

A close-up photograph of a gold-colored metal component, likely a laser diode package. The word "DILAS" is embossed in a stylized, sans-serif font on the surface. The component features several circular holes and a threaded hole. The lighting is warm, highlighting the metallic texture and the precision of the manufacturing.

DILAS

DILAS
The diode laser company.

High-Power Diode Laser Expertise



DILAS, the diode laser company, manufactures high-power diode laser components and systems in a wide range of output powers and wavelengths including fiber-coupled, direct beam and integrated solutions.

DILAS' strengths in quality engineering, process control, product development and volume manufacturing of a world-class product line are utilized by multiple industries including medical, diode-pumped solid-state laser, defense, graphic arts and materials processing.



Technology Advantage



Our innovations in design of diode laser bars cover a wavelength spectrum from 630nm to 2200nm. DILAS continuously monitors, tests and qualifies a broad range of semiconductor diode laser material for quality, longevity and reliability.

These strict performance requirements ensure the highest quality consistency and access to state-of-the-art diode laser bar technology from major manufacturers worldwide for all common wavelengths.



From single bars to multi-bar fiber-coupled modules, DILAS serves customers with innovations unmatched in the industry.

Conduction-Cooled Single Bars



From industry standard inch 1"x1" footprint heat sinks to narrow heat sink designs for side-by-side arrangements, DILAS offers the broadest range of reliable conduction-cooled easy-to-integrate diode laser bars.

These are available as free-beam, fast-axis collimated, fully collimated or fiber-coupled modules and in open design or sealed housings, combined with appropriate soft solder or CTE-matched hard-solder technologies. Used for diode-pumped solid-state lasers (DPSSL) in industry and defense, such highly reliable devices are the key for many mission-critical applications.



DILAS offers the widest range of conduction-cooled single bar configurations on the market.

Fiber-Coupled Modules



Easy to use, fiber-coupled modules are the foundation in many applications. DILAS' fiber-coupled diode laser modules are a main component in applications such as pump sources for rod, fiber and disk lasers, therapeutic and diagnostic medical devices, defense, materials processing and graphic arts.

The compact size provides end users with a manageable footprint for integrating the device into any OEM system. With fiber core diameters as small as 100 μ m for single diode laser bars and scalable power levels for multi-bar modules up to kilowatt level, the product line of fiber-coupled modules offers highest brightness and power at all wavelengths, for all applications.



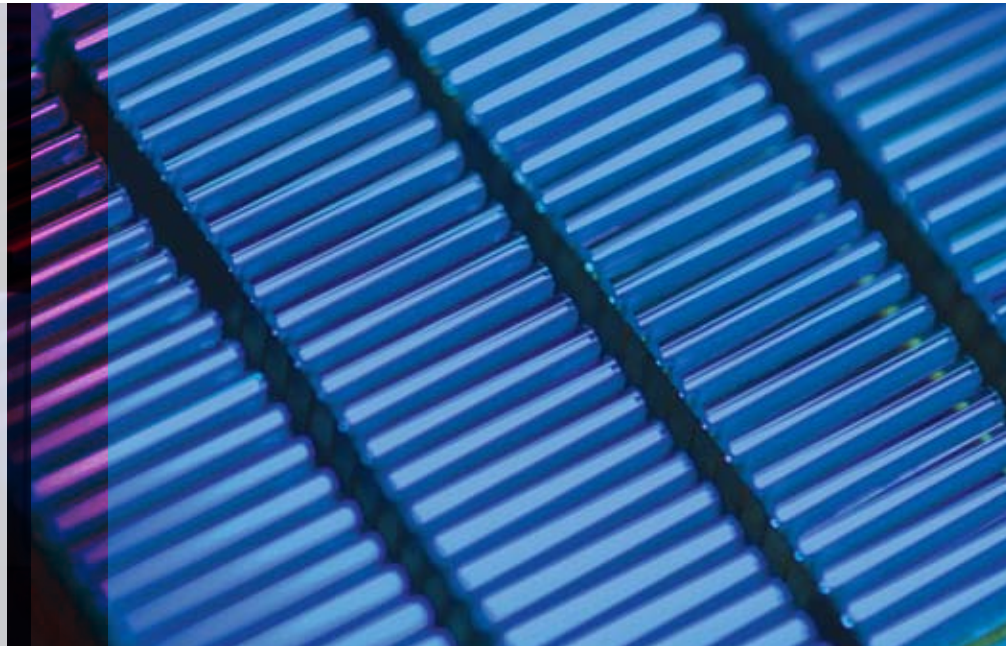
High coupling efficiencies available in a wide range of powers, wavelengths, fiber core diameters and configurations.

