

Integrated Laser Diode Models and Specifications



Overview

Diode Lasers IPG can offer lasers with customized specifications upon request. Product availability may vary by region. IPG Diode Laser Modules Laser Diode.

Key Takeaways

Integrated laser diodes are available as turnkey modules, diode bars, and single-emitter systems with power outputs from milliwatts to kilowatts, covering wavelengths from visible to near-infrared, designed for industrial, scientific, and OEM applications. Types of Integrated Laser Diodes

1. Diode Laser Modules (DLM) and Rack Units (DLR)

- Offered by IPG Photonics, these modules combine highly reliable single-emitter diodes with delivery fibers and integrated driver electronics and cooling systems .
 - Output options include collimators, bare fiber terminations, and red guide lasers.
 - Applications: heat treatment, metal hardening, plastics welding, medical procedures, and optical laser pumping.
 - Power efficiency: DLR units exceed 40% energy efficiency, with stabilized wavelengths and narrow emission linewidths .
- #### 2. Single-Emitter and Diode Bars

- TRUMPF provides single-emitter diodes and diode bars for high-reliability applications such as LiDAR, fiber laser pumping, and industrial additive manufacturing .
- Wavelength range: 790 nm to 1100 nm.
- Power range: 100 W to 600 W into fiber cores of 100 μm to 230 μm , with options for vertical stacks and multi-kW arrays .
- Form factors: unmounted chips, mounted on ceramic submounts, or integrated with proprietary coolers. 3. Custom and OEM Modules
- ProPhotonix offers a laser diode selector tool to specify wavelength, power, and package, with access to datasheets and technical support for system integration .
- Custom modules can include optics, drive electronics, and mechanical components for precise integration into OEM systems. 4. General Laser Diode Modules
- DigiKey lists a wide range of laser diodes and modules with power from

Article Content

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Laser Diodes and Pump Modules

From our vertically integrated laser diode manufacturing location in New Jersey, USA, we supply the pump diodes for all TRUMPF

Laser Diodes

With over 400 standard packages and three decades of experience, CEO's laser diodes have been used

Laser Diode and Fiber Coupled Laser Diode modules and Systems

Our fiber coupled laser modules and systems are offered with optional laser collimation optics attached to the output fiber, allowing

Laser Diode Selector

The laser diode selector allows you to specify the wavelength, power and package and download

Laser Diode Selection Guide (ALL MANUFACTURERS)

This allows users to compare laser diodes from all manufacturers and find their best options.

Laser Diode chips

Discover the industry-leading reliability and performance of TRUMPF's laser diode chips. We offer laser diodes to meet your specific

Diode Laser Components | Coherent

Get reliable, vertical and horizontal diode laser stacks and two-dimensional arrays, with power into the

IPG Laser Systems Datasheets | Download Technical Specifications

View our complete library of datasheets to learn more about each IPG laser system's technical specifications and applications.

Laser Diodes and Modules

These laser diode modules incorporate highly integrated sophisticated electronics for laser drive and

Laser Diode

A laser diode (LD) is defined as a forward-biased semiconductor diode that emits coherent light when an electrical current stimulates

Laser diode

The laser diode chip removed and placed on the eye of a needle for scale A laser diode with the case cut

Design of integrated laser diode driver for 3D-depth sensing ...

These specifications introduce new challenges in the design of a compact, low-cost and efficient Laser Diode Driver

Laser Diode Modules | CW & LD Modules | UV-LWIR | Shop RPMC

Laser Diode Modules (LD Modules) provide a fully integrated laser solution, combining a laser diode, lensing, thermal management,

High Power Laser Diode at 808, 915 or 976 nm

High power laser diode from 10 to 450 W at 808, 915, 976 or 1064 nm ... Turn-key integrated laser diode module called "CCMI" for 10

Diode Laser Modules | Coherent

Coherent Diode Laser Modules are compact, economic modules that provide the beam

Laser Diodes | Opto Electronics | ROHM Semiconductor

Laser Diodes Semiconductor lasers are opto devices often referred to as laser diodes or LDs. ROHM is the industry's largest

1310 nm laser diode: 7 models up to 500mW

1310 nm laser diode models up to 500mW offered as stock items or associated with a turnkey Driver.

Laser Diode Specifications & Characteristics Explained

Understand laser diode specifications and characteristics and how they relate to real circuits and applications with tips on the

Laser Diode Modules

Laser diode modules are modules containing diode lasers, and possibly also some optics, cooling devices, electrical elements, etc.

CW Semiconductor Lasers — Continuous Wave Sources

A continuous-wave (CW) semiconductor laser is a diode laser designed to emit a steady, time-invariant optical output rather than

IC Laser Diode Controllers in SMT Packages

These drivers are offered in constant current and constant power models. Table 1.1 summarizes the key

IPG Laser Systems Datasheets | Download Technical Specifications

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1450 nm laser diode – CW or Pulsed – 3 models DFB and Bragg

These 1450 nm laser diodes are offered as stock items or associated with a CW or pulsed laser diode driver. Two single-frequency

CW Lasers

CW Lasers Designed for Integrators, adored by Scientists! MatchBox laser modules are widely configurable and deliver high-end

Laser Diode Selection Guide (ALL MANUFACTURERS)

We try to help our community of laser scientists & engineers find the best products for their projects by hosting a free Open-Index

Fiber-Coupled Modules | Coherent

Laser Components and Accessories Fiber-Coupled Modules Simplify implementation of diode lasers in fiber and solid-state laser

Premier Laser Diode Modules

Premier Laser Diode Modules contain an industrial quality laser diode with built-in monitoring photodiode. An efficient processor

980 nm laser diodes

These fiber-coupled 980 nm laser diodes are offered as stock items or associated with a CW or pulsed Turn-Key Laser Diode Driver.

Tunable Diode Lasers

The unprecedented passive stability of the DLC pro simplifies the use of single-frequency tunable diode lasers dramatically. For

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About MatchBox Series

About MatchBox Series The MatchBox Series is an award winning, powerful, and widely configurable laser

Driving laser diodes: Comparing discrete vs. integrated circuits

In low power laser diode modules the designer has the option to use the classical discrete solution or take advantage

Laser Diode Drive Circuit Design Method and Spice Model

Laser Diode Drive Circuit Design Method and Spice Model ROHM offers laser diodes (LDs) for Light Detection and Ranging (LiDAR).

ADP5202 (Rev. Sp0)

The ADP5202 is a single channel, laser diode driver with an integrated, N channel, metal-oxide semiconductor field effect transistor

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Continue your research online:

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

