

Semiconductor laser market growing at 9% CAGR to over \$5bn in 2029

The telecom & infrastructure segment is growing at 18% to over \$2.5bn, as consumer applications grow just 1% to \$1.75bn, says Yole Développement.

According to market analyst firm Yole Group, the semiconductor laser market is growing at a compound annual growth rate (CAGR) of 9% from \$3.1bn in 2023 to more than \$5bn in 2029, continuing to be driven by several factors.

Analysts underline significant and rapid technical advances, growing demand across multiple industries, and a push for higher performance at lower cost. Trends that are shaping the future of the semiconductor laser market include: the expansion of applications using lasers; the shift toward energy efficiency, compact size and precision; and the growth in integration with multiple technology platforms including silicon-on-insulator (SOI), silicon nitride (SiN), indium phosphide (InP) and thin-film lithium niobate (TFLN).

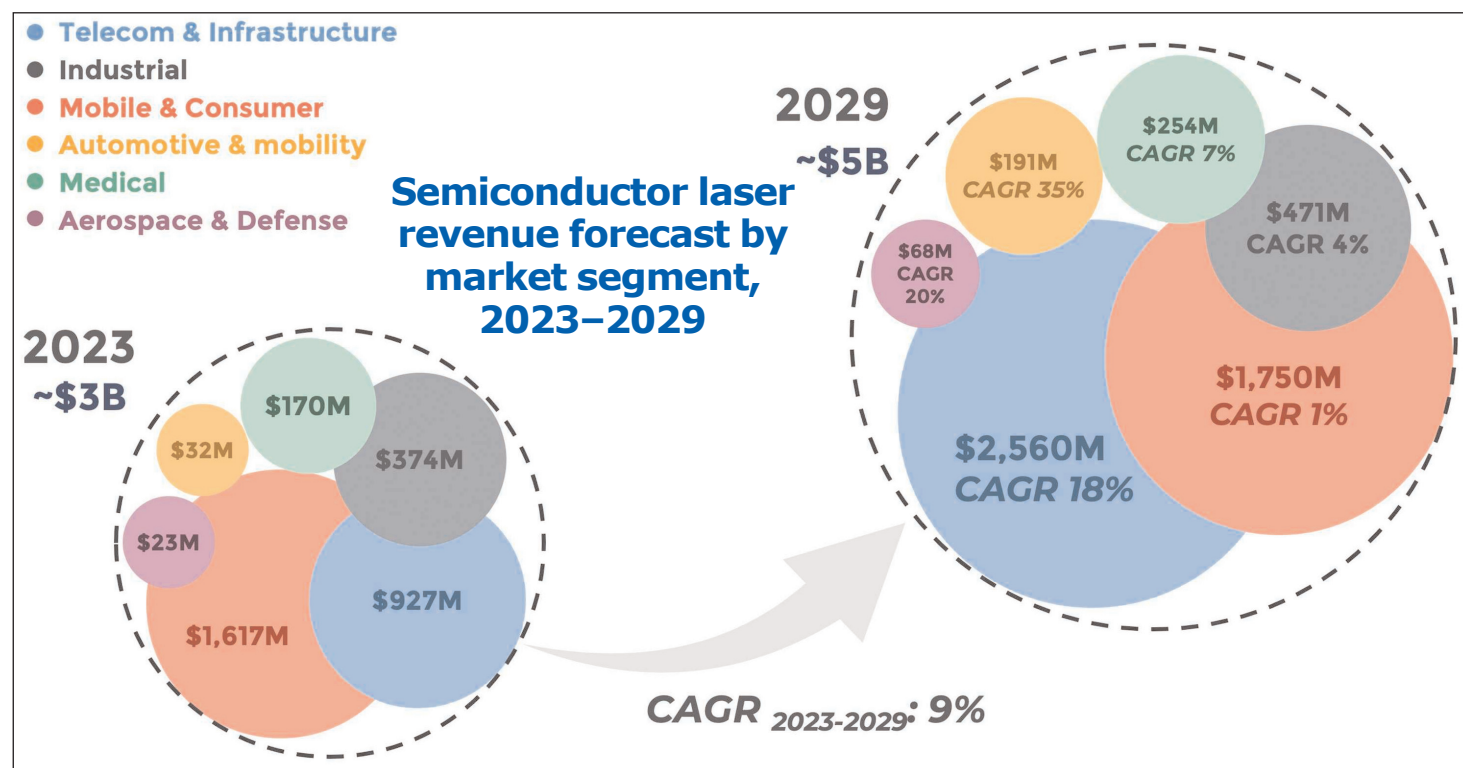
At the same time, geopolitical factors and supply chain challenges are prompting manufacturers to adopt more resilient production strategies. Overall, the semiconductor laser industry is positioned for significant growth, reckons Yole, driven by innovations

