

# Fiber Bragg Grating (FBG) Market in Japan - 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 Japan, including the following market information:

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

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

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

Top Five Competitors in Japan 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 Japan 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 Japan

Total Market by Segment:

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

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

Fiber Bragg Grating Filter

Fiber Bragg Grating Sensors

Other

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

Japan Fiber Bragg Grating (FBG) Market Segment Percentages, By Application, 2019 (%)

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 Japan, by Players 2015-2020 (Estimated), (\$ millions)

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

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

Total Japan 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)

## Contents

### **1 INTRODUCTION TO RESEARCH & ANALYSIS REPORTS**

- 1.1 Fiber Bragg Grating (FBG) Market Definition
- 1.2 Market Segments
  - 1.2.1 Segment by Type
  - 1.2.2 Segment by Application
- 1.3 Japan Fiber Bragg Grating (FBG) Market Overview
- 1.4 Features & Benefits of This Report
- 1.5 Methodology & Sources of Information
  - 1.5.1 Research Methodology
  - 1.5.2 Research Process
  - 1.5.3 Base Year
  - 1.5.4 Report Assumptions & Caveats

### **2 COVID-19 IMPACT: JAPAN FIBER BRAGG GRATING (FBG) OVERALL MARKET SIZE**

- 2.1 Japan Fiber Bragg Grating (FBG) Market Size: 2020 VS 2026
- 2.2 Japan Fiber Bragg Grating (FBG) Revenue, Prospects & Forecasts: 2015-2026
- 2.3 Japan Fiber Bragg Grating (FBG) Sales (Consumption): 2015-2026

### **3 COMPANY LANDSCAPE**

- 3.1 Top Fiber Bragg Grating (FBG) Players in Japan (including Foreign and Local Companies)
- 3.2 Top Japan Fiber Bragg Grating (FBG) Companies Ranked by Revenue
- 3.3 Japan Fiber Bragg Grating (FBG) Revenue by Companies (including Foreign and Local Companies)
- 3.4 Japan Fiber Bragg Grating (FBG) Sales by Companies (including Foreign and Local Companies)
- 3.5 Japan Fiber Bragg Grating (FBG) Price by Manufacturer (2015-2020)
- 3.6 Top 3 and Top 5 Fiber Bragg Grating (FBG) Companies in Japan, by Revenue in 2019
- 3.7 Japan Manufacturers Fiber Bragg Grating (FBG) Product Type
- 3.8 Tier 1, Tier 2 and Tier 3 Fiber Bragg Grating (FBG) Players in Japan
  - 3.8.1 List of Japan Tier 1 Fiber Bragg Grating (FBG) Companies
  - 3.8.2 List of Japan Tier 2 and Tier 3 Fiber Bragg Grating (FBG) Companies

## **4 SIGHTS BY PRODUCT**

### 4.1 Overview

- 4.1.1 By Type - Japan Fiber Bragg Grating (FBG) Market Size Markets, 2020 & 2026
- 4.1.2 Fiber Bragg Grating Filter
- 4.1.3 Fiber Bragg Grating Sensors
- 4.1.4 Other

### 4.2 By Type - Japan Fiber Bragg Grating (FBG) Revenue & Forecasts

- 4.2.1 By Type - Japan Fiber Bragg Grating (FBG) Revenue, 2015-2020
- 4.2.2 By Type - Japan Fiber Bragg Grating (FBG) Revenue, 2021-2026
- 4.2.3 By Type - Japan Fiber Bragg Grating (FBG) Revenue Market Share, 2015-2026

### 4.3 By Type - Japan Fiber Bragg Grating (FBG) Sales & Forecasts

- 4.3.1 By Type - Japan Fiber Bragg Grating (FBG) Sales, 2015-2020
- 4.3.2 By Type - Japan Fiber Bragg Grating (FBG) Sales, 2021-2026
- 4.3.3 By Type - Japan Fiber Bragg Grating (FBG) Sales Market Share, 2015-2026

