

Solid-State Laser Market by Type (Continuous Wave Lasers, Pulsed Solid State Lasers), Application (Aerospace and Defense, Automotive, Healthcare, and Others), and Region 2024-2032

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Abstracts

The global solid-state laser market size reached US\$ 2.3 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 4.4 Billion by 2032, exhibiting a growth rate (CAGR) of 7.16% during 2024-2032. The increasing demand for pulsed lasers and the extensive product usage in the field of dentistry, surgical procedures, and diverse skin rejuvenation therapies represent some of the key factors driving the market.

Solid-state laser (SSL) represents a class of active laser that is created on various solid-state-gain mediums, such as crystalline and glass materials doped with rare and transition metal ions. It relies on garnets, aluminates, metal oxides, fluorides, tungstate, and molybdates as standard crystalline materials that act as a good host for producing laser light. SSL comprises optics and electronic items, including internal controls and power supply solutions, as two major components that are integrated into one box for product formation. As compared to gas laser light, SSL provides superior laser output per unit volume even while using a small resonator. Apart from this, it is economical and offers high beam quality, amplitude stability, better peak power, unparalleled efficiency, reduced chance of material in active medium going waste, and nearly diffraction-limited beam divergence. Consequently, SSL finds extensive applications in endoscopy, target destination systems, metal drilling, and environmental instrumentation measurements.

The widespread adoption of SSL across the healthcare sector can be attributed to the increasing demand for pulsed lasers and the extensive product usage in the field of dentistry, surgical procedures, and diverse skin rejuvenation therapies. This represents

one of the key factors driving the market growth. Such laser solutions are further utilized in melasma treatment, scar removal, and eye surgeries owing to their multiple benefits, such as enhanced convenience, reduced non-contact lens risks, and permanently improved vision. Moreover, the significant expansion in the automotive and aerospace industries and the escalating need for welding technologies have encouraged manufacturers to employ a solid-state laser to join multiple metal pieces through a beam, which is acting as another growth-inducing factor. In line with this, the extensive product utilization in destructive laser weapon systems for disabling rivals' security systems and immobilizing the target is propelling the market growth. Furthermore, the growing SSL incorporation in red-green-blue (RGB) light sources in laser printers or projectors, optical transmission systems, and nuclear-fusion applications are supporting the market growth. Other factors, such as the escalating SSL demand in material handling operations, including etching, checking, drilling, and cutting, and ongoing research and development (R&D) activities to enhance product efficacy, are creating a positive outlook for the market across the globe.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global solid-state laser market, along with forecasts at the global, regional, and country level from 2024-2032. Our report has categorized the market based on type and application.

Type Insights

Continuous Wave Lasers

Pulsed Solid State Lasers

The report has also provided a detailed breakup and analysis of the solid-state laser market based on the type. This includes continuous wave and pulsed solid state lasers. According to the report, continuous wave laser represented the largest segment.

Application Insights

Aerospace and Defense

Automotive

Healthcare

Others

A detailed breakup and analysis of the solid-state laser market based on the application has also been provided in the report. This includes aerospace and defense, automotive,

healthcare and others. According to the report, healthcare accounted for the largest market share.

Regional Insights

North America

United States

Canada

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

The report has also provided a comprehensive analysis of all the major regional markets that include North America (the United States and Canada); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Latin America (Brazil, Mexico, and others); and Middle East and Africa.

According to the report, the Asia Pacific was the largest market for solid-state laser. Some of the factors driving the Asia Pacific solid-state laser market included its increasing need for pulsed lasers and rising product usage in surgical procedures and

skin rejuvenation therapies.

Competitive Landscape

The report has also provided a comprehensive analysis of the competitive landscape in the global solid-state laser market. Detailed profiles of all major companies have also been provided. Some of the companies covered include Coherent Inc., CrystaLaser, Han'S Laser Technology Industry Group Co. Ltd., InnoLas, Jenoptik AG, Laserglow Technologies, Photonics Industries International Inc., Tianjin Maiman Laser Technology Co. Ltd, Trumpf, Wuhan Huaray Precision Laser Co. Ltd etc. Kindly, note that this only represents a partial list of companies, and the complete list has been provided in the report.

Key Questions Answered in This Report:

How has the global solid-state laser market performed so far and how will it perform in the coming years?

What are the drivers, restraints, and opportunities in the global solid-state laser market?

What are the key regional markets?

Which countries represent the most attractive solid-state laser markets?

What is the breakup of the market based on the type?

What is the breakup of the market based on the application?

What is the competitive structure of the global solid-state laser market?

Who are the key players/companies in the global solid-state laser market?

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