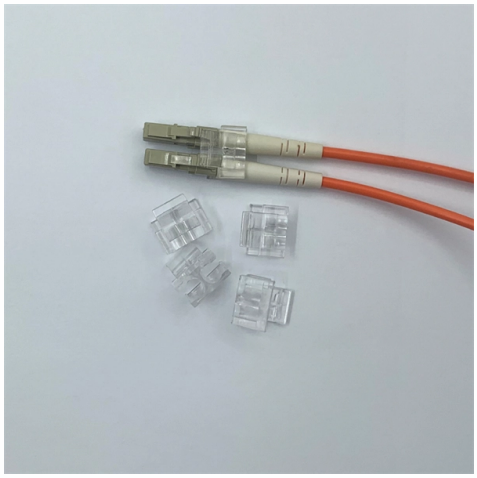
Laser Diode Series



Overview

Laser Diodes by Wavelength The Laser Diode Selection Guide provides a comprehensive list of all laser diodes available from stock, along with key specifica.

Key Takeaways

Series laser diodes are semiconductor devices designed to emit coherent light, available in pulsed or continuous modes, with broad wavelength options and flexible integration for scientific, industrial, and sensing applications.

Overview

A laser diode is a semiconductor device that emits coherent light when electrically pumped, similar to a light-emitting diode but capable of producing stimulated emission with high phase and wavelength coherence. The emitted wavelength depends on the semiconductor material, ranging from ultraviolet (UV) to near-infrared (NIR) spectra, and laser diodes are widely used in fiber-optic communications, LiDAR, barcode scanning, laser printing, and scientific research (Wikipedia). Series Laser Diode Product Lines1.

LD

H Series (PicoQuant)Offers picosecond pulsed diode laser heads with adjustable repetition rates up to 80 MHz. Wavelength coverage spans UV to NIR, supporting single-mode or multimode fiber coupling. Compatible with multiple drivers (PDL 800-D, PDL 810, PDL 828) for flexible multi-wavelength excitation.

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Applications include fluorescence lifetime imaging (FLIM), time-resolved photoluminescence (TRPL), FCS, LiDAR, and quantum optics experiments. 2. PICOPOWER™-LD Series (ALPHALAS)Provides ultrafast picosecond diode lasers with pulse widths as short as 12 ps and peak powers exceeding 2 W.

Standard wavelengths range from 375 nm to 1550 nm, with over 60 customer-specific options. Features exchangeable laser heads and drivers with frequency steps as fine as 1 Hz, suitable for time-resolved spectroscopy, fiber communications, and high-resolution laser applications. 3.

IPG Diode Laser Modules

Compact, turnkey modules with integrated driver electronics and cooling. Output options include collimators or bare fiber termination, ideal for OEM integration. Applications include metal hardening, plastics welding, medical procedures, and optical pumping.

Key Features

Pulse Control: Many series laser diodes offer picosecond or nanosecond pulsed operation for precise timing. Fiber Coupling: Single-mode, polarization-maintaining, or multimode fiber options allow flexible integration into optical systems. Wavelength Flexibility: Standard and custom wavelengths enable use across UV, visible, and NIR ranges.

Driver Compatibility: Integrated or external drivers allow adjustable repetition rates and pulse shaping. Applications: Scientific research, LiDAR, time-resolved spectroscopy, industrial processing, and medical devices.

Summary

Series laser diodes combine highly controlled emission, flexible wavelength selection, and precise pulse timing to meet the needs of both research and industrial applications. Whether for time-resolved fluorescence, LiDAR, or optical pumping, these devices provide reliable, compact, and energy-efficient solutions for modern photonics systems.

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Article Content

Laser Diodes by Wavelength

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Laser Diode Tutorial

The information contained within this tutorial will give all the general information necessary to create an excellent laser diode system. For specific questions about laser diodes, mounts, and drivers please

Laser Diodes – semiconductor, gain, index guiding, high

The article details the many types, from small edge-emitting and surface-emitting diodes (VCSELs) to single-frequency lasers like DFB and DBR lasers, external

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

This is a document on the fundamentals of laser diodes explains the characteristics of laser light, package structure, and how to read the characteristics.Examples of laser diode driving

Diode Laser Components | Coherent

Get reliable, vertical and horizontal diode laser stacks and two-dimensional arrays, with power into the multi-kW range, for pumping,

Laser Diode chips

Laser diodes with high reliability for industrial lasers and direct diode applications. Mounted on submounts, coolers, with integrated optics.

CrystaLaser GCL532 Series 532 nm Diode-Pumped Solid-State

Overview The CrystaLaser GCL532 Series is a family of compact, air-cooled, diode-pumped solid-state (DPSS) continuous-wave (CW) lasers emitting at the fundamental wavelength of 532 nm.

Laser Diodes | Components to Systems | UV-LWIR

A Laser Diode or semiconductor laser is the simplest form of Solid-State Laser. Laser diodes are commonly referred to as edge emitting laser diodes because

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Microphotons CVD-167 High-Power Pulsed Laser Diode, 905 nm, 100

Overview The Microphotons CVD-167 is a high-reliability, hermetically sealed pulsed laser diode engineered for demanding time-of-flight (ToF), LIDAR, and active illumination applications requiring

Evolase PLD-NS Compact Nanosecond Pulsed Laser Diode Driver

Overview The Evolase PLD-NS is a compact, high-performance nanosecond pulsed laser diode driver engineered for precision seeding and time-resolved optical systems. It operates on the principle of

OMM-6810B Optical Power and Wavelength Meter

The OMM-6810B Optical Multimeter coupled with the OMH-6700B Series Optical Measurement Heads, provide the flexibility to easily and accurately measure the optical power of short wavelength lasers,

Wuhan Raycus Fiber Laser Technologies Co., Ltd.

Wuhan Raycus Fiber Laser Technologies Co., Ltd. Wuhan Raycus Fiber Laser Technologies Co., Ltd. (hereinafter referred to as "Wuhan Raycus") is the first Chinese enterprise engaged in the research,

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Laser Engravers and Cutters | LaserPecker Machines

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