### 4.4 By Type - Japan Fiber Bragg Grating (FBG) Price (Manufacturers Selling Prices), 2015-2026

## **5 SIGHTS BY APPLICATION**

### 5.1 Overview

- 5.1.1 By Application - Japan Fiber Bragg Grating (FBG) Market Size, 2020 & 2026
- 5.1.2 Optical Communication
- 5.1.3 Aerospace Applications
- 5.1.4 Energy industry
- 5.1.5 Transportation
- 5.1.6 Geo-Technical & Civil Engineering
- 5.1.7 Other

### 5.2 By Application - Japan Fiber Bragg Grating (FBG) Revenue & Forecasts

- 5.2.1 By Application - Japan Fiber Bragg Grating (FBG) Revenue, 2015-2020
- 5.2.2 By Application - Japan Fiber Bragg Grating (FBG) Revenue, 2021-2026
- 5.2.3 By Application - Japan Fiber Bragg Grating (FBG) Revenue Market Share, 2015-2026

### 5.3 By Application - Japan Fiber Bragg Grating (FBG) Sales & Forecasts

- 5.3.1 By Application - Japan Fiber Bragg Grating (FBG) Sales, 2015-2020
- 5.3.2 By Application - Japan Fiber Bragg Grating (FBG) Sales, 2021-2026
- 5.3.3 By Application - Japan Fiber Bragg Grating (FBG) Sales Market Share, 2015-2026

## 5.4 By Application - Japan Fiber Bragg Grating (FBG) Price (Manufacturers Selling Prices), 2015-2026

### **6 MANUFACTURERS & BRANDS PROFILES**

#### 6.1 Micron Optics

- 6.1.1 Micron Optics Corporate Summary
- 6.1.2 Micron Optics Business Overview
- 6.1.3 Micron Optics Fiber Bragg Grating (FBG) Major Product Offerings
- 6.1.4 Micron Optics Sales and Revenue in Japan (2015-2020)
- 6.1.5 Micron Optics Key News

#### 6.2 Proximion AB

- 6.2.1 Proximion AB Corporate Summary
- 6.2.2 Proximion AB Business Overview
- 6.2.3 Proximion AB Fiber Bragg Grating (FBG) Major Product Offerings
- 6.2.4 Proximion AB Sales and Revenue in Japan (2015-2020)
- 6.2.5 Proximion AB Key News

#### 6.3 HBM FiberSensing

- 6.3.1 HBM FiberSensing Corporate Summary
- 6.3.2 HBM FiberSensing Business Overview
- 6.3.3 HBM FiberSensing Fiber Bragg Grating (FBG) Major Product Offerings
- 6.3.4 HBM FiberSensing Sales and Revenue in Japan (2015-2020)
- 6.3.5 HBM FiberSensing Key News

#### 6.4 ITF Technologies Inc

- 6.4.1 ITF Technologies Inc Corporate Summary
- 6.4.2 ITF Technologies Inc Business Overview
- 6.4.3 ITF Technologies Inc Fiber Bragg Grating (FBG) Major Product Offerings
- 6.4.4 ITF Technologies Inc Sales and Revenue in Japan (2015-2020)
- 6.4.5 ITF Technologies Inc Key News

#### 6.5 FBGS Technologies GmbH

- 6.5.1 FBGS Technologies GmbH Corporate Summary
- 6.5.2 FBGS Technologies GmbH Business Overview
- 6.5.3 FBGS Technologies GmbH Fiber Bragg Grating (FBG) Major Product Offerings
- 6.5.4 FBGS Technologies GmbH Sales and Revenue in Japan (2015-2020)
- 6.5.5 FBGS Technologies GmbH Key News

#### 6.6 Technica

- 6.6.1 Technica Corporate Summary
- 6.6.2 Technica Business Overview
- 6.6.3 Technica Fiber Bragg Grating (FBG) Major Product Offerings

