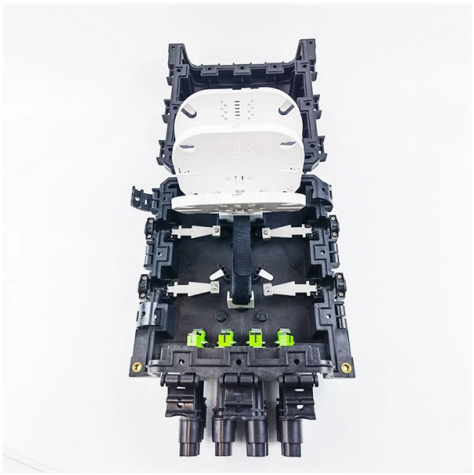
# Series laser diode



## Overview

We also offer optoelectronics mounts that directly accommodate many of our laser diode package options.

## 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

We also offer optoelectronics mounts that directly accommodate many of our laser diode package options. The Laser Diode Selection Guide provides a

Laser Diode Tutorial

The purpose of this laser diode tutorial is to provide the information necessary to create a long lifetime, stable laser diode system. Much of what will be discussed will be in general terms of laser diode

Laser Diodes – Mouser

Laser diodes are available at Mouser Electronics from industry leading manufacturers. Mouser is an authorized distributor for many laser diode manufacturers including ams Osram, KYOCERA AVX,

LDH Series: Picosecond Laser Diode Heads | PicoQuant

The LDH Series offers a broad portfolio of picosecond pulsed diode laser heads spanning wavelengths from the UV to the NIR. Each diode laser head combines

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.

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 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 Lasers

Compact and virtually maintenance-free, these diode lasers are a flexible and cost-effective option for a variety of applications that do not benefit from the higher focus provided by fiber lasers.

The 7 Best Sites for Free Laser Cut Files (SVG & DXF)

Diode lasers like the Longer Ray series or compact machines such as the Longer Nano are a popular choice for hobbyists and makers. With power

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Wuhan Raycus Fiber Laser Technologies Co., Ltd.

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

Laser Machine Ortur Laser Master 3 Diode Laser

Diode Laser Ortur Laser Master 3 is a high-precision laser machine that allows engraving on wood, metal, and acrylic in colors. Shop 10w, 20w or 40w laser

Evolase PLD-CW-2000H-ZIF Precision Constant-Current Laser Diode

What laser diode packages does the PLD-CW-2000H-ZIF support? It is mechanically and electrically optimized for standard 10-pin and 14-pin butterfly housings with integrated thermistors and monitor

OBIS LS/LX

OBIS LS/LX are the original compact smart lasers, offering plug-and-play simplicity with over 30 wavelengths from the UV to near-IR plus optional fiber delivery.

Home | Hamamatsu Photonics

The official website of Hamamatsu Corporation whose mission is to advance science and industry through photonic technologies. Our products include optical sensors and components, cameras, light

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