

Laser Diode Market Size, Trends, Business Opportunities and Forecast 2028 - Douglas Insights

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DOUGLAS, ISLE OF MAN, January 9, 2023 /EINPresswire.com/ -- Laser Diode Market Analysis

A laser diode or also known as a diode laser or injection laser diode is a semiconductor device, in which a diode-injected directly with electricity can create lasing conditions. It can directly convert electrical energy into light. Laser diodes are most commonly used in fiber-optic communications, laser pointers, barcode readers, laser printing, laser scanning and more.

Laser diodes are electronic devices that emit a laser beam by using an optical amplifier and a crystal laser. The market for laser diodes is expected to grow at a CAGR of **% from 2022 to 2028.

The key factors driving the market growth include advancements in technology, increase in demand from the automotive and health care industries, and increasing adoption of lasers in industrial applications.

Laser Diode Market Growth Drivers and Risks

The factors that are driving the growth of the laser diode market include increasing adoption of lasers in industrial applications, growing demand from end users for high performance lasers,



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and increasing R&D activities by key players in the laser diode market. However, several challenges such as low power and beam quality due to scattering and absorption by gas molecules, high cost of lasers, and unresolved issues related to photonic integrated circuits are restraining the growth of the laser diode market.

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Laser Diode Market Keyplayers

Some of the key players in the laser diode market are Osram Licht AG (Germany), Nichia Corporation (Japan), Royal Philips Electronics NV (Netherlands), Rohm Co., Ltd. (Japan), and Sumitomo Electric Industries, Ltd.

- On April 2, 2019, high-tech company Trumpf acquired the photonics business from Philips, which it had announced in December 2018. The acquisition will establish a new business division called TRUMPF Photonic Components and this unit will be headed up by Lutz Aschke and Joseph Pankert.
- As of February 2021, II-VI Incorporated, one of the leader in engineered materials and optoelectronic components, acquired Coherent, Inc. The acquisition provides II-VI with the opportunity to expand on their business in photonic solutions and laser technology.

The leading manufacturers of lasers offer products for automotive, industrial, medical, and consumer applications. These companies have developed arrays of laser diodes with different wavelengths to suit specific applications. The automotive industry is the largest segment of the laser diode market, followed by industrial applications.

Laser Diode Market Segmentations

By Wavelength

- Infrared Laser Diodes
- Red Laser Diodes
- Blue Laser Diodes
- Blue Violet Laser Diodes
- Green Laser Diodes
- Ultraviolet Laser Diodes

By Doping Material

- Gallium Aluminum Arsenide (GaAlAs)
- Gallium Arsenide (GaAs)
- Gallium Indium Arsenic Antimony (GaInAsSb)
- Aluminum Gallium Indium Phosphide (AlGaInP)
- Indium Gallium Nitride (InGaN)
- Gallium Nitride (GaN)
- Others (Indium Gallium Arsenide Phosphide (InGaAsP), Gallium Phosphide (GaP), and Gallium Antimonide (GaSb))

By Technology

- Double Hetero Structure Laser Diodes
- Quantum Well Laser Diodes
- Quantum Cascade Laser Diodes
- Distributed Feedback Laser Diodes
- SCH Laser Diodes
- Vertical Cavity Surface Emitting Laser (VCSEL) Diodes
- Vertical External Cavity Surface Emitting Laser (VECSEL) Diodes

By Application

- Telecommunication
- Industrial
- Medical & Healthcare
- Military & Defense
- Consumer Electronics
- Automotive
- Others (Media & Entertainment, Research & Education, Agriculture)

The AlGaInP segment held dominant position in the global laser diode market. It accounted for 29.68% share in 2020 and is expected to reach US\$ 12.34 million by 2028. This is owing to increasing use for doping in the laser diode industry.

In 2020, the Automotive segment accounted for the largest share of 24.87% in the global laser diode market, and is expected to be valued at US\$ 10.34 million by 2028.

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