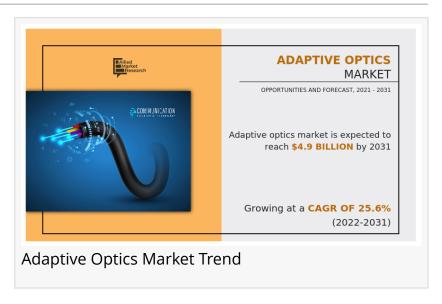


The Adaptive Optics Market's Journey to \$4.9 Billion by 2031—A Comprehensive Exploration by Allied Market Research

Adaptive optics (AO) is a branch of optics and photonics integrated with optical systems for beam propagation, communications, and microscopy.

OREGAON, PORTLAND, UNITED STATES, January 19, 2024
/EINPresswire.com/ -- Allied Market Research recently published a report, titled, "Adaptive Optics Market by Component (Wavefront Sensor, Wavefront Modulator, Control System), by Industry Vertical (Astronomy,



Biomedical, Military & Defense, Industrial & Manufacturing, Others), by Application (Ophthalmology, Microscopy, Laser Application, Others): Global Opportunity Analysis and Industry Forecast, 2021-2031." As per the report, the global adaptive optics industry was estimated at \$494.5 million in 2021, and is set to reach \$4.9 billion by 2031, growing at a CAGR of 25.6% from 2022 to 2031. The report offers a detailed analysis of changing market trends, top segments, key investment pockets, value chains, regional landscapes, and competitive scenarios.

The factors such as adoption in the field of astronomy, growth in prevalence of retinal degeneration diseases, and rise in demand for high-resolution microscopy in various biomedical research operations supplement the growth of the adaptive optics market. However, high initial cost of adaptive systems and complex design & optimization of space optical solutions are the factors expected to hamper the growth of the adaptive optics market. In addition, increase in demand for photonics enabled products to enhance system efficiency to aid growth and rise in R&D investments in advanced optics technology create market opportunities for the key players operating in the adaptive optics market.

Surge in cases of retinal degenerative disorders and growing demand for adaptive optics in astronomical activities boost the growth of the global adaptive optics market. Moreover, increase in demand for high-resolution microscopy in various biomedical research operations aids the growth of the global market. However, huge initial costs of adaptive systems and complex design along with optimization of space optical solutions are a few factors that can hinder the growth of the global market. Nevertheless, escalating demand for photonics-based products and a rise in research and development activities in advanced optics technology are predicted to generate new growth avenues for the global market.

Based on the type, the wavefront sensor segment contributed to the highest market share in 2021, accounting for nearly two-fifths of the global adaptive optics market share. However, the wavefront modulator segment is predicted to contribute majorly toward an overall market share in 2031, contributing more than one-third of the global market share. Furthermore, this segment is also likely to register the highest CAGR of nearly 27.0 % during the forecast timeline. The growth of the wavefront modulator segment over the forecast period can be attributed to the wide application of wavefront modulators in optical information processing systems. The report also includes other segments such as the control system.

0000000 0000000 0000000 000000 000: https://www.alliedmarketresearch.com/adaptive-optics-market/purchase-options

000

On basis of the industry vertical, the military & defense segment contributed to the highest market share in 2021, accounting for more than one-third of the global adaptive optics market share. Reportedly, this segment is predicted to contribute majorly toward an overall market share in 2031. The segmental growth over the forecast timeline can be attributed to the extensive application of adaptive optics in the military & defense sector as the adaptive optics to improve the performance of laser-based weapon systems. The report also analyzes other segments such as astronomy, biomedical, industrial & manufacturing, and others segments.

In terms of the application, the microscopy segment contributed to the highest market share in 2021, accounting for nearly one-third of the global adaptive optics market share. Reportedly, this segment is predicted to contribute majorly toward an overall market share in 2031. The expansion of this segment over the forecast timeline is owing to large-scale use of adaptive optics in high-resolution microscopy. The report also includes other segments such as

Ophthalmology, Laser Application, and Others.

By Region, North America contributed notably toward an overall market share in 2021, and is projected to continue its dominance during the forecast period. The region accounted for more than two-fifths of the global adaptive optics market share in 2021. The region is projected to dominate the global market even in 2031. The growth of the market in the region over the forecast timespan can be credited to the increased presence of numerous companies operating across North America. In addition, the key players operating across the industry in North America are offering advanced adaptive optics systems to be used across defense, astronomy, medical, manufacturing, and other industries. However, the Asia-Pacific region is anticipated to record the fastest CAGR of 29.0% from 2022 to 2031. The growth of the regional market over the forecast period can be attributed to the approval of adaptive optics devices in countries such as China, Japan, India, and South Korea. Furthermore, increasing acceptance of adaptive optics for retinal imaging is anticipated to fuel the adaptive optics market in this region. The report also analyzes other segments including LAMEA and Europe.

The report analyzes these key players in the global adaptive optics market. These players have implemented key business strategies such as strategic expansion, new product launches, alliances, and joint ventures for enhancing market penetration and reinforcing their position in the industry. The report helps the target audience in determining the market performance, performance of each segment, product portfolio development in the market, and contributions made by each player to the market expansion.

□□By component, the wavefront modulator segment dominated the global adaptive optics market in terms of growth rate.

□□By industry vertical, the others segment dominated the global adaptive optics market in terms of growth rate.

 $\square\square$ By application, the others segment dominated the global adaptive optics market in terms of growth rate.

https://www.alliedmarketresearch.com/military-and-aerospace-fiber-optics-market - Military and Aerospace Fiber Optics Market Size, Share, Competitive Landscape and Trend Analysis Report by Mode (Single-Mode, Multi-Mode, Application), by Radar Systems (Flight Management Systems, Inflight Entertainment Systems, Communication Systems, Electronic Warfare, Cabin Interiors, Avionics, Others) and by End User (Commercial, Military, Space, Others): Global Opportunity Analysis and Industry Forecast, 2023-2032

https://www.alliedmarketresearch.com/military-electro-optics-infrared-systems-market-A14498 - Military Electro-Optics/Infrared (EO/IR) Systems Market Size, Share, Competitive Landscape and Trend Analysis Report by System (Laser, Targeting, Imaging), by Technology (Uncooled, Cooled), by Imaging Technology (Scanning, Starring, Hyperspectral, Multispectral), by Application (Military Intelligence, Surveillance, Reconnaissance) and by Platform (Airborne, Land-Based, Naval): Global Opportunity Analysis and Industry Forecast, 2023-2032

https://www.alliedmarketresearch.com/tactical-optics-market-A14510 - Tactical Optics Market Size, Share, Competitive Landscape and Trend Analysis Report by Product (Weapon Scopes Sights Handheld Sighting Devices, Handheld Sighting Devices, Cameras Displays), by Platform (Ground, Naval, Airborne), by Application (ISR, Target Acquisition Identification, Border Coastal Patrol, Search Rescue), by End User (Manned Platform, Weapon Mounted, Soldier, Unmanned Platform), by Range (Short Range, Medium Range, Long Range) and by Region (North America, Europe, Asia-Pacific, LAMEA): Global Opportunity Analysis and Industry Forecast, 2023-2032

David Correa
Allied Market Research
+1 800-792-5285
email us here
Visit us on social media:
Facebook
Twitter
LinkedIn

This press release can be viewed online at: https://www.einpresswire.com/article/682494640

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2024 Newsmatics Inc. All Right Reserved.