2016 and 2017; Chapter 3, to display the competitive situation among the top manufacturers, with sales, revenue and market share in 2016 and 2017; Chapter 4, to show the global market by regions, with sales, revenue and market share of Fiber Bragg Grating (FBG), for each region, from 2013 to 2018; Chapter 5, 6, 7, 8 and 9, to analyze the market by countries, by type, by application and by manufacturers, with sales, revenue and market share by key countries in these regions; Chapter 10 and 11, to show the market by type and application, with sales market share and growth rate by type, application, from 2013 to 2018; Chapter 12, Fiber Bragg Grating (FBG) market forecast, by regions, type and application, with sales and revenue, from 2018 to 2023; Chapter 13, 14 and 15, to describe Fiber Bragg Grating (FBG) sales channel,

distributors, traders, dealers, Research Findings and Conclusion, appendix and data source

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