- 6.6.4 Technica Sales and Revenue in Japan (2015-2020)
- 6.6.5 Technica Key News
- 6.7 iXFiber
  - 6.6.1 iXFiber Corporate Summary
  - 6.6.2 iXFiber Business Overview
  - 6.6.3 iXFiber Fiber Bragg Grating (FBG) Major Product Offerings
  - 6.4.4 iXFiber Sales and Revenue in Japan (2015-2020)
  - 6.7.5 iXFiber Key News
- 6.8 Smart Fibres Limited
  - 6.8.1 Smart Fibres Limited Corporate Summary
  - 6.8.2 Smart Fibres Limited Business Overview
  - 6.8.3 Smart Fibres Limited Fiber Bragg Grating (FBG) Major Product Offerings
  - 6.8.4 Smart Fibres Limited Sales and Revenue in Japan (2015-2020)
  - 6.8.5 Smart Fibres Limited Key News
- 6.9 fos4x
  - 6.9.1 fos4x Corporate Summary
  - 6.9.2 fos4x Business Overview
  - 6.9.3 fos4x Fiber Bragg Grating (FBG) Major Product Offerings
  - 6.9.4 fos4x Sales and Revenue in Japan (2015-2020)
  - 6.9.5 fos4x Key News
- 6.10 Advanced Optics Solutions GmbH
  - 6.10.1 Advanced Optics Solutions GmbH Corporate Summary
  - 6.10.2 Advanced Optics Solutions GmbH Business Overview
  - 6.10.3 Advanced Optics Solutions GmbH Fiber Bragg Grating (FBG) Major Product Offerings
  - 6.10.4 Advanced Optics Solutions GmbH Sales and Revenue in Japan (2015-2020)
  - 6.10.5 Advanced Optics Solutions GmbH Key News
- 6.11 Wuhan Ligong Guangke
  - 6.11.1 Wuhan Ligong Guangke Corporate Summary
  - 6.11.2 Wuhan Ligong Guangke Fiber Bragg Grating (FBG) Business Overview
  - 6.11.3 Wuhan Ligong Guangke Fiber Bragg Grating (FBG) Major Product Offerings
  - 6.11.4 Wuhan Ligong Guangke Sales and Revenue in Japan (2015-2020)
  - 6.11.5 Wuhan Ligong Guangke Key News
- 6.12 TeraXion
  - 6.12.1 TeraXion Corporate Summary
  - 6.12.2 TeraXion Fiber Bragg Grating (FBG) Business Overview
  - 6.12.3 TeraXion Fiber Bragg Grating (FBG) Major Product Offerings
  - 6.12.4 TeraXion Sales and Revenue in Japan (2015-2020)
  - 6.12.5 TeraXion Key News



