

# Ultrafast Lasers 2025: Technologies, Applications and Market Trends

## ULTRAFAST LASERS ENABLE INNOVATION IN MULTIPLE SECTORS, FROM SCIENTIFIC RESEARCH TO INDUSTRIAL PRODUCTION

## REPORT OUTLINE

- Title: Ultrafast Lasers 2025: Technologies, Applications and Market Trends
- 90+ slides (PDF)
- € 4990 - Multi users' license

## KEY FEATURES OF THE REPORT

- Overview of the factors and trends that influence the global ultrafast lasers market
- Presentation of the most common ultrafast laser technologies and their applications
- Detailed technology breakdown for each application including revenues, ASPs and number of units sold
- Presentation of the sales of ultrafast laser sources by geographical region
- Detailed forecast of the ultrafast lasers market segments for the period 2025-2030

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Due to their complex design and high operational and maintenance costs, ultrafast lasers were historically limited to scientific and R&D applications. However, advancements in technology have made these systems more robust, cost-effective and accessible. As a result, their use has expanded beyond research and medicine into industrial settings, particularly for fine and high-precision materials processing.

Today, ultrafast lasers play a pivotal role in the manufacturing of components and devices that are cornerstones of our modern, technology-driven societies. Their unmatched precision and quality in processing have positioned them as a superior solution in advanced manufacturing. As innovation continues, the application scope of ultrafast lasers is expected to broaden further, gradually displacing other laser technologies in the most demanding industrial processes.

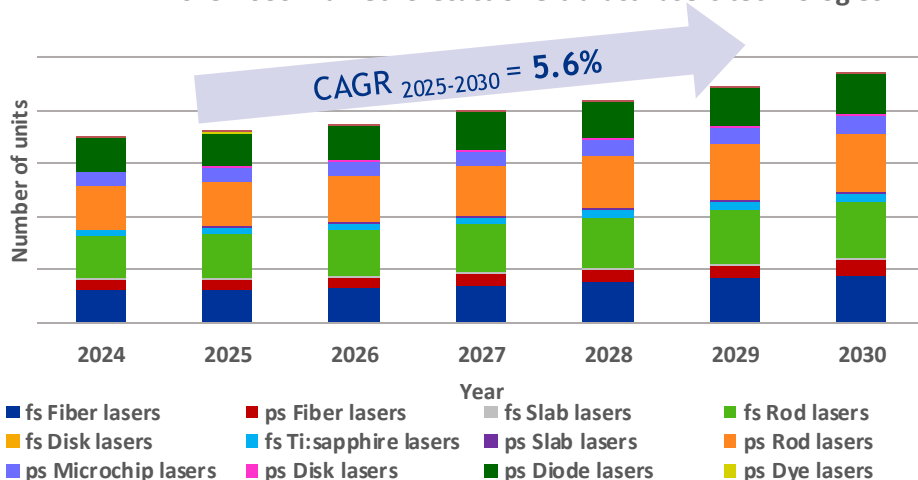
## REPORT'S OBJECTIVES

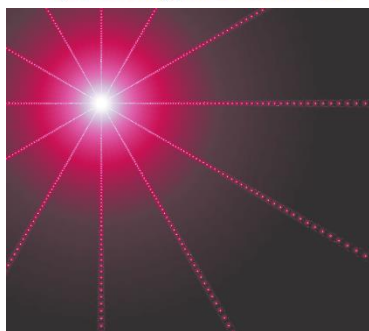
The objective of this report, is to present a comprehensive analysis of the global ultrafast lasers market for 2024. The market is broken down by commercially available ultrafast laser technologies such as **Fiber, Slab, Rod, Disk, Ti:sapphire, Microchip, Diode, Dye, LPSSLs** and their applications.

It examines the parameters that have influenced the global ultrafast lasers market in 2024, including industrial and technological trends, challenges in the medicine and research, as well as macroeconomic factors.

The report includes detailed figures on the ultrafast lasers market in 2024, covering **revenues, ASPs and number of units sold**. It also provides a **regional market breakdown** for **APAC, EMEA and the Americas**, along with a forecast for the period 2025-2030.

