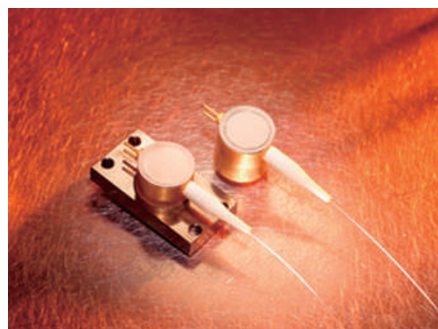


Fibre-coupled laser diodes with unrivalled performance



JDS UNIPHASE

www.jdsu.com

JDS Uniphase, a major supplier of optoelectronic components to the telecoms sector and other industries, is now offering a new series of high-power fibre-coupled laser diodes for pumping fibre lasers, as well as other applications. The 6397-L3 series of laser diodes are single emitters that deliver 8.0 W of output power from a fibre with a core diameter of 105 µm into a 0.2 numerical aperture at wavelengths of 915, 940 and 975 nm. The company also claims that by using multiple 6397-L3 laser diodes and a multimode fibre coupler or fibre bundle in a distributed architecture, hundreds of watts of highly reliable pump power can be easily achieved. Apart from pumping up fibre lasers, the product also suits use for materials processing, graphic arts, medical and dental applications, remote power generation and pyrotechnic ignition.

Rack system offers kilowatt output

www.lumics.com

Lumics, a Berlin-based manufacturer of laser-diode modules, has released a 1-kW output power pump laser diode. The LU0940C1000 is an industry-grade system designed for laser pumping and materials-processing applications. The device is composed of multiple single-emitter laser diodes that are hermetically sealed, fibre-coupled and packaged into a 19-inch rack that features the necessary water cooling and drive electronics. The laser output is available at wavelengths of 915, 940, 960 or 975 nm. The system can run on an input power of 110 V or 220 V, a.c., and comes with a diode mean time-to-failure of 400,000 hours. Lumics claims that the device offers very high reliability, owing to its proprietary laser-facet passivation technology. The firm has also introduced a fibre-coupled laser module that offers

8 W of output power at a wavelength of 915 nm. The device measures 22 × 11 mm and has an electrical-to-optical power efficiency of more than 60% and a rated lifetime of 100,000 hours.

Diode exploits passive cooling

www.jenoptik-dlg.com

Jenoptik Diode Lab, a subsidiary of the German semiconductor laser specialist Jenoptik Laser Diode, has released a passively cooled laser diode. The device, which is packaged in an industry-standard conduction-cooled mount measuring 25 × 25 mm, emits 80 W in continuous-wave mode or 200 W in quasi-continuous-wave mode, at a wavelength of 808 nm. Continuous-wave powers of up to 100 W at 915 nm and 976 nm are also available. Typical operating characteristics are a drive current of 112 A and a voltage of 1.8 V. Fast axis collimation of the laser output is also available to ensure that 90% of the output power falls within an angle of 0.5°. Applications include pumping of solid-state lasers, materials processing and medical tasks.

Coaxial lasers target telecoms

www.laserdiode.com

Laser Diode Incorporated (LDI), part of the Tyco Electronics Division, has announced the addition of a high-power uncooled coaxial packaged laser to its SCW series of laser products. Devices emitting at wavelengths of 1,310, 1,550 or 1,625 nm, with output powers of up to 200 mW, are on offer. The fully hermetic 3-pin design suits applications in optical time-domain reflectometry, spectroscopy and photon counting. The coaxial laser is RoHS (the Restriction of Hazardous Substances Directive) compliant and fibre coupled with 9/125 µm fibre. Laser Diode Incorporated says that the cooled 14-pin digital-image-processing, Butterfly package options, as well as custom screening and qualification, are available on request.

Laser-diode platform promises high power and efficiency

www.photodigm.com

Photodigm, based in Texas, USA, has introduced a high-power, single-frequency semiconductor laser diode that it says rivals the power levels only previously attainable by bulk conventional lasers. Through the use of their newly

developed distributed-Bragg-reflector ridge-waveguide process, the photonics technology specialist claims that it has created the world's first semiconductor laser diode that combines the features of high-power beam quality, low astigmatism and single-frequency operation. Based on a quantum-well epitaxial design, the PH9/10xxSF edge-emitting laser is capable of delivering more than 500 mW of output power with an efficiency of up to 50%, while maintaining single-frequency operation with a full-width at half-maximum bandwidth of less than 10 MHz. Evaluation units are now available in wavelengths ranging from 920 to 1,100 nm. The company predicts that this device will provide lower-cost and higher-efficiency solutions to digital imaging, defence and free-space communications applications.

Laser-diode system for material processing



DILAS

www.dilas.com

Dilas, a world leader in the design and manufacture of high-power semiconductor lasers based in Mainz, Germany, has unveiled a new series of laser-diode systems designed for materials processing. The Line Focus Diode Laser Systems LF×40 are direct-delivered water-cooled laser diodes integrated with a microscale controller and chiller. They are available at wavelengths of 808 nm and 940 nm, with an optical output power of 400 W in continuous-wave mode. Potential applications include welding of plastics, and annealing and re-crystallization of surfaces. The lasers feature a line-focus beam profile about 100 mm in length and an efficiency of more than 50%. They offer increased process reliability, lower operating cost and higher efficiency over conventional processes. Their compact and robust design also allows easy integration into any manufacturing machinery or robotics, making them attractive for industrial applications.