## 6.13 FBG Korea

6.13.1 FBG Korea Corporate Summary

6.13.2 FBG Korea Fiber Bragg Grating (FBG) Business Overview

6.13.3 FBG Korea Fiber Bragg Grating (FBG) Major Product Offerings

6.13.4 FBG Korea Sales and Revenue in Japan (2015-2020)

6.13.5 FBG Korea Key News

## 6.14 GEOPTEX bvba (FOS&S)

6.14.1 GEOPTEX bvba (FOS&S) Corporate Summary

6.14.2 GEOPTEX bvba (FOS&S) Fiber Bragg Grating (FBG) Business Overview

6.14.3 GEOPTEX bvba (FOS&S) Fiber Bragg Grating (FBG) Major Product Offerings

6.14.4 GEOPTEX bvba (FOS&S) Sales and Revenue in Japan (2015-2020)

6.14.5 GEOPTEX bvba (FOS&S) Key News

## 6.15 Alnair Labs Corporation

6.15.1 Alnair Labs Corporation Corporate Summary

6.15.2 Alnair Labs Corporation Fiber Bragg Grating (FBG) Business Overview

6.15.3 Alnair Labs Corporation Fiber Bragg Grating (FBG) Major Product Offerings

6.15.4 Alnair Labs Corporation Sales and Revenue in Japan (2015-2020)

6.15.5 Alnair Labs Corporation Key News

## **7 FIBER BRAGG GRATING (FBG) PRODUCTION CAPACITY, EXPORT AND IMPORT ANALYSIS**

### 7.1 Fiber Bragg Grating (FBG) Production Capacity and Value in Japan, Situation Analysis and Prediction, 2015-2026

7.1.1 Japan Fiber Bragg Grating (FBG) Production Capacity, 2015-2026

7.1.2 Japan Fiber Bragg Grating (FBG) Production 2015-2026

7.1.3 Japan Fiber Bragg Grating (FBG) Production Value 2015-2026

### 7.2 Key Local Fiber Bragg Grating (FBG) Manufacturers in Japan

7.2.1 Japan Key Local Fiber Bragg Grating (FBG) Manufacturers Production Capacity

7.2.2 Japan Key Local Fiber Bragg Grating (FBG) Manufacturers Production

7.2.3 Japan Key Local Fiber Bragg Grating (FBG) Manufacturers Production Value

7.2.4 The Proportion of Fiber Bragg Grating (FBG) Production Sold in Japan and Sold Other Than Japan by Manufacturers

### 7.3 Fiber Bragg Grating (FBG) Export and Import in Japan

7.3.1 Japan Fiber Bragg Grating (FBG) Export Market

7.3.2 Japan Fiber Bragg Grating (FBG) Source of Imports

## **8 COVID-19 IMPACT: KEY MARKET TRENDS, OPPORTUNITY, DRIVERS AND RESTRAINTS**

8.1 PESTLE Analysis for Japan Fiber Bragg Grating (FBG) Market

8.2 Market Opportunities & Trends

8.3 Market Drivers

8.4 Market Restraints

## **9 COVID-19 IMPACT ON FIBER BRAGG GRATING (FBG) SUPPLY CHAIN ANALYSIS**

9.1 Supply Chain Analysis

9.2 Upstream Market Analysis

9.3 Downstream and Clients Market Analysis

9.4 Marketing Channels Analysis

9.4.1 Marketing Channels

9.4.2 Fiber Bragg Grating (FBG) Distributors and Sales Agents in Japan

## **10 CONCLUSION**

## **11 APPENDIX**

11.1 Note

11.2 Examples of Clients

11.3 Disclaimer

## List Of Tables

### LIST OF TABLES

Table 1. Key Players of Fiber Bragg Grating (FBG) in Japan

Table 2. Top Players in Japan, Ranking by Revenue (2019)

Table 3. Japan Fiber Bragg Grating (FBG) Revenue by Companies, (US\$, Mn), 2015-2020

Table 4. Japan Fiber Bragg Grating (FBG) Revenue Share by Companies, 2015-2020

Table 5. Japan Fiber Bragg Grating (FBG) Sales by Companies, (K Units), 2015-2020

Table 6. Japan Fiber Bragg Grating (FBG) Sales Share by Companies, 2015-2020

Table 7. Key Manufacturers Fiber Bragg Grating (FBG) Price (2015-2020) (USD/Unit)

Table 8. Japan Manufacturers Fiber Bragg Grating (FBG) Product Type

Table 9. List of Japan Tier 1 Fiber Bragg Grating (FBG) Companies, Revenue (US\$, Mn) in 2019 and Market Share

Table 10. List of Japan Tier 2 and Tier 3 Fiber Bragg Grating (FBG) Companies, Revenue (US\$, Mn) in 2019 and Market Share

Table 11. By Type - Fiber Bragg Grating (FBG) Revenue in Japan (US\$, Mn), 2015-2020

