High Energy Lasers Market by Type (Gas Lasers, Chemical Lasers, Excimer Lasers, Fiber Lasers, Solid State Lasers), Application (Cutting, Welding and Drilling, Military and Defense, Communications, and Others), and Region 2023-2028

Market Report | 2023-05-29 | 134 pages | IMARC Group

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Report description:

Market Overview:

The global high energy lasers market size reached US$ 10.2 Billion in 2022. Looking forward, IMARC Group expects the market to reach US$ 20.43 Billion by 2028, exhibiting a growth rate (CAGR) of 11.8% during 2023-2028. The escalating product demand in the military and defense applications, continual technological advancements in high energy laser technology, and considerable growth in the aerospace industry represent some of the key factors driving the market.

High-energy lasers are powerful lasers capable of producing intense beams of light with high power, high intensity, and high energy density. They operate by exciting atoms or molecules within a lasing medium, such as a gas or crystal or fiber, to a high energy state, which then release photons that are amplified and focused into a concentrated beam. Therefore, the lasers produce coherent light which is amplified through a series of mirrors or lenses, resulting in a high-energy laser beam. In materials that are nominally transparent to low-intensity laser light, high-power laser light can cause damage. These lasers can be used for various purposes, including cutting, welding, drilling, and marking materials, as well as in medical, scientific, and military applications. They can also be used in laser weapons that are capable of disabling or destroying targets with high precision and speed.

High Energy Lasers Market Trends:

The global market is majorly driven by the escalating product demand in the military and defense applications, such as missile defense, target designation, and battlefield illumination. This can be attributed to the rising investments by the government and defense agencies in high energy laser technology. In line with this, the growing trend of laser-based manufacturing, such as

cutting, welding, and drilling in numerous end-use industries, is providing an impetus to the market. Moreover, continual technological advancements in high energy laser technology, such as the development of fiber lasers with higher power output and improved beam quality, is creating lucrative growth opportunities in the market. In addition to this, the augmenting usage of high energy lasers in numerous medical applications, including surgical procedures, dermatology, and ophthalmology, is resulting in a higher product uptake. The market is further fueled by considerable growth in the aerospace industry where high energy lasers are highly utilized in remote sensing, LiDAR, and optical communications. Apart from this, an enhanced focus on energy-efficiency is leading to the widespread adoption of high energy laser systems as a sustainable manufacturing solution for low carbon footprint and energy consumption. Some of the other factors contributing to the market include rapid industrialization, inflating disposable income levels, significant growth in large-scale manufacturing activities and extensive research and development (R&D) activities.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global high energy lasers market, along with forecasts at the global, regional, and country levels from 2023-2028. Our report has categorized the market based on type and application.

Type Insights:

Gas Lasers
Chemical Lasers
Excimer Lasers
Fiber Lasers
Solid State Lasers

The report has provided a detailed breakup and analysis of the high energy lasers market based on the type. This includes gas lasers, chemical lasers, excimer lasers, fiber lasers, and solid state lasers. According to the report, fiber lasers represented the largest segment.

Application Insights:

Cutting, Welding and Drilling
Military and Defense
Communications
Others

A detailed breakup and analysis of the high energy lasers market based on the application has also been provided in the report. This includes cutting, welding and drilling, military and defense, communications, and others. According to the report, cutting, welding and drilling 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, which 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 the Middle East and Africa. According to the report, Asia Pacific was the largest market for high energy lasers. Some of the factors driving the Asia Pacific high energy lasers market included considerable growth in the aerospace and defense industry, technological advancements, high military expenditure, etc.

Competitive Landscape:

The report has also provided a comprehensive analysis of the competitive landscape in the global high energy lasers market. Competitive analysis such as market structure, market share by key players, player positioning, top winning strategies, competitive dashboard, and company evaluation quadrant has been covered in the report. Also, detailed profiles of all major companies have been provided. Some of the companies covered include Beamtech Optronics Co. Ltd., Bystronic AG, Coherent Inc.

(Coherent Corp.), FANUC America Corporation, Han's Laser Corporation (Han's Laser Technology Industry Group Co. Ltd.), Lumentum Operations LLC, MPB Communications Inc., Nlight Inc., Northrop Grumman Corporation, Raytheon Technologies Corporation, The Boeing Company, Trumpf Group, Wuhan Raycus Fiber Laser Technologies 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 high energy lasers market performed so far, and how will it perform in the coming years?
What are the drivers, restraints, and opportunities in the global high energy lasers market?
What is the impact of each driver, restraint, and opportunity on the global high energy lasers market?
What are the key regional markets?
Which countries represent the most attractive high energy lasers market?
What is the breakup of the market based on the type?
Which is the most attractive type in the high energy lasers market?
What is the breakup of the market based on the application?
Which is the most attractive application in the high energy lasers market?
What is the competitive structure of the global high energy lasers market?
Who are the key players/companies in the global high energy lasers market?

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