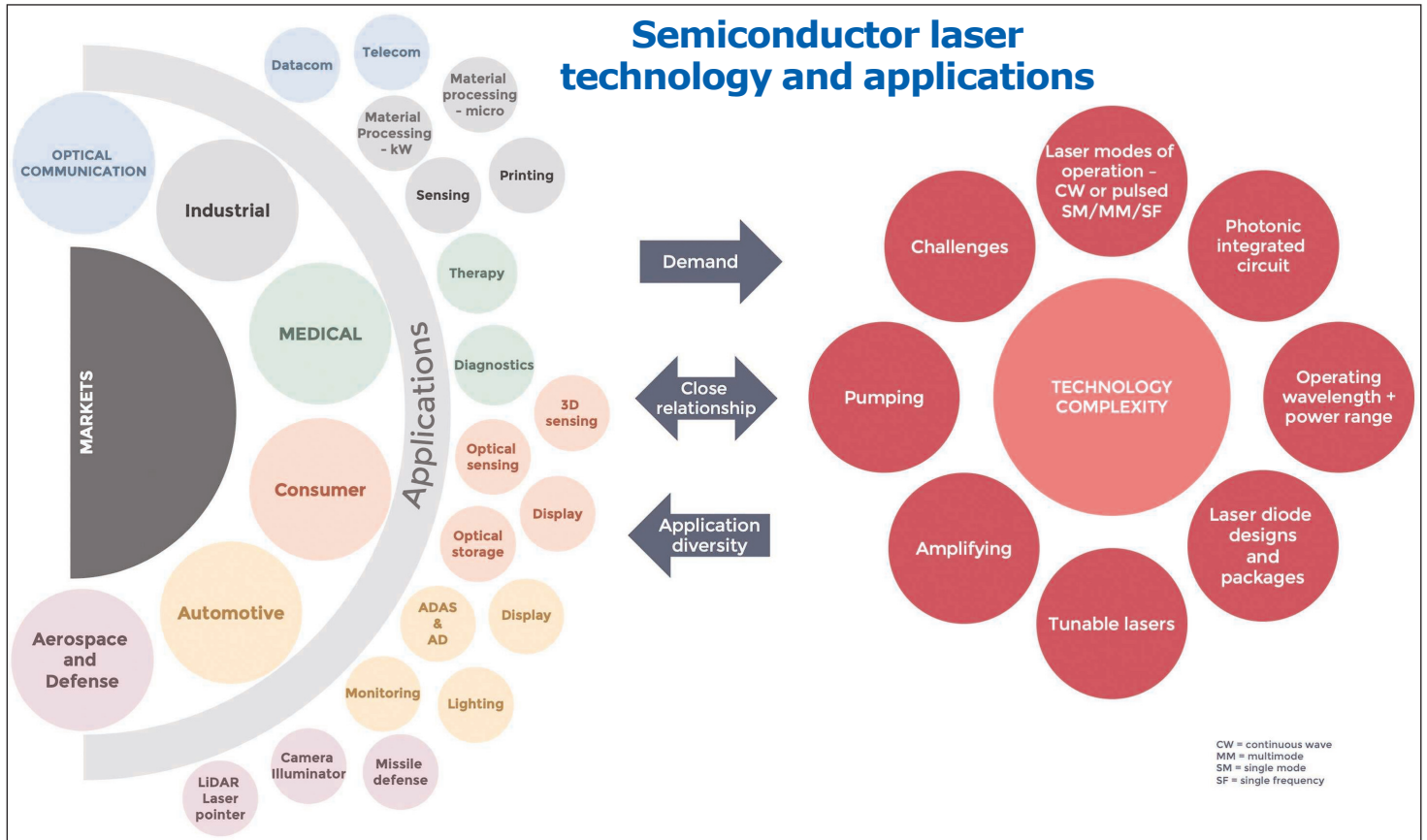
in both established and emerging markets.

Photonics has taken its place alongside electronics as a critical enabling technology for the 21st century. Photonics-based solutions are entrenched in a broad array of industries, including microelectronics, flat-panel displays, machine tools, automotive, and medical diagnostics, with adoption continuing in ever more diverse applications.

"In this dynamic context, the laser market has grown significantly over the last 40 years... [from] a few millions to a few billion dollars," notes Martin Vallo PhD, senior technology & market analyst, Photonics at Yole Group. "Without doubt, laser technologies represent huge potential. That is why, at Yole Group, we investigate this domain by analyzing the innovative solutions and the applications."

Behind the biggest segment of telecom & infrastructure (growing at a 18% CAGR to over \$2.5bn in 2029), consumer applications are forecasted to comprise a significant \$1.75bn market in 2029. But the correspon-





ding CAGR of just 1% is less impressive than that for automotive applications, for example.

“In the consumer segment, the moderate market growth is due to the volume drop in optical sensing applications in the 2022–2024 period due to technology replacement,” notes Ali Jaffal PhD, senior analyst,

Compound Semiconductors, at Yole Group.” In contrast, semiconductor lasers in automotive are anticipated to see significant expansion, with a double-digit CAGR during the same period, mainly driven by automotive LiDAR, especially in China.” ■

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