

Global Fiber Bragg Grating (FBG) Market Research Report 2022 Professional Edition

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Abstracts

The global Fiber Bragg Grating (FBG) market was valued at 1244.27 Million USD in 2021 and will grow with a CAGR of 25.98% from 2021 to 2027, based on HNY Research newly published report.

The prime objective of this report is to provide the insights on the post COVID-19 impact which will help market players in this field evaluate their business approaches. Also, this report covers market segmentation by major market vendors, types, applications/end users and geography(North America, East Asia, Europe, South Asia, Southeast Asia, Middle East, Africa, Oceania, South America).

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. 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. North America is the largest consumption place, with a consumption market share nearly 32%. Following North America, Europe is the second largest consumption place with the consumption market share of 28%.

By Market Vendors:

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

By Types:

Fiber Bragg Grating Filter

Fiber Bragg Grating Sensors

By Applications:

Optical Communication

Aerospace Applications

Energy Industry

Transportation

Geo-Technical & Civil Engineering

Key Indicators Analysed

Market Players & Competitor Analysis: The report covers the key players of the industry including Company Profile, Product Specifications, Production Capacity/Sales, Revenue, Price and Gross Margin 2016-2027 & Sales with a thorough analysis of the market's competitive landscape and detailed information on vendors and comprehensive details of factors that will challenge the growth of major market vendors.

Global and Regional Market Analysis: The report includes Global & Regional market status and outlook 2016-2027. Further the report provides break down details about each region & countries covered in the report. Identifying its sales, sales volume &

revenue forecast. With detailed analysis by types and applications.

Market Trends: Market key trends which include Increased Competition and Continuous Innovations.

Opportunities and Drivers: Identifying the Growing Demands and New Technology

Porters Five Force Analysis: The report provides with the state of competition in industry depending on five basic forces: threat of new entrants, bargaining power of suppliers, bargaining power of buyers, threat of substitute products or services, and existing industry rivalry.

Key Reasons to Purchase

To gain insightful analyses of the market and have comprehensive understanding of the global market and its commercial landscape.

Assess the production processes, major issues, and solutions to mitigate the development risk.

To understand the most affecting driving and restraining forces in the market and its impact in the global market.

Learn about the market strategies that are being adopted by leading respective organizations.

To understand the future outlook and prospects for the market.

Besides the standard structure reports, we also provide custom research according to specific requirements

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Fiber Bragg Grating (FBG) Report Years Considered

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