Vertical Cavity Surface Emitting Laser (VCSEL) Market Forecast to 2028 - COVID-19 Impact and Global Analysis by Type (Single Mode and Multi-Mode), Material [Gallium Arsenide (GaAs), Indium Phosphide (InP), and Others], Data Rate (Up to 10 GBPS, 10.1 to 25 GBPS, and Above 25 GBPS), Wavelength [Red, Near Infrared (NIR), and Short Wave Infrared (SWIR)], Application (Sensing, Data Communication, Industrial Heating & Printing, and Others), and End-use Industry (Mobile & Consumer, Telecom & Infrastructure, Industrial, Defense & Aerospace, Medical, and Automotive & Mobility)

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AVAILABLE LICENSES:

- Single User Price $4550.00
- Site Price $6550.00
- Enterprise Price $8550.00

Report description:

The VCSEL market size is projected to grow from US$ 1.4 billion in 2022 to US$ 4.7 billion by 2030; it is estimated to record a CAGR of 17.0% from 2023 to 2030.

The growing adoption of VCSEL for 3D sensing applications, such as smartphones for gesture control and facial recognition features, contribute to the VCSEL market growth. In addition, the use of VCSEL for data communication and LiDAR system for automotives propels the market growth. The rising integration of technologies such as IoT across various industries such as healthcare, automotive, and building necessitates using fiber optics communication technologies, contributing to the demand and adoption of VCSEL.

According to the International Organization of Motor Vehicle Manufacturers, in 2022, India, China, Indonesia, South Korea, and Thailand witnessed a significant rise in vehicle production. Additionally, regional and global automotive manufacturers are investing in establishing new vehicle production plants across the region. For instance, in March 2022, Triton Electric Vehicle LLC announced the launch of its new production plant in Gujarat, India. In addition, in June 2022, BMW announced the opening of its new electric vehicle production plant in China with an investment of US$ 2.2 billion. Thus, such growing investments in the automotive industry increase the demand for sensing technology for newly built automobiles. In the automotive industry, VSCEL technology in automotives is used for various sensor applications inside and outside the automotive cabin, contributing to the demand for VCSEL market in the region.

The COVID-19 pandemic adversely affected various industries in the North American region and directly impacted the overall spending. According to the Center for Strategic and International Studies, owing to the pandemic, the US experienced a contraction in GDP in the second quarter of 2020. The COVID-19 pandemic led to the temporary closure of manufacturing plants in the countries of North America. The manufacturing delays and component shortage faced challenge in sourcing raw materials and components leading to the production constraints. These disruptions impacted the availability and delivery of VCSEL products, which negatively impacted the VCSEL market size.

Furthermore, the COVID-19 pandemic accelerated the adoption of technologies and various technological advancements such as 5G, artificial Intelligence, Internet of Things, etc. For instance, according to the federal communication commission, the American Commission established the 5G Fund for Rural America in October 2020 to make up to $9 billion in Universal Service Fund support available to carriers to deploy advanced 5G mobile wireless services in rural America (including up to $680 million for deployment on Tribal lands). The Fund also sets aside at least US $1 billion for deployments facilitating precision agriculture needs. The growth in the technology created demand for the VCSEL market in the North America region.

The VCSEL market is segmented on the basis of type, material, data rate, wavelength, application, and end-use industry. Based on type, the VCSEL market is categorized into single mode and multi-mode. Based on material, the VCSEL market has been segmented into Gallium Arsenide (GAAS), Indium Phosphide (INP), and Others. In terms of data rate, the VCSEL market is categorized into Up to 10 GBPS, 10.1 to 25 GBPS, and Above 25 GBPS. In terms of Wavelength, the VCSEL market is categorized into Red , Near Infrared (NIR), Short Wave Infrared (SWIR). In terms of Application, the VCSEL market is categorized into sensing, data communication, industrial heating & printing, and other. In terms of End-use Industry, the VCSEL market is categorized into mobile & consumer, telecom & infrastructure, industrial, defense & aerospace, medical, and automotive & mobility. By region, the VCSEL market is segmented into North America, Europe, Asia Pacific, the Middle East & Africa, and South America.

Lumentum Holdings, Coherent Corp, Trumpf, Broadcom Inc., and Ams-Osram AG are among the key players operating in the VCSEL market that are profiled in this market study.

The overall VCSEL market size has been derived using both primary and secondary sources. Exhaustive secondary research has been conducted using internal and external sources to obtain qualitative and quantitative information related to the VCSEL market. The process also helps obtain an overview and forecast of the market with respect to all the market segments. Also, multiple primary interviews have been conducted with industry participants to validate the data and gain analytical insights. This process includes industry experts such as VPs, business development managers, market intelligence managers, and national sales managers, along with external consultants such as valuation experts, research analysts, and key opinion leaders, specializing in the VCSEL market.

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SCOTTS INTERNATIONAL

Vertical Cavity Surface Emitting Laser (VCSEL) Market Forecast to 2028 - COVID-19 Impact and Global Analysis by Type (Single Mode and Multi-Mode), Material [Gallium Arsenide (GaAs), Indium Phosphide (InP), and Others], Data Rate (Up to 10 GBPS, 10.1 to 25 GBPS, and Above 25 GBPS), Wavelength [Red, Near Infrared (NIR), and Short Wave Infrared (SWIR)], Application (Sensing, Data Communication, Industrial Heating & Printing, and Others), and End-use Industry (Mobile & Consumer, Telecom & Infrastructure, Industrial, Defense & Aerospace, Medical, and Automotive & Mobility)

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Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2026-03-11
		Signature	