BlazingFast Photonics

Disc Laser Diode

Overview

A disk laser or active mirror (Fig.1) is a type of diode pumped solid-state laser characterized by a heat sink and laser output that are realized on opposite sides of a thin layer of active gain medium. Despite their name, disk lasers do not have to be circular; other shapes have also been tried. The thickness of the disk is considerably smaller than the laser beam diameter. Initially, this laser cavity co. Active mirrors and disk lasersInitially, disk lasers were called active mirrors, because the of a disk laser is essentially an optical with greater than unity. An active mirror is a thin disk-shaped double-pass. The power of such lasers is limited not only by the power of pump available, but also by overheating, (ASE) and the background. To avoid overheating, the size should be i. In order to reduce the impact of ASE, an anti-ASE cap consisting of undoped material on the surface of a disk laser has been suggested. Such a cap allows spontaneously emitted photons to escape from the ac.

Article Content

Recent advances in ultrafast semiconductor disk lasers

The performance of ultrafast semiconductor disk lasers has rapidly advanced in recent decades. The strong interest from industry for inexpensive,

Dicing by Laser (Laser Dicing) | DISCO Technology

There are primarily two types of laser oscillation for processing: continuous wave (CW) oscillation and pulse oscillation. The pulse oscillation process can minimize

Ultrafast thin disk laser – Ultrafast Laser Physics | ETH

A TDL is a diode-pumped solid-state laser with a gain crystal that has the shape of a thin disk and is used in reflection (as an "active mirror") in a resonator. Typically,

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Laser Diode

Beyond that, new diode pumped solid state lasers as disc or fibre lasers have appeared, which do not have a conventional, i.e. lamp pumped counterpart. Furthermore, diode laser technology itself has

Laser diodes from CD-RW drives can cut and burn!

Warning! Laser diodes from CD-RW emit invisible laser radiation and they are very dangerous! Their light can permanently damage the eyes. You must never look

DISK LASERS: YAG is redefined through the diode

In addition to its much better beam quality, the disk laser yields another important benefit compared to diode-pumped rod lasers: disk lasers allow longer fiber

Semiconductor Disk Lasers: a scalable short wavelength

Disk lasers are marked by their superior scalability and the opportunity to easily integrate nonlinear optical elements inside the laser cavity.

Laser Diode Technology 101: What is it & How it Works

Laser Diode Technology 101: What is it & How it Works Learn about laser diode technology, including history, construction, & applications - everything you need

Harvesting a Laser Diode From an Optical Drive

Harvesting a Laser Diode From an Optical Drive: Have you ever wondered how powerful that tiny little laser is in your CD, DVD, or BluRay drive/burner? Well

Powerful laser diodes from DVD-RW drive

Warning! Laser diodes from DVD-RW drive are emitting visible and invisible laser radiation and they are extremely dangerous! Their light can permanently damage

Photonic Frontiers: Disk Lasers: Higher powers and

The other side of the centimeter-scale disk is pumped with diode laser beams spread across the surface. Now scaled to multi-kilowatt powers, thin-disk lasers compete

Laser Company for Industrial Laser Solutions | LASERLINE

The leading laser company for integrated & customized diode laser manufacturing solutions for various industries & applications.

What is a disk laser?

It is pumped via flashlamps or diodes, and the generated laser beam is parallel to the axis of the rod. Because the conversion of pump light into laser light occurs at a low optical efficiency, the rod heats

Disk Laser: Components, Advantages, and Limitations

A disk laser or active mirror is a diode-pumped solid-state laser with a heat sink and output on opposite sides of a thin sheet of active gain medium. Disk lasers are important because

Thin-disk Lasers – disc, active mirror, high-power laser,

The pump source of a thin-disk laser is usually based on high-power diode bars, either in fiber-coupled form or with free-space power delivery. A typical pump

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.

Disk Laser: Components, Advantages, and Limitations

A disk laser differs from a laser disc, an obsolete optical storage medium used to play video and audio, similar to DVDs but larger and analog in format. Disk lasers offer high beam quality,

Frequency-doubled diode-pumped disk lasers

Jenoptik has pioneered development and commercialization of diode-pumped thin disk laser technology and has over 25 years experience in the design and

Compact diode-pumped tunable single

Optically pumped external cavity semiconductor disk laser (SDL) combines the characteristics of semiconductor laser and solid-state laser, and has important research value. In this

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Thin-disk Lasers – disc, active mirror, high-power laser,

Thin-disk lasers are solid-state lasers with a very thin disk of laser-active material as the gain medium. They achieve high output powers with good beam quality.

What is a disk laser?

Disk (or disc) lasers are solid state lasers, (see also FAQ on ''What is a solid state laser'') in which the lasing medium generally consists of a thin slice or disk of Ytterbium-doped Yttrium-Aluminium Garnet

An Introduction to Laser Diodes

An Introduction to Laser Diodes Learn about the laser diode, including package types, applications, drive circuitry, and some laser diode specifications.

History, principles and prospects of thin-disk lasers

J. Neuhaus et al., Subpicosecond thin-disk laser oscillator with pulse energies of up to 25.9 microjoules by use of an active multipass geometry, OPTICS EXPRESS 16 (2008)

Diode-pumped Nd:YAG thin disc laser | IEEE Conference Publication ...

Summary form only given. The thin disc laser concept has the capability for efficient and scalable high power operation with high beam quality. Using Yb:YAG as active material 346 W in multimode CW

DISK LASERS: YAG is redefined through the diode

With the disk laser, because of its small YAG volume, the back-reflected energy produces only negligible lasing, so fiber lengths are not limited by this

Semiconductor Disk Lasers: a scalable short wavelength

The realization of the disk laser concept with the InGaN material system seems promising to overcome the current limitations concerning output

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