



# 15 years of diode lasers: Jenoptik invested in the new industrial laser at an early stage and is now the worldwide leader in quality.

Jenoptik's activities in the field of diode lasers began in April fifteen years ago. In light of the progressive success, the credit is given entirely to their customers, suppliers and employees.

For fifteen years Jenoptik has been developing, producing and marketing high-power diode lasers. The Diode Laser business unit in the Lasers & Material Processing division of Jenoptik is currently the leader in quality for producing industrial high-power diode lasers with a long life expectancy and high reliability. In the process over the last fifteen years, Jenoptik has gone from a provider of goods for laser research to offering large-scale products, all the while an innovator pushing for the industrial use of this efficient type of laser.

Jenoptik took over all areas of the high-power diode laser business from Heimann Optoelectronics of Wiesbaden, Germany on April 1, 1993 resulting in the founding of JENOPTIK Laserdiode GmbH. After two years, the company, which then had eighteen employees, moved its headquarters from Wiesbaden to Jena to take on the challenge of being the first German business to mass produce high-power diode lasers specifically for industrial usage. Today, the Diode Laser business unit of the Lasers & Material Processing division of Jenoptik boasts 130 employees and fifteen times the sales volume of ten years ago.

A crucial step in achieving this began in 1995 through the intensive technological partnership with the Ferdinand-Braun-Institut für Höchstfrequenztechnik in Berlin-Adlershof, developers of the high-quality semiconductor material needed for high-power diode lasers. Through this cooperation, Jenoptik Diode Lab was founded in 2002 in Berlin-Adlershof to produce diode laser bars and currently has 24 workers.

The high-power diode lasers produced by Jenoptik are used in the most diverse manners—from pumping solid-state and fiber lasers to welding, cutting and soldering metal as well as for plastic welding and even as a direct beam source for medical technology.

The optimizing of the semiconductor material as well as of the mounting and conjoining techniques made it possible to raise the optical power output from just a few watts to 120 W in continuous



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wave mode and 300 W in quasi continuous wave mode with the highest life expectancy. This makes Jenoptik's diode lasers the benchmark for performance, quality and cost effectiveness.

Demanding customers the world over will be able to be convinced of this for years to come—a redefined focus on customer needs is driving development, production and sales. The “bundles of power” are sold around the globe with an area of business being present directly or through a distributor in important markets such as Japan, China, USA, Italy, France and Israel.

Jenoptik will celebrate fifteen years of diode laser activity starting on Friday the 18<sup>th</sup> of April, 2008 with an anniversary celebration and an in-house trade show. An exhibition will accompany comprehensive lectures on subjects centered on the diode laser in the headquarters of Jenoptik Laserdiode in Jena-Göschwitz.

Jena, April 18, 2008

## Jenoptik's Lasers & Material Processing division

Jenoptik, with its Lasers & Material Processing division, is one of leading suppliers of laser technology and is specialized in innovative solid-state lasers such as disk lasers, diode lasers and fiber lasers. Laser modules, components and systems along with complete laser processing systems for material processing are developed, manufactured and marketed. Jenoptik has the entire supply chain at its disposal—from semiconductor material to laser pumps and laser systems over to system and automated technologies for complete laser processing systems making laser processes available to a multitude of customer demands.

In the **Diode Laser business unit** of the division, Jenoptik develops, produces and markets high-power diode lasers. This new type of laser offers a high level of efficiency from low volume. They serve first and foremost as a pumping source for solid-state and fiber lasers as well as a direct beam source for medical technology and material processing. This type of laser is regarded as one of the most promising because of its industrial usage potential. Jenoptik encompasses the entire supply chain for high-power diode lasers—from the development and production of the semiconductor material on-site in Berlin next to their technology partner Ferdinand-Braun-Institut für Höchstfrequenztechnik to the mounting of laser bars, fiber coupling and beam guiding optics over to laser usage including pumping disk lasers.



# 15 Years of diode lasers at Jenoptik

- 1993 Takeover of the high-power diode laser business from Heimann Optoelectronics of Wiesbaden and founding of Jenoptik Laserdiode
- 1995 Headquarters move from Wiesbaden to Jena
- Beginning of the partnership with the Ferdinand-Braun-Institut für Höchstfrequenztechnik (FBH) in Berlin-Adlershof
- 2001 Strategic partnership with Trumpf GmbH + Co. KG assuming of 25.1% of the shares of JENOPTIK Laserdiode GmbH
- Opening of new production facility in Jena-Göschwitz with 2,000 sq. m of effective space, thus increasing production capacity by five
- Implementation of a comprehensive quality management system conforming to that of a chip manufacturer
- 2002 Founding of Jenoptik Diode Lab as a spin-off of FBH
- 2005 Founding of a cooperative company, thus creating a direct presence in Japan
- Record power output of 454 W cw from a semiconductor bar during the BMBF-Project BRILASI
- 2006 Breaking the power barrier of a half of a kilowatt per bar
- Opening of a semiconductor plant for semiconductor material for diode lasers in Berlin-Adlershof
- Expansion of expertise in fiber coupling through the takeover of unique mode of Jena
- 2007 Breaking the power barrier of 1 kW of optical power in qcw mode from one 10 mm bar



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