Laser Diode Market Size and Forecasts (2020 - 2030), Global and Regional Share, Trends, and Growth Opportunity Analysis By Doping Material (AlGaInP, GaAlAs, GaN, InGaN, and Others), Wavelength (Infrared Laser Diode, Red Laser Diode, Blue Laser Diode, Blue-Violet Laser Diode, and Others), and Application (Telecommunication, Consumer Electronics, Healthcare and Life Sciences, Automotive, Military and Defense, and Others)

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Report description:

The laser diode market size is expected US$ 8.03 billion in 2022 and is expected to reach US$ 22.25 billion by 2030. The laser diode market is estimated to record a CAGR of 13.8% from 2022 to 2030.

The Asia Pacific laser diode market is segmented into Australia, China, India, Japan, South Korea, and the Rest of Asia Pacific. The automotive industry across Asia Pacific is experiencing significant growth over the years. According to the International Organization of Motor Vehicle Manufacturers, countries such as India, China, Indonesia, South Korea, and Thailand have experienced a significant rise in vehicle production volume in 2022. 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, the development of the automotive industry requires laser diode for advanced lighting systems for longer-range visibility. Laser diodes in automobiles are also used for advanced driver assistance systems (ADAS) and other sensing requirements. Thus, the growing automotive industry fosters the laser diode market growth in the region.

Based on wavelength, the laser diode market is segmented into infrared laser diode, red laser diode, blue laser diode, blue-violet laser diode and others. The infrared laser diode segment held the largest share in the laser diode market in 2022. An infrared laser is a low-cost, high-power laser with numerous applications. Because these lasers are small and light, they may operate without requiring a lot of power. Infrared light ranges from 1300 to 1700 nm in the non-visible spectrum. Different infrared light wavelengths serve distinct functions. Infrared lasers with wavelengths of 1310 nm, 1550 nm, and 1625 nm are good for fiber optic communications, while 1480 nm lasers work well as optical amplifier pumps. However, infrared laser light has other applications as well. Also, it can be used in temperature measurement. Additionally, infrared lasers can also be used for medicine. The most popular non-ablative facial treatments using diode lasers include the treatment and reduction of acne, acne scars, wrinkles, and rosacea. Numerous applications and advantages of infrared laser diodes are boosting the laser diode market growth.

Red laser diodes, which are typically fabricated out of quantum wells such as GaInP or AlGaInP, are the most common and well-developed laser diodes in the market today. Red diode lasers are used in a wide range of applications, from low-cost laser pointers to laboratory flow cytometry systems. They are available with output power levels ranging from a few milliwatts (single emitters, VCSELs) to the order of 100 W from diode bars. The most common wavelengths are 635, 650, and 670 nm. Shorter wavelengths are more visible to the human eye but are more difficult to create efficiently. For laser pointers, red laser diodes are commonly utilized. Several companies, including Edmund Optics Inc., CNI Laser, and RPMC Lasers, provide red laser diodes. All such factors are boosting the growth of red laser diodes in the laser diode market.

Coherent Corp; IPG Photonics Corporation; Nuvoton Technology Corporation; Sharp Corp; Sheaumann Laser, Inc.; Sumitomo Electric Industries Ltd; TRUMPF SE + Co KG; Jenoptik AG; Mitsubishi Electric Corp; and ams-OSRAM AG are among the key Laser Diode Market players that are profiled in this market study.

The overall Laser Diode 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 Laser Diode Market size. 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 Laser Diode Market.

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