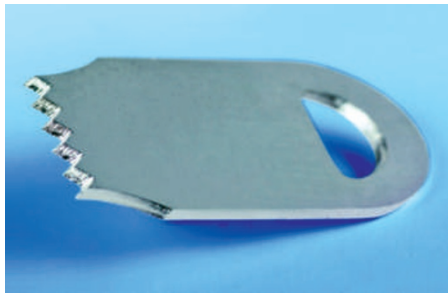


Profiling tool for metallic devices

ROFIN-BAASEL UK LTD



Designed for high-precision profiling and cutting of metals used for making medical devices, the ES-CUT150 system is the latest release from ES Technology Ltd in the United Kingdom. The system, equipped with a 150-W pulsed YAG laser, is able to cut through metals up to 5.0 mm thick, and create a kerf width of only 18 µm with minimum burr, on materials such as stainless steels, titanium, aluminium, gold, silver and brass. The system operates at an accuracy of ±10 µm and speeds up to 35.0 mm s⁻¹, offering high-quality profiling at high speeds. The position of the workpiece to be processed is controlled by a servo-driven x-y table, and computer-aided design (CAD) data for the part to be produced can be imported quickly into the system. Other benefits include a computer-based operator-user interface, a full integrated standalone design, and an optional facility for fine dust removal.

www.estechtechnology.co.uk

Plug-and-play fibre laser

Following the recent opening of an application facility in Silicon Valley, California, in February 2009, IPG Photonics has announced a new line of fibre lasers designed for high flexibility and reliability at low cost. In addition to the fibre-delivered direct-diode lasers, the company now also supplies cost-effective customized fibre lasers that offer plug-and-play operation with rapid fibre replacement and switching capability. The new, compact YLS-CL series gives users choice over delivery fibre shape, output fibre core sizes and beam shapes. Compared with the direct-diode systems, the custom lasers offer high flexibility and reliability. Available at 2, 3 or 4 kW of output power, the lasers are specifically designed for cladding, brazing, hardening and annealing applications in the automotive, aerospace, oil and heavy industries. Mass production of this new-line fibre lasers is scheduled

to be in the second quarter of 2009. The company says that the new line will be price-competitive.

www.ipgphotonics.com

Green laser offers high-precision micromachining

Coherent, a Californian company based in Santa Clara, has unveiled