

North America Optical Imaging Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The North American optical imaging market is expected to register a CAGR of 10.2% during the forecast period. The increased demand for non-invasive procedures, particularly among the elderly, is likely to drive the market.

Key Highlights

Optical imaging is gaining popularity as it employs non-ionizing radiation, such as visible, ultraviolet, and infrared light, which considerably minimizes patient exposure to hazardous radiation. Optical imaging can be used for repeated procedures to monitor the progression of a disease or the results of treatment, as it is far safer than techniques that employ ionizing radiation, such as X-rays.

The region is also witnessing a rise in investments, R&D activities, and technological advancements in the life sciences sector. For instance, in February 2022, BTR (Boston Technology Research) and SaMD announced raising USD 15 million in a Series A funding round.

The funding would ensure that customers are prepared for the FDA's anticipated guidance to incentivize a move from traditional methods to new technologies. Such developments are likely to boost the growth of the market studied by accelerating the adoption of new technologies like optical imaging.

Additionally, in January 2021, CARB-X awarded USD 578,000 to Accelerate Diagnostics, a USA-based biotech company, for developing new fiber optic technology to diagnose sepsis or the risk of sepsis.

Further, optical imaging is beneficial for determining various soft tissue properties. As different soft tissues absorb and scatter light differently, optical imaging can detect metabolic abnormalities that are early indicators of abnormal organ and tissue functioning. Optical imaging can be combined with other imaging techniques to provide more information to clinicians and researchers working on complex experiments. Such advantages provided by optical imaging are expected to fuel the growth of the market studied.

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However, due to the COVID-19 pandemic, medical practices of all sizes were under tremendous strain as healthcare facilities in the region were overwhelmed by the large number of patients who visited them daily. The pandemic also increased the need for physicians and other healthcare professionals to maintain social distancing. Due to the pandemic, many imaging and diagnostic departments saw a sharp decline in optical imaging case volumes. Additionally, stringent regulatory approval procedures, hefty instrument costs, a scarcity of qualified operators, and insufficient reimbursements for optical imaging procedures hinder the growth of the market studied.

North America Optical Imaging Market Trends

Optical Imaging in Oncology is Expected to Witness Significant Growth

According to National Cancer Institute, the most common cancers in the United States (listed in descending order) are breast cancer, lung and bronchus cancer, prostate cancer, colon and rectum cancer, melanoma of the skin, bladder cancer, non-Hodgkin lymphoma, kidney and renal pelvis cancer, endometrial cancer, leukemia, pancreatic cancer, thyroid cancer, and liver cancer. Additionally, researchers at Purdue University in Indiana, North America, developed equipment that uses optical imaging to assist surgeons in better mapping out bodily malignancies and understanding how specific diseases affect brain activity. The light becomes greatly dispersed during fluorescence imaging, limiting the amount of information a surgeon can obtain. Purdue technology solves this problem. This technique gives surgeons more precise information about tumors and brain cell activity, which can enhance patient outcomes.

Optical imaging is a fast, inexpensive, and sensitive imaging approach for the non-invasive detection of cancers. Defining the margins of cancerous tissue using optical contrast agents can allow the surgeon to distinguish between normal and tumor tissue better. It also allows surgeons to avoid the unintentional removal of healthy tissue and prevent failure to maximize the removal of malignant tissue.

Moreover, head and neck cancers have become a significant threat to human health in recent years. While surgery remains the first-line treatment option for patients with head and neck cancer, the limited resectable tissue mass and complex anatomy structures in the head and neck region put surgeons in a predicament between extensive resection and a better quality of life for the patient, as removing too much may negatively impact the patient's quality of life, and pulling too little may cause cancer to reoccur.

Early detection and treatment of pre-malignant lesions and real-time in vivo detection of surgical margins during en-bloc resection could reduce the resection of normal tissues. Developments in optical hardware and reagents have created exceptional prospects for real-time pre-malignancies and cancer imaging in the clinic or operating room, with an understanding of head and neck oncology.

Ophthalmology Segment is Expected to Hold a Significant Market Share

The soaring popularity of Optical Coherence Tomography, a non-invasive imaging technology used to obtain high-resolution cross-sectional images of the retina, and the rising prevalence of eye disorders as the regional senior population grows, are expected to aid the growth of the market studied.

Based on the data provided by the Centers for Disease Control and Prevention (CDC), in the United States, common eye disorders include refractive errors, glaucoma, age-related macular degeneration, diabetic retinopathy, and cataracts.

Additionally, 3.3 million Americans have open-angle glaucoma, according to Prevent Blindness, a prominent volunteer eye health and safety organization devoted to preventing blindness and preserving sight. For instance, in October 2022, Nanoscope Technologies LLC, a biotechnology company working on gene therapies for the treatment of chronic diseases, announced that it

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had been awarded a USD 1.5 million SBIR Direct-to-Phase II grant from the NIH in support of its advancement of glaucoma therapy using engineered mechanosensitive channels (EMC).

In addition, the ophthalmic industry is seeing an increase in the incorporation of AI into diagnostic techniques. Inspired by the human multilayered neuronal system, AI has significantly improved some visual and auditory recognition tasks. AI can comprehensively, quickly, and non-invasively examine digital data in various tasks.

North America Optical Imaging Market Competitor Analysis

The North American optical imaging market is moderately fragmented, with prominent players like Carl Zeiss Meditec AG, ASE Optics Inc., Cytoviva Inc., Heidelberg Engineering Inc., etc. The companies must leverage their technological capabilities and industry experience to innovate advanced products that cater to complex issues to diversify their customer base and capture a wider geographic area.

In October 2022, Teledyne Technologies Incorporated announced the acquisition of ETM-Electromatic Inc. ("ETM") by a wholly-owned subsidiary. ETM, based in Newark, California, creates high-power microwave and high-energy X-ray subsystems for cancer treatment, defense, and X-ray security. Teledyne will also acquire ETM's purpose-built manufacturing plant from an affiliate of ETM and its owners. ETM adds a distinct value to its healthcare imaging and defense electronics businesses.

In January 2021, Olympus Corporation sold its imaging division to Japan Industrial Partners Inc. A legal agreement that both parties signed served as the basis for the final transfer. Following the handover, OM Digital Solutions Corporation took over Olympus' Imaging division.

In January 2021, Leica Microsystems announced a partnership with Imperial College in optical imaging and its use in research and innovation to set up a dedicated imaging hub equipped with advanced confocal and widefield microscopy systems.

Additional Benefits:

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

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