Table 12. By Type - Fiber Bragg Grating (FBG) Revenue in Japan (US\$, Mn), 2021-2026

Table 13. By Type - Fiber Bragg Grating (FBG) Sales in Japan (K Units), 2015-2020

Table 14. By Type - Fiber Bragg Grating (FBG) Sales in Japan (K Units), 2021-2026

Table 15. By Application - Fiber Bragg Grating (FBG) Revenue in Japan, (US\$, Mn), 2015-2020

Table 16. By Application - Fiber Bragg Grating (FBG) Revenue in Japan, (US\$, Mn), 2021-2026

Table 17. By Application - Fiber Bragg Grating (FBG) Sales in Japan, (K Units), 2015-2020

Table 18. By Application - Fiber Bragg Grating (FBG) Sales in Japan, (K Units), 2021-2026

Table 19. Micron Optics Corporate Summary

Table 20. Micron Optics Fiber Bragg Grating (FBG) Product Offerings

Table 21. Micron Optics Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)

Table 22. Proximion AB Corporate Summary

Table 23. Proximion AB Fiber Bragg Grating (FBG) Product Offerings

Table 24. Proximion AB Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)

- Table 25. HBM FiberSensing Corporate Summary
- Table 26. HBM FiberSensing Fiber Bragg Grating (FBG) Product Offerings
- Table 27. HBM FiberSensing Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 28. ITF Technologies Inc Corporate Summary
- Table 29. ITF Technologies Inc Fiber Bragg Grating (FBG) Product Offerings
- Table 30. ITF Technologies Inc Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 31. FBGS Technologies GmbH Corporate Summary
- Table 32. FBGS Technologies GmbH Fiber Bragg Grating (FBG) Product Offerings
- Table 33. FBGS Technologies GmbH Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 34. Technica Corporate Summary
- Table 35. Technica Fiber Bragg Grating (FBG) Product Offerings
- Table 36. Technica Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 37. iXFiber Corporate Summary
- Table 38. iXFiber Fiber Bragg Grating (FBG) Product Offerings
- Table 39. iXFiber Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 40. Smart Fibres Limited Corporate Summary
- Table 41. Smart Fibres Limited Fiber Bragg Grating (FBG) Product Offerings
- Table 42. Smart Fibres Limited Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 43. fos4x Corporate Summary
- Table 44. fos4x Fiber Bragg Grating (FBG) Product Offerings
- Table 45. fos4x Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 46. Advanced Optics Solutions GmbH Corporate Summary
- Table 47. Advanced Optics Solutions GmbH Fiber Bragg Grating (FBG) Product Offerings
- Table 48. Advanced Optics Solutions GmbH Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 49. Wuhan Ligong Guangke Corporate Summary
- Table 50. Wuhan Ligong Guangke Fiber Bragg Grating (FBG) Product Offerings
- Table 51. Wuhan Ligong Guangke Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)
- Table 52. TeraXion Corporate Summary
- Table 53. TeraXion Fiber Bragg Grating (FBG) Product Offerings

Table 54. TeraXion Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)

Table 55. FBG Korea Corporate Summary

Table 56. FBG Korea Fiber Bragg Grating (FBG) Product Offerings

Table 57. FBG Korea Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)

Table 58. GEOPTEX bvba (FOS&S) Corporate Summary

Table 59. GEOPTEX bvba (FOS&S) Fiber Bragg Grating (FBG) Product Offerings

Table 60. GEOPTEX bvba (FOS&S) Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)

Table 61. Alnair Labs Corporation Corporate Summary

Table 62. Alnair Labs Corporation Fiber Bragg Grating (FBG) Product Offerings

Table 63. Alnair Labs Corporation Fiber Bragg Grating (FBG) Sales (K Units), Revenue (US\$, Mn) and Average Price (USD/Unit) (2015-2020)

Table 64. Fiber Bragg Grating (FBG) Production Capacity (K Units) of Local Manufacturers in Japan, 2015-2020

