

Medical Fiber Optics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Medical Fiber Optics Market size is estimated at USD 1.42 billion in 2025, and is expected to reach USD 1.93 billion by 2030, at a CAGR of 6.4% during the forecast period (2025-2030).

The initial phase of the pandemic had a substantial impact on the market studied. The significant decline in volumes of surgical treatments, especially medical imaging technologies, impacted the demand and supply chain of medical fiber optics in the early phase of the pandemic. For instance, according to the study published in August 2022, the quaternary care facility successfully dealt with the COVID-19 pandemic's pressures by significantly reducing the number of surgical procedures performed during the peak of the pandemic. Therefore, owing to the aforementioned factors, initially, the COVID-19 pandemic has slowed down the market growth due to the decline and reduced number of surgical and endoscopic procedures. However, with the released restrictions and resumed hospitals and surgical departments, the number of elective surgical procedures has increased globally, which in turn has boosted the demand for medical fiber optics-related devices.

Factors such as the rising prevalence of chronic diseases worldwide, growing preference for minimally invasive surgery, and a surge in the adoption of laser technology are anticipated to drive the medical fiber optics market over the forecast period. The increasing burden of cancer among the population raises the demand for endoscopic microscopes capable of producing high-resolution, sub-cellular images of tissue in real time. These fiber-optic endoscopes enable clinicians to detect and diagnose cancer at its early stages. For instance, according to the American Cancer Society 2023 report, an estimated 26,380 new cases of stomach cancer were diagnosed in the United States in 2022, and 26,500 new stomach cancer cases are estimated to be diagnosed in 2023. Thus, the high burden of cancer in the country creates the demand for effective diagnosis and surgical procedures, which require an endoscope that uses fiber optics, thereby boosting the market growth.

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Additionally, the emergence of laser technology, such as laser angioplasty and endovenous laser ablation, along with fiber optics, has promoted the development of intravascular imaging and treatment. As per an article published in Aging and Disease in February 2022, it has been observed that the combined use of laser technology and fiber optics provides a flexible tool for imaging arterial and venous diseases as well as ensures high safety in the treatment of intravascular arteriovenous diseases. Moreover, technological advancement in fiber optic-based devices is likely to increase the demand for fiber optics, contributing to market growth. For instance, in July 2022, Amphenol Corporation launched Amphe-Lite fiber optic termini. It is a fiber optic interconnection that transmits an optical laser with high speed and reliability. Such launch of new products is also expected to boost the growth of the market over the forecast period.

Hence, the growing burden of chronic diseases and the surge in the adoption of laser technology coupled with product launches is expected to boost the market over the forecast period. However, the high cost of medical fiber optics and the low adoption rate in emerging and underdeveloped countries will likely limit market expansion.

Medical Fiber Optics Market Trends

Endoscopic Imaging Segment is Expected to Garner a Significant Growth Over the Forecast Period

- Endoscopes are also known as fiberscopes. It consists of a rigid or flexible tube to which a lamp and a camera are attached. Fiber optics during endoscopic imaging helps doctors and other professionals look into the passageways of the human body. The use of fiber optics in endoscopy has revolutionized the field of medical imaging, making it easier to diagnose and treat many medical conditions. The light passes through the core, surrounded by a transparent cladding material with a lower index of refraction, in fiber optics. The principle of total internal reflection governs the way light is transmitted by fiber optics.
- Factors such as the high number of endoscopic procedures performed across the world, the launch of endoscopes with patented technology optical fibers, and research studies are largely contributing to the growth of the endoscopic imaging segment of the studied market. The research studies demonstrating the advantages of fiber optics in endoscopic imaging are expected to contribute to the increasing adoption of fiber optics in endoscopic imaging and the development of such products and hence can bolster the growth of the market segment. For instance, the article published in the Multidisciplinary Digital Publishing Institute (MDPI) Journal in May 2022 reported that fiber optics in endoscopy has several advantages, such as fiber endoscopes having less thickness and high flexibility. It can be used to image very small anatomies, for example, in bronchoscopy or the upper urinary tract. Such advantages offered by fiber endoscopes may result in high adoption of it for specific purposes and thus propel the growth of the market segment.
- The launch of new endoscopes by the market players with innovative medical fiber optics technology is also expected to contribute to the growth of the market segment. For instance, in July 2022, Zsquare received United States Food and Drug Administration 510K clearance to market one of its first products, the Zsquare ENT-Flex Rhinolaryngoscope. The company product has a patent on Polymeric Imaging Fibre, which is breaking down the miniaturization of visual fiber optics. Its flexible, thin nature enables smaller endoscopes to access previously unreachable anatomical sites without compromising image quality. Such launches of innovative products are expected to boost the growth of the market segment.
- Thus, owing to the abovementioned factors, such as the advantages offered by fiber optics, the adoption of innovative medical fiber optics by endoscope developments, and the high demand for endoscopic procedures, the endoscopic imaging segment is expected to project significant growth over the forecast period.

North America is Expected to Hold a Significant Market Share Over the Forecast Period

- North America is anticipated to hold a significant market share over the forecast period owing to the rising prevalence of chronic

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diseases, increasing demand for endoscopy procedures, and growing awareness about minimally invasive treatments.

- A high burden of cancer cases in Canada is one of the leading reasons for the adoption of endoscope imaging for diagnosis and treatment, which is likely to boost the demand for optical fiber. For instance, according to the Canadian Cancer Society (CCS) 2022 report published in November 2022, stomach cancer is responsible for one of the highest healthcare burdens in Canada, and the incidence of stomach cancer was 4,100 in 2022. Thus, due to the high burden of cancer, the demand for advanced cancer treatment procedures with higher accuracy is increasing in the country, which is expected to boost market growth over the forecast period.
- Moreover, the growing burden of gastric diseases such as ulcerative colitis and Crohn's disease is expected to increase demand for diagnosis devices that use optical fiber, thereby boosting market growth. For instance, in the Crohn's and Colitis Canada Report published in June 2023, inflammatory bowel diseases are increasing in Canada, and about 322,600 people will be diagnosed in 2023; by 2035, this number is projected to increase to 470,000. Hence, the growing burden of GI tract diseases is expected to boost the demand for endoscopic procedures, thereby contributing to market growth.
- Further, the key players focusing on developing and expanding their medical fiber optics portfolio are expected to positively impact the market growth in North America. For instance, in April 2022, Honeywell expanded its Spectra Medical Grade (MG) Biofiber portfolio with a blue-hued fiber that provides a strong visual aid to distinguish between multiple suture sets in complex surgeries. This enables healthcare professionals to operate more accurately by creating clear color contrast and can lead to greater safety and comfort for patients.
- Thus, the rising incidence of chronic diseases and the presence of key players are increasing the demand for medical fiber optics in North America, and the region is expected to witness growth during the forecast period.

Medical Fiber Optics Industry Overview

The medical fiber optics market is moderately competitive with the presence of many players. The market players are adopting various strategies such as product launches, mergers and acquisitions, and partnerships to stay competitive in the market. Some of the key players in the studied market are Coherent Corp., SCHOTT AG, FiberopticsTechnology, Inc., and MKS Instruments (Newport Corporation) among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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