QCW Stacks



Used as pumps for target designators and range finders, DILAS' QCW stacks are field proven in countless regions, worldwide. These hard-soldered devices have been tested at high temperatures, under thermal cycling as well as with shock and vibration. Hence, these pulsed diode laser modules offer highest robustness and quality you can rely on.

Stacks in this powerful QCW product line are also utilized in large assemblies to produce high-energy laser beams for radiation physics and to facilitate laser-driven fusion for energy production.



Conduction-cooled QCW stacks are designed to meet the stringent demands of defense applications.

Water-Cooled Vertical Stacks



As the first to commercialize copper micro-channel heat sinks, DILAS' experience is unrivaled. With several hundred thousand units in the field, DILAS supports a variety of applications and customers. Water-cooled stacks offer the highest brightness because of dense packaging techniques and the best thermal impedance. Power levels up to >200W CW per bar are supported. With the largest selection of housings in the market, DILAS can configure either vertically stacked or two-dimensional arrangements according to customer specifications with fast-axis or both-axis collimation.

Applications range from direct materials processing to medical and slab or disk laser pumping of laser crystals.



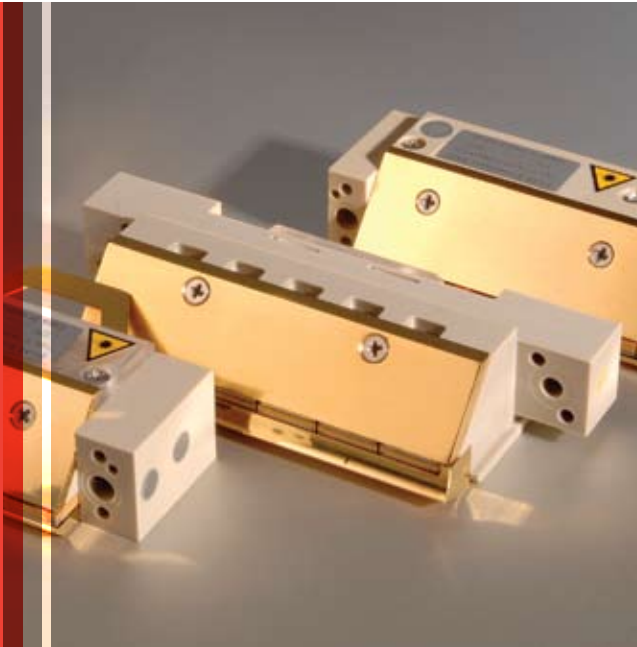
DILAS' extremely efficient water cooling enables CW output powers up to 200W per bar.

Water-Cooled Horizontal Stacks



DILAS offers a variety of horizontal diode laser modules from two to thirteen bars with standard wavelength of 808nm for CW or QCW operations. These extremely powerful arrays are used primarily for pumping rod lasers. With a history of experience and proven material selection, these modules are long-lasting and a reliable part of day-to-day industrial applications.

DILAS' horizontal stacks are utilized in the worldwide production of automotive and flat-panel manufacturing, as well as in the welding of medical and industrial devices.



These stacks deliver maximum power density for side pumping of solid-state laser applications.



Diode Laser Systems



DILAS Industrial Laser Systems offers full-featured, fiber-coupled diode laser systems for the industrial market for applications like soldering in photovoltaics and electronics, welding in the plastics and metal industry, as well as for hardening or brazing.

Worldwide support through application and service engineers, as well as dedicated application laboratories for process proof and development provide our customers with the reassurance and technical advantages they need to focus on their production.



Diode Laser Systems' Accessories



With ease of integration, our wide variety of sophisticated accessories supports high-quality production lines for industrial applications, including devices for quasi-simultaneous welding and pyrometer-based process control and flexibility:

- ▶ Processing head containing camera and pyrometer for process control and documentation.
- ▶ Simple imaging optics.
- ▶ Galvo scanner for flexible use of the laser beam that can be combined with a pyrometer, offering highest flexibility and on-line process control and documentation.

Processing Head



Imaging Optics



Galvo Scanner



Advanced industrial laser solutions facilitate powerful manufacturing efficiency.



DILAS has built its reputation on the widest range of products in the market. Coupled with DILAS' depth of experience and broad engineering expertise, you can count on us to deliver the best solutions. Whether it is a design of application-adopted chip technologies, extra-large two-dimensional diode laser panels for fusion laser facilities, or homogenized beams at extreme powers, DILAS has the strength and the capabilities to produce innovative solutions according to customer's specification.

DILAS' goal is to deliver the best diode laser solutions and customer service on a global scale.

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