## 2025-2030 market forecast of Ultrafast Lasers technologies





#### INFORMATION SOURCES

- In-house knowledge of ultrafast laser technologies, their applications and their markets.
- Market data based on financial & business information of 90+ ultrafast lasers manufacturers.
- Interviews with key companies and industry experts that are involved in the ultrafast lasers business including manufacturers and integrators.
- Literature research.
- Participation in international conferences and exhibitions in the universe of lasers.

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## THE 2024 RECOVERY OF THE SEMICONDUCTORS INDUSTRY BOOSTED THE ULTRAFAST LASERS MARKET

Industrial applications account for over 65% of the total ultrafast lasers market, making them the dominant segment. Sales in this category are primarily driven by the semiconductor industry's demand for precision processing of a wide range of components and materials, including PCBs, FPCs, LCPs, SiPs, wafers, solar cells, glass, and OLED displays. Beyond electronic device manufacturing, ultrafast lasers are employed in any process that demands fine materials processing. Notable applications include metal and polymer processing for medical device manufacturing—such as stents and catheters—Li-ion battery foil cutting, and precision marking of both professional-grade equipment and high-end consumer goods.

Alongside industrial uses, ultrafast lasers maintain a strong presence in other key markets, including medical, scientific, research, and instrumentation-related fields. In medicine, femtosecond lasers have become indispensable tools for various ophthalmic procedures. More recently, picosecond lasers have begun competing with solid-state and semiconductor lasers in dermatology and cosmetic applications, thanks to their precision and minimal thermal damage.

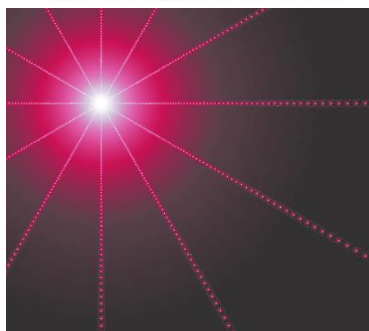
The traditional market for ultrafast lasers in R&D, scientific, and instrumentation-related applications remains robust, covering optical pumping of parametric oscillators and amplifiers, life sciences research, time-resolved spectroscopy, and plasma physics experiments. Communications is emerging as a promising growth segment, with ultrafast lasers demonstrating potential in high-precision signal distribution and other advanced photonic

applications.

The laser market, including ultrafast lasers, experienced headwinds in 2023 and early 2024 due to underperformance in several key industrial sectors, notably semiconductors. However, the gradual recovery of these industries helped the global ultrafast lasers market achieve modest year-over-year growth of nearly 2% in 2024. This reflects the market's resilience and sets a positive foundation for stronger expansion.

In the coming years, the semiconductor industry is poised for rapid growth, fuelled by massive investments to support AI applications. This surge is expected to drive a strong increase in demand for ultrafast lasers, boosting market growth as these lasers become essential for advanced semiconductor manufacturing. Although the number of ultrafast lasers sold is expected to grow rapidly between 2025 and 2030, revenue growth will be more moderate due to anticipated decreases in average selling prices (ASPs). Chinese-manufactured ultrafast lasers are projected to offer comparable quality and performance to Western counterparts but at more competitive prices, driving pricing pressure.

Ultrafast lasers will remain at the forefront of R&D and scientific innovation, as emerging challenges across diverse technological fields and global healthcare systems demand novel materials, advanced devices, and innovative treatment methods. Their precision and versatility will be key drivers in meeting these future needs.



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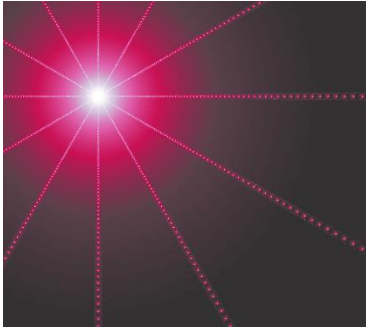
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