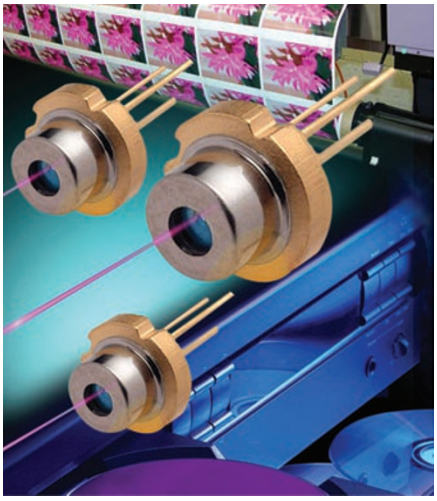
Blue-violet diodes feature internal monitor photodiode



SANYO

www.photonic-products.com

Photonic Products is now supplying Sanyo's latest range of high-power blue-violet lasers. The range includes three new 405-nm laser diodes, which offer 20 mW, 45 mW or 85 mW optical output power. Photonics Products claims this performance represents the highest power available in a single-mode laser diode with an internal monitor photodiode.

This internal monitor photodiode, which can be used to accurately stabilize and control the optical output power, enables these Sanyo blue-violet laser diodes to offer the extra performance required for advanced DVD and optical data-storage applications.

The three 405-nm-wavelength Sanyo laser diodes are: DL-4146-101S, which gives 20 mW optical output power with a very low threshold current of 26 mA, typical operating current of 35 mA, operating voltage of 4.8 V and monitoring output current of 0.2 mA; DL-5146-101S, which offers 45 mW power with a threshold current of 35 mA, typical operating current of 70 mA, operating voltage of 5.2 V and monitoring output current of 0.3 mA; and the DL-7146-101S laser diode, which gives 85 mW output power with a threshold current of 45 mA, typical operating current of 110 mA, operating voltage of 5.4 V and monitoring output current of 0.3 mA.

All three laser diodes have an internal monitor photodiode, a package size of just 5.6 mm and operate at temperatures of up to 75 °C.

Software upgrade simplifies production of interactive disks

www.sonycreativesoftware.com

Sony Creative Software has announced upgrades to its DVD Architect and Blu-print applications for authoring Blu-ray disks. The company's DVD Architect 5 software enables independent producers and videographers to author both a standard-definition DVD or a high-definition Blu-ray disk complete with full motion buttons, motion menus, scene-selection menus, subtitles and alternate video and audio tracks.

Blu-print 4.3 enterprise software helps to simplify the complexity of producing fully interactive Blu-ray disks at professional studios or authoring houses. Blu-print 4.3 now features integration with Ensequence on-Q Create for Blu-ray Java, which enables Blu-ray disk developers to create and distribute Java-based interactive experiences to viewers worldwide.

Compact blue laser diode is suitable for notebook drives

www.sharp-world.com

Sharp has released a 250-mW blue laser diode that promises to enable recorders with 6× recording speed, and the company also plans to release a diode for recording at 8× within the next two years. The GH04P25A4G laser diode features a proprietary facet structure and its ultracompact dimensions (3.3 mm diameter) make it suitable for use in notebook Blu-ray drives. The other model (GH04P25A2G) features a diameter of 5.6 mm and can be installed in desktop Blu-ray drives.

According to Sharp, the power consumption of the laser chip has been reduced, and mounting on a 3.3-mm diameter package was made possible by suppressing heat generation.

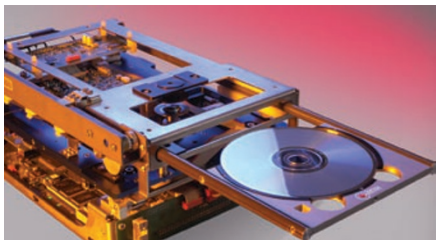
Sharp's plans also include the development of a more powerful laser diode that will be able to burn single and dual layer Blu-ray disks at a speed of 8× using a power output of 300 mW. This will probably reach the mass-production stage in 2009, followed by a 400-mW device for multilayer recording at speeds from around 8× to 12× in 2010.

Manufacturing system for Blu-ray dual-layer disks

www.singulus.com

The Bluline II from Singulus Technologies is a production system for 50-Gbyte dual-layer Blu-ray disks. The company teamed up with Sony DADC in Austria to develop this system. It features 12 stations from injection moulding through to final inspection. Singulus has qualified the MoldPro All-Electric moulding machine for Blu-ray disk production, but other qualified moulding machines can be integrated on request. An additional cooling conveyor provides a uniform temperature distribution over the disk surface before the disks enter the sputter module, where silver alloy is sputtered with a layer thickness of around 35 nm. Lacquering then takes place on a double-track module for high throughput and a highly accurate circular ring of lacquering agent is applied onto the disk with 2 μm pit-transfer resin. The disks then enter the pre-curing station before being wet-embossed and transferred back to the sputter station for another layer of silver alloy. Lacquering for the cover layer takes place on a double-track module for high throughput. After UV curing, the disk is positioned directly under a spectrometer to measure the cover-layer thickness and uniformity. With these results, a closed-loop cover-layer control is generated to ensure constant thickness and uniformity. The hard coat is performed with a spin process and a Singulus V module is used for sputtering the label side of the disk with a moisture barrier. A unique layer-thickness measuring system controls the layer thickness and layer uniformity of each metallized substrate automatically.

Reference drive targets integration with test kit for blue-laser-based disks



TOPTICA

www.toptica.com

The Husky reference drive from Toptica has been designed for integration into test equipment for blue-laser-based disks. The test drive's optical, mechanical and electronic specifications meet those given for various formats, and all components — even the pickup — have been manufactured by Toptica. The rugged mechanical set-up together with the specially developed high-precision spindle motor guarantees an excellent positioning accuracy in the micrometre regime. The optical pick-up head made from stainless steel is equipped either with a lens system that has a numerical aperture of 0.65 for HD DVD or with one that has a numerical aperture of 0.85 for Blu-ray disks.

Stable servos are guaranteed by astigmatic focusing and push–pull tracking. The signal is analysed by a latest-generation quad detector suited for violet wavelengths, providing the customer with five different analog optical signals. The complete board of signals includes other direct analog signals (for example, focus error, track error, tangential push–pull) as well as digitally processed analog signals.