Table 65. Fiber Bragg Grating (FBG) Production (K Units) of Local Manufacturers in Japan, 2015-2020

Table 66. Japan Fiber Bragg Grating (FBG) Production Market Share of Local Manufacturers, 2015-2020

Table 67. Fiber Bragg Grating (FBG) Production Value (US\$, Mn) of Local Manufacturers in Japan, 2015-2020

Table 68. Japan Fiber Bragg Grating (FBG) Production Value Market Share of Local Manufacturers, 2015-2020

Table 69. The Percentage of Fiber Bragg Grating (FBG) Production Sold in Japan and Sold Other Than Japan by Manufacturers

Table 70. The Percentage of Fiber Bragg Grating (FBG) Production Sold in Japan and Sold Other Than Japan by Manufacturers

Table 71. Dangeguojia Fiber Bragg Grating (FBG) Sales (Consumption), Production, Export and Import, 2015-2020

Table 72. Raw Materials and Suppliers

Table 73. Fiber Bragg Grating (FBG) Downstream Clients in Japan

Table 74. Fiber Bragg Grating (FBG) Distributors and Sales Agents in Japan

## List Of Figures

### LIST OF FIGURES

- Figure 1. Fiber Bragg Grating (FBG) Segment by Type
- Figure 2. Fiber Bragg Grating (FBG) Segment by Application
- Figure 3. Dangeguojia Fiber Bragg Grating (FBG) Market Overview: 2020
- Figure 4. Key Caveats
- Figure 5. Fiber Bragg Grating (FBG) Market Size in Japan, (US\$, Mn) & (K Units): 2020 VS 2026
- Figure 6. Japan Fiber Bragg Grating (FBG) Revenue, 2015-2026 (US\$, Mn)
- Figure 7. Fiber Bragg Grating (FBG) Sales in Japan: 2015-2026 (K Units)
- Figure 8. The Top 3 and 5 Players Market Share by Fiber Bragg Grating (FBG) Revenue in 2019
- Figure 9. By Type - Japan Fiber Bragg Grating (FBG) Incremental Growth, (US\$, Mn), 2015-2026
- Figure 10. By Type - Japan Fiber Bragg Grating (FBG) Market Share, 2015-2020
- Figure 11. By Type - Japan Fiber Bragg Grating (FBG) Market Share, 2020-2026
- Figure 12. By Type - Japan Fiber Bragg Grating (FBG) Price (USD/Unit), 2015-2026
- Figure 13. By Application - Fiber Bragg Grating (FBG) Revenue in Japan (US\$, Mn), 2020 & 2026
- Figure 14. By Application - Japan Fiber Bragg Grating (FBG) Market Share, 2015-2020
- Figure 15. By Application - Japan Fiber Bragg Grating (FBG) Market Share, 2020-2026
- Figure 16. By Application -Japan Fiber Bragg Grating (FBG) Price (USD/Unit), 2015-2026
- Figure 17. Japan Fiber Bragg Grating (FBG) Production Capacity (K Units), 2015-2026
- Figure 18. Japan Fiber Bragg Grating (FBG) Actual Output (K Units), 2015-2026
- Figure 19. Japan Fiber Bragg Grating (FBG) Production Value (US\$, Mn), 2015-2026
- Figure 20. The Percentage of Japan Fiber Bragg Grating (FBG) Export Destination, 2019
- Figure 21. The Source of Imports of Japan Fiber Bragg Grating (FBG), 2019
- Figure 22. PEST Analysis for Japan Fiber Bragg Grating (FBG) Market in 2020
- Figure 23. Fiber Bragg Grating (FBG) Market Opportunities & Trends in Japan
- Figure 24. Fiber Bragg Grating (FBG) Market Drivers in Japan
- Figure 25. Fiber Bragg Grating (FBG) Market Restraints in Japan
- Figure 26. Fiber Bragg Grating (FBG) Industry Value Chain

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