Asia Pacific Vertical Cavity Surface Emitting Laser (VCSEL) Market Forecast to 2030 -Regional Analysis - by Type (Single Mode and Multi-Mode), Material [(Gallium Arsenide (GAAS), Indium Phosphide (INP), 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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Report description:

The Asia Pacific vertical cavity surface emitting laser market is expected to grow from US$ 470.98 million in 2023 to US$ 1,631.20 million by 2030. It is estimated to grow at a CAGR of 19.4% from 2023 to 2030.
Increasing Data Centers Fuel Asia Pacific Vertical Cavity Surface Emitting Laser (VCSEL) Market
The rising use of digitization, the Internet of Things (IoT), AI, and big data generates a huge amount of data that needs to be processed, stored, and analyzed in real time. The adoption of IoT and cloud technologies has increased the number of interconnected devices and systems, resulting in a mounting need for high speed, low latency, and better network connectivity. Thus, the rising data generation led to the increase in the construction of data centers to handle large data volumes. In December 2021, NEXTDC LTD, a data center service provider, opened its first edge data center in Queensland to provide low-latency and data center services across Australia. In October 2022, it also launched a 100,000-square-meter data center in Melbourne with an investment of US$ 1.5 billion. In December 2022, NTT, a technology service company, opened a new hyperscale data center in Navi Mumbai, India, with a capacity of 5,000 racks, supporting 30 MW of IT load. The increasing number of data centers has

upsurged the need for high data transmission speed to maintain and manage the data center. The ability of VCSEL to emit light at high speeds makes it one of the ideal options for high-speed data transmission applications. Thus, the rising demand for VCSEL for the optical interconnect infrastructures in the data centers is expected to offer lucrative opportunities for the Asia Pacific VSCEL market in the coming years.

Asia Pacific Vertical Cavity Surface Emitting Laser (VCSEL) Market Overview

Based on country, the Asia Pacific VCSEL market is segmented into Australia, China, India, Japan, South Korea, and the Rest of Asia Pacific. The automotive industry across Asia Pacific has been experiencing significant growth over the years.

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 in the region.

Asia Pacific Vertical Cavity Surface Emitting Laser (VCSEL) Market Revenue and Forecast to 2030 (US$ Million)

Asia Pacific Vertical Cavity Surface Emitting Laser (VCSEL) Market Segmentation

The Asia Pacific vertical cavity surface emitting laser market is segmented into type, material, data rate, wavelength, application, end-use industry, and country.

Based on type, the Asia Pacific vertical cavity surface emitting laser market is segmented into single mode and multi-mode. The single mode segment held a larger share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

Based on material, the Asia Pacific vertical cavity surface emitting laser market is segmented into Gallium Arsenide (GAAS), Indium Phosphide (INP), others. The Gallium Arsenide (GAAS) segment held the largest share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

Based on data rate, the Asia Pacific vertical cavity surface emitting laser market is segmented into Up to 10 GBPS, 10.1 to 25 GBPS, and Above 25 GBPS. The above 25 GBPS segment held the largest share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

Based on wavelength, the Asia Pacific vertical cavity surface emitting laser market is segmented into Red, Near Infrared (NIR), and Short-Wave Infrared (SWIR). The red segment held the largest share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

Based on application, the Asia Pacific vertical cavity surface emitting laser market is segmented into sensing, data communication, industrial heating & printing, and others. The sensing segment held the largest share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

Based on end-use industry, the Asia Pacific vertical cavity surface emitting laser market is segmented into mobile & consumer, telecom & infrastructure, industrial, defense & aerospace, medical, and automotive & mobility. The mobile & consumer segment held the largest share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

Based on country, the Asia Pacific vertical cavity surface emitting laser market is segmented into China, India, Japan, Australia, South Korea, and the Rest of Asia Pacific. China dominated the share of the Asia Pacific vertical cavity surface emitting laser market in 2023.

ams-OSRAM AG; Broadcom Inc; Coherent Corp; Hamamatsu Photonics KK; IQE Plc; Leonardo SpA; Lumentum Holdings Inc.; TRUMPF SE + Co KG; VERTILAS GmbH; and Vertilite Co Ltd are the leading companies operating in the Asia Pacific vertical cavity surface emitting laser market.

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