

Ultrafast Lasers Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

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Abstracts

The global ultrafast lasers market size reached US\$ 1.8 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 4.3 Billion by 2028, exhibiting a growth rate (CAGR) of 15.62% during 2022-2028.

Ultrafast lasers are short pulses of light of a few picoseconds or femtoseconds that are used to create, detect and study short-lived transient chemical reactions and transient states. They are generated by mode-locked oscillators and have a broadband optical range. Some of the commonly used ultrafast lasers include diode-pumped, mode-locked diode, titanium-sapphire and fiber lasers. They are used for the precise processing of materials, such as metals, ceramics, composites, fiber-reinforced materials and semiconductors. They have high peak powers and power densities and offer enhanced dimensional accuracy with minimal post-processing steps. As a result, they are widely used in the manufacturing of automobiles, consumer electronics and medical devices.

Ultrafast Lasers Market Trends:

Significant growth in the electronics industry across the globe is one of the key factors creating a positive outlook for the market. With the increasing miniaturization of consumer electronic devices, ultrafast lasers are used for the manufacturing of smartphones, microprocessors and display panels. Moreover, the widespread product adoption in the automotive industry is providing a thrust to the market growth. Ultrafast lasers are used for making small grooves into the surface of engine cylinder walls to facilitate efficient distribution of the lubricant and minimize friction losses. In line with this, the increasing adoption of ultrafast lasers for high-quality micromachining, scribing and cutting of brittle materials is also favoring the growth of the market. Additionally, the increasing utilization of these lasers for the development of coronary stents using

biopolymers or magnesium-based alloys with enhanced biocompatibilities is also favoring the market growth. Other factors, including rapid industrialization, along with the implementation of favorable government policies promoting the use of ultrafast lasers, are anticipated to drive the market toward growth.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global ultrafast lasers market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on type, pulse duration and end user.

Breakup by Type:

- Titanium-Sapphire Lasers
- Diode-Pumped Lasers
- Fiber Lasers
- Mode-Locked Diode Lasers

Breakup by Pulse Duration:

- Femtosecond
- Picosecond

Breakup by End User:

- Consumer Electronics
- Medical
- Automotive
- Aerospace and Defense
- Research

Breakup by Region:

- North America
 - United States
 - Canada
- Asia-Pacific
 - China
 - Japan

India
South Korea
Australia
Indonesia
Others
Europe
Germany
France
United Kingdom
Italy
Spain
Russia
Others
Latin America
Brazil
Mexico
Others
Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Amplitude Laser, Coherent Inc, EKSPLA (EKSMA Group), IMRA America Inc. (Aisin Corporation), IPG Photonics Corporation, Jenoptik AG, Laser Quantum (Novanta Inc.), LIGHT CONVERSION, Lumentum Operations LLC, NKT Photonics A/S (NKT A/S) and Wuhan Huaray Precision Laser Co. Ltd.

Key Questions Answered in This Report:

How has the global ultrafast lasers market performed so far and how will it perform in the coming years?
What has been the impact of COVID-19 on the global ultrafast lasers market?
What are the key regional markets?
What is the breakup of the market based on the type?
What is the breakup of the market based on the pulse duration?
What is the breakup of the market based on the end user?
What are the various stages in the value chain of the industry?
What are the key driving factors and challenges in the industry?
What is the structure of the global ultrafast lasers market and who are the key players?
What is the degree of competition in the industry?

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