

# Fiber Bragg Grating (FBG) Market in Germany - Manufacturing and Consumption, Outlook and Forecast 2020-2026

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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.

This report contains market size and forecasts of Fiber Bragg Grating (FBG) in Germany, including the following market information:

Germany Fiber Bragg Grating (FBG) Market Revenue, 2015-2020, 2021-2026, (\$ millions)

Germany Fiber Bragg Grating (FBG) Market Consumption, 2015-2020, 2021-2026, (K Units)

Germany Fiber Bragg Grating (FBG) Production Capacity, 2015-2020, 2021-2026, (K Units)

Top Five Competitors in Germany Fiber Bragg Grating (FBG) Market 2019 (%)

The global Fiber Bragg Grating (FBG) market was valued at 1085.7 million in 2019 and is projected to reach US\$ 2505.8 million by 2026, at a CAGR of 23.3% during the forecast period. While the Fiber Bragg Grating (FBG) market size in Germany was US\$ XX million in 2019, and it is expected to reach US\$ XX million by the end of 2026, with a CAGR of XX% during 2020-2026.

MARKET MONITOR GLOBAL, INC (MMG) has surveyed the Fiber Bragg Grating (FBG) manufacturers, suppliers, distributors and industry experts on the impacts of the COVID-19 pandemic on businesses, with top challenges including ingredients and raw material delays, component and packaging shortages, reduced/cancelled orders from clients and consumers, and closures of production lines in some impacted areas.

This report also analyses and evaluates the COVID-19 impact on Fiber Bragg Grating (FBG) production and consumption in Germany

Total Market by Segment:

Germany Fiber Bragg Grating (FBG) Market, By Type, 2015-2020, 2021-2026 (\$ millions) & (K Units)

Germany Fiber Bragg Grating (FBG) Market Segment Percentages, By Type, 2019 (%)

Fiber Bragg Grating Filter

Fiber Bragg Grating Sensors

Other

Germany Fiber Bragg Grating (FBG) Market, By Application, 2015-2020, 2021-2026 (\$ millions) & (K Units)

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Optical Communication

Aerospace Applications

Energy industry

Transportation

Geo-Technical & Civil Engineering

Other

## Competitor Analysis

The report also provides analysis of leading market participants including:

Total Fiber Bragg Grating (FBG) Market Competitors Revenues in Germany, by Players 2015-2020 (Estimated), (\$ millions)

Total Fiber Bragg Grating (FBG) Market Competitors Revenues Share in Germany, by Players 2019 (%)

Total Germany Fiber Bragg Grating (FBG) Market Competitors Sales, by Players 2015-2020 (Estimated), (K Units)

Total Germany Fiber Bragg Grating (FBG) Market Competitors Sales Market Share by Players 2019 (\$ millions)

Further, the report presents profiles of competitors in the market, including the following:

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)

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