

Linear Cross Laser Diode



AI Overview

A linear cross laser diode projects precise laser lines or crosshairs for alignment, measurement, and imaging applications, available in various wavelengths, powers, and fan angles. Overview A linear cross laser diode is a semiconductor laser device that produces a straight line or cross-shaped laser projection instead of a single dot. It combines a laser diode with optical elements such as aspherical lenses and cross line generators to create a uniform, sharply defined line or cross pattern. These modules often include an integrated driver circuit, making them self-contained and easy to use in industrial or electronics projects.

Key Specifications
Wavelengths: Commonly available from 440 nm (blue) to 830 nm (infrared), with red (around 635–650 nm) and green (around 520–532 nm) being popular for visibility.
Output Power: Ranges from low-power modules (0.4 mW) to higher-power industrial modules (up to 30 mW) depending on application.
Fan Angle: Determines the spread of the line; typical angles include 5°, 10°, 25°, and 45°.
Focus Options: Modules may offer adjustable focus or fixed focal lengths (e.g., 10 cm, 20 cm, 40 cm, 90 cm) for precise line projection.
Laser Class: Safety classifications include Class 1M, Class 2M, and Class IIIa, depending on power and intended use.
Modulation: Some modules support TTL modulation up to 10 kHz for pulsed or synchronized applications.

Applications
Linear cross laser diodes are widely used in:
Industrial alignment: Positioning, leveling, and machine calibration.
Machine vision and image processing: Providing reference lines for cameras and sensors.
3D scanning and digital data acquisition: Generating precise reference patterns for measurement.
Embedded electronics projects: Small modules with integrated drivers are suitable for DIY or robotics projects.
Medical and scientific applications: Non-contact measurement and optical experiments.
Advantages
High precision: Produces straight, sharply defined lines or crosses.
Compact and robust: Many modules come in stainless steel or anod...

Article Content

Laser diode

While initial diode laser research was conducted on simple P-N diodes, all modern lasers use the double-hetero-structure implementation, where the carriers and

Cross Laser Diode Modules: UCL Series

Unique properties include a perfectly straight cross, compact anodized aluminum body, fine adjustable focus, clean beam, low divergence, high boresight

Line Laser Module & Laser Line Generator

Combines red (635/650nm), green (520nm), and blue (450nm) laser lines in a single module. Suitable for laser leveling, indicators, and multi-color applications.

Laser Diode

A laser diode (LD) is defined as a forward-biased semiconductor diode that emits coherent light when an electrical current stimulates recombination of electrons and holes at the p-n junction. It consists of

Chapter 2 Laser Diode Beam Basics

Single transverse mode laser diodes are most widely used. Their beams are elliptical, astigmatic, and have large divergence. These characteristics make laser diode beams difficult to handle. In this

Laser Diode

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

Cross Line Laser Modules

Unique properties of cross line laser modules include a perfectly straight cross, compact anodized aluminium body, fine adjustable focus, clean beam, low divergence and high boresight accuracy. The

Laser line Projectors for positioning tasks | LAP

Why LAP positioning lasers ? Manually assembled and tested at our headquarters in Germany, LAP industrial line lasers, point lasers and cross lasers offer over 30,000 hours of durability, robustness

Cross Laser Diode Modules | World Star Tech

Cross Laser Modules Industry-leading cross laser laser module, designer of laser diode systems and photonics instrumentation. Our product line includes an extensive range of laser diode modules and

Technical note / Si photodiodes

Si photodiode arrays consist of multiple elements formed in a linear or two-dimensional arrangement in a single package. These photodiode arrays are used in a wide range of applications such as light

Cross Laser Diode

You have some frickin' sharks at your lair, and you're thinking "it would be really great if I could attach some lasers to them" and then you see these little laser

Cross Laser Diode

These encapsulated laser diodes are Class IIIa 5mW, with a 650nm red wavelength. They can be driven from 2.8V to 5.2V so they're great for your embedded

Cross Laser Module | Berlinlasers

When users are selecting high output power cross laser module, even though laser tube temperature increases seriously and rapidly, this cross laser alignment still gets constant output

LASER L A

THE RIGHT SOLUTION FOR EVERY APPLICATION The field of application for lasers is as manifold as the use of rulers, templates or measuring tools. You have a wide variety of attributes to choose from:

Green Cross Laser Diode Module Online | World Star Tech

Back World Star Tech Green Cross Line Laser Modules are fully self-contained with integrated laser driver, laser diode, surface polished glass aspherical lens and

Laser Polarization: A Complete Guide | Edmund Optics

FrequentlyFrequently applied in laser resonators consisting of laser crystals with large cross-sectional area, Brewster plates introduce polarization losses for the s-component and force the laser beam to

Amazon : Line Laser Module

Contains at least 50% recycled material. Global Recycled Standard (GRS) certified products contain recycled content that has been independently verified at each stage of the supply chain, from the

Amazon : Line Laser

Laser Level Line Tool, Multipurpose Laser Level Kit Standard Cross Line Laser leveler Beam Tool with Metric Rulers 8ft/2.5M for Picture Hanging cabinets Tile Walls by AikTryee.

650nm Red Cross Line Laser Module

Compact designed 650nm red cross line laser module employs mature laser tech applied 650nm red laser diode as its cross hair line emitting source. Integrated with quality glass cylindrical lens, red

What is Cross Line Laser Diode Module□

Traditional cross line laser diode module solution is to select suitable cross line lens, and integrate it with laser diode, drive circuit and housing case with proper adjustment. In this way, the straight, clear and

Design of Nanosecond Pulse Laser Diode Array Driver Circuit for

Based on the single pulse laser diode drive circuit, this paper innovatively designs a circuit that includes modules such as a boost circuit, linear power supply, high-speed gate driver,

Contact Us

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