

Laser Market - Forecasts from 2021 to 2026

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Abstracts

The global lasers market is expected to grow at a compound annual growth rate of 8.28% over the forecast period. The market is expected to be driven by the growth of lasers in various applications such as military and defence, material processing, research and development, healthcare, and other industrial operations. Major companies have been investing significant capital in the enhancement of laser technology for different applications. The major advantage of the laser is that it provides precision and higher quality and can work with any sort of material. R&D is expected to play a major role in overall market growth. According to UNESCO, Global spending on research and development had been at approx. USD 1.7 trillion, with ten countries, have a share of 80%. The United States and China are the two biggest spenders with USD 476 billion and USD 372 billions of expenditure on R&D. Japan had been spending USD 170 billion on research and development. Germany, South Korea, France, and India, had been spending USD 110 billion, USD 73 billion, USD 61 billion, and USD 52 billion, respectively.

The military and Defense Sector is expected to drive the market growth

There has been a surge in military and defense spending, globally, as major countries have been investing a substantial sum of capital into the defense budget to combat and fight insurgencies, terrorism, and other related issues. According to the Stockholm International Peace Research Institute, total worldwide military expenditure rose to USD 1.917 trillion, in the year 2019. The total spending saw a surge of 3.6% from the year 2018. The five major military and defense spenders were The United States, China, India, Russia, and Saudi Arabia. The United States was the biggest spender with a total of USD 732 billion, and had a total expenditure share of 38%, in the year 2019. China and India were the biggest spenders in the Asia Pacific region. China's overall expenditure was USD 261 billion, a 5.1% surge from 2018, and India's total expenditure was USD 71.1 billion, a surge by 6.8% from the year 2018. In addition to

China and India, Japan and South Korea were other major spenders in the year 2019, with a total of USD 47.6 billion and USD 43.9 billion, respectively. Germany was a major spender in Europe with a total of USD 49.3 billion, in the year 2019. The major share of the budget goes into novel weapons purchasing, weapon maintenance, security, and other related sectors. Lasers are widely used in the security and defense sector. Some of the major applications of lasers are illumination, monitoring of hazardous gases, range finding, perimeter security, and others. Major defense companies have been developing laser technology for military operations. In January 2021, Lockheed Martin, one of the major players in the laser and defense market, announced that it had delivered high energy laser, with integrated Surveillance and Optical dazzler, a laser weapon system, for the United States Navy. Other countries and companies are also making major developments in the market. In January 2021, The Japanese Defense Ministry announced that it had begun research in the usage of vehicle-mounted counter-drone lasers, to eliminate and remove rogue drones, from its territory. The Japanese government had been expecting an arrival date of the novel product from the year 2024. In October 2020, Boeing and General Atomics, two of the major players in the market, announced a collaboration and a partnership to build a novel high energy laser for missile and air defense. Under the novel agreement, the two companies would create a 110 KW laser, which would be upgraded to 250 KW, and the weapon would be employed and developed as an integrated onboard ground vehicle or a standalone system.

Ophthalmology Operations

The market is expected to be driven by the use of lasers in ophthalmology operations. The eyes are used as an optical device. The front of the eye has transparency, through which a laser can reach a tissue of the eye. Major companies and research institutions have been investing a significant sum of capital to develop novel and advanced technologies for their customers. In December 2020, IRIDEX Corporation, a major player of innovative and advanced ophthalmic laser-based medical products, announced its MicroPulse P3 Delivery Device and IRIDEX Cyclo Laser System, which had been used to perform MicroPulse Transscleral Laser therapy, had been included in the European Glaucoma Society Guidelines and Terminology for Glaucoma. This had been a major development in the company's history, which would play a major role in the market enhancement. In December 2020, a team at Duke University had been developing laser technology to fight and remove diabetic retinopathy. The team had been using the University Resources and Capabilities, to develop a cost-effective laser scanning ophthalmoscope to fight diabetic retinopathy, which had been a major cause of adult blindness. The novel technology provides slices and parts of image data, which

would be compiled to produce a 3D representation of the novel technology. In January 2021, West Virginia University and the University of Pittsburgh announced a joint development partnership to battle and find a solution against Glaucoma, which is a cause of blindness. The two universities had received USD 15.2 million from the National Eye Institute, to study the selective laser trabeculoplasty for the treatment of Glaucoma. The two universities would focus on low energy laser technology to get results for the future treatment of glaucoma.

Lasers for Material Processing

The material processing application sector is expected to hold a major share in the market in the coming years. Lasers are being used as a controlled source of energy and heat for many metallurgical applications, like drilling, welding, surface hardening, and cutting. Solid State lasers are highly used to perform material processing and metallurgical operations. Major companies have been investing significant capital to develop and produce innovative and advanced products. In January 2021, NUBURU, a major player in high power blue laser technology, announced that the company had been awarded seven novel patents, for the company's visible laser technology and applications, across material processing and 3D printing. The novel technology would be used to build single-mode visible lasers. Novel Players and Start-ups have been developing advanced technologies and have raised significant investments. In April 2020, 6D Lasers, founded in 2018, have been an affiliate of ALIO Industries, a major motion supplier, which specializes and has expertise in nano precision multi-axis solutions. The company stated that they had been developing ultrafast laser processing solutions for precision and accurate multi-axis motion systems. The development of the novel technology would be a positive factor in the overall market growth, in the coming years.

Segmentation:

By Type

Solid State Lasers

Fiber Lasers

CO2 Lasers

Diode Lasers

Others

By Applications

Medical and Cosmetics

Instrumentation and Sensors

R&D, Military and Defense

Material Processing

Lithography

Others

By Geography

North America

USA

Canada?

Mexico

Others

South America

Brazil

Argentina

Others

Europe

UK

Germany

France

Italy

Spain

Others

Middle East and Africa

Saudi Arabia

UAE

Israel

Others

Asia Pacific

Japan

China

India

Australia

Others

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9.6. Novanta

9.7. TRUMPF

9.8. Prima Industries S.p.A

9.9. Keyence Corporation

9.10. JENOPTIK AG

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