

The laser diode



Overview

Laser diodes are electrically pumped semiconductor lasers in which the gain is generated by an electric current flowing through a p-n junction or (more frequently) a p-i-n structure. Researchers had thought “there was a hard. Here, we present the latest developments in diode-based laser systems that produce continuous-wave (CW) tun-able UV output, in which digital con-trol electronics allow for improved performance and user-friendliness. Novel frequency-doubling techniques enable higher output powers and stable. Ultec is pioneering a new frontier of ultra-wide band gap semiconductors. Following gallium nitride (GaN)—the breakthrough material behind innovations like blue LEDs and transistors for compact AC adapters—aluminum nitride (AlN), an ultra-wide band gap semiconductor, is emerging as the. Ushio Europe offers light-emitting diodes (LEDs) in the 365 nm to 1,750 nm wavelength range and laser diodes (LDs) in the 375 nm to 852 nm wavelength range. This article discusses the characteristics common to laser.



Article Content

May 11, 2026

Chapter 1 Laser Diode Basics

Abstract The basic optical, electrical, and mechanical characteristics and the working principles of laser diodes are summarized. Vendors and distributors for laser diodes, laser diode modules, and laser

May 14, 2026

Laser | Products | Ushio Inc.

Ushio's Laser Diode (LD) With over 40 years of considerable experience in photonics industry, Ushio Inc., provides varies products selection in a wide wavelength

May 08, 2026

Diode Laser & UV-LED Modules | Ferdinand-Braun-Institut

We offer the complete value chain in chip development in-house and also assemble our diode laser and UV LED chips into modules tailored to customer needs. Whether high power and efficiency, tunable

Mar 30, 2026

High-Power Diode Laser Technology and Characteristics

Puchert R, Tomm JW, Jaeger A, Bärwolff A, Luft J, Späth W (1998) Emitter failure and thermal facet load in high-power laser diode arrays. Applied Physics A 66, 483.

Oct 08, 2025

Laser Diode

A laser diode is a small semiconductor gadget that produces strong and precise light emissions through a cycle called stimulated emission. These

Mar 24, 2026

Diode laser module

We make assembling: laser driver is inserted into a metal housing, laser diode inserted into a heatsink is mounted to the housing, screw fans. Final tests: we do

Apr 20, 2026

A diode laser system for heating minerals for (U-Th)/He

We have developed a diode laser (25 W, 808 nm) system for He extraction from minerals for (U-Th)/He chronometry. The laser beam is delivered

Dec 09, 2025

UCH : Ultra Compact Hermetic laser diode modules, fiber-coupled

The UCH series is a range of high-grade multimode laser diode modules, that are fiber coupled. Designed and assembled to withstand the harshest environments, they are assembled using a

Aug 11, 2025

Laser diode

High-power laser diodes are used in industrial applications such as heat treating, cladding, seam welding, and for pumping other lasers, such as diode-pumped

Apr 15, 2026

Jenoptik JOLD-35-CPFN-1L Laser Diode Nowy zafoliowany

Jenoptik JOLD-35-CPFN-1L Laser Diode Nowy zafoliowany Stan::Nowy Dodaj do koszyka Immediate shipping Over 6.000 satisfied customers Worldwide shipping On the market for almost 10 years

Apr 03, 2026

Symmetric beam line technique for a single-wafer ultra-high energy ion ...

In order to fabricate highly sensitive image sensors, ultra-high energy ion beams, such as 5 MeV of boron, are required. SEN has developed the S-UHE, a single-wafer ultra-high energy ion

May 23, 2026

An Introduction to Laser Diodes

An Introduction to Laser Diodes Learn about the laser diode, including package types, applications, drive circuitry, and some laser diode specifications.

Feb 21, 2026

Short, shorter, shortest: Diode lasers in the deep ultraviolet

Applications in sci-ence and research benefit from diode laser technology, particularly where they can rely on improved properties of the emitted light or the tunability.

Nov 07, 2025

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What Is a Laser Diode? A laser diode is a semiconductor that uses a p-n junction for producing coherent radiation with the same frequency and phase, which is either

Jan 15, 2026

Laser Diodes - semiconductor, gain, index guiding, high

Laser diodes are semiconductor lasers with a current-carrying p-n junction as the gain medium. They are the most important type of electrically pumped lasers.

Oct 20, 2025

Laser Diode Characteristics, Precautions for Use and Drive Circuit ...

Laser diodes (LD) are semiconductor devices that convert electrical energy into high-power optical energy. These devices are currently used in the fields of telecommunications and

Oct 08, 2025

Laser diode wavelength | Gooch & Housego

Gooch & Housego Laser Diodes, ALL OF THE BRANDS on One Site, Unbiased Laser Diode Spec's Comparison Site, 370nm-15,000nm

Mar 24, 2026

Laser Diode Technology 101: What is it & How it Works

Laser Diode Technology 101: What is it & How it Works Learn about laser diode technology, including history, construction, & applications - everything you need

May 27, 2026

Laser Diode Characteristics, Precautions for Use and Drive Circuit ...

Assessing the I-L characteristics of a laser diode allows the performance and operating conditions for the device to be evaluated and the optimal operating conditions to be determined.

Sep 26, 2025

Regulating absorption loss and carrier injection efficiency in ...

Flip chip fabricate process is an efficiency method to improve output power of UV LDs. Performance of UV laser diodes (LDs) with different structure of waveguide (WG) layers is

Feb 11, 2026

HeNe Lasers VS Diode Lasers: HeNe Laser Pros and

And the most amazing thing about that is that the life time of such laser diode will increase exponentially - from specified 5000 hours to theoretically

Jan 19, 2026

Developing Deep Ultraviolet Laser Diode: Design and Improvement of

A deep ultraviolet (DUV) laser diode is a compact and efficient semiconductor device that emits laser light in the deep ultraviolet range. Its unique properties make it suitable for a wide range

Jul 23, 2025

Ushio laser diodes & LEDs, OSRAM laser diodes,

Laser diode modules at custom lasing wavelengths (from 405nm to 852nm) and power options are available to order, designed to your specifications.

Oct 06, 2025

Laser Diodes: The Technology Explained

Ushio Europe offers light-emitting diodes (LEDs) in the 365 nm to 1,750 nm wavelength range and laser diodes (LDs) in the 375 nm to 852 nm wavelength

Jan 31, 2026

UV Laserdioden

Following gallium nitride (GaN)—the breakthrough material behind innovations like blue LEDs and transistors for compact AC adapters—aluminum nitride (AlN), an ultra-wide band gap semiconductor,

Oct 21, 2025

Laser diode

The laser diode chip removed and placed on the eye of a needle for scale A laser diode with the case cut away. The laser diode chip is the small black chip at the

Oct 08, 2025

UV Laserdioden

UV Laserdioden Ultec is pioneering a new frontier of ultra-wide band gap semiconductors.

Nov 27, 2025

Laser diode emits deep UV light

Nagoya University scientists, in cooperation with Asahi Kasei Corporation, have designed a laser diode that emits deep-ultraviolet light, and have published a paper in the journal Applied Physics ...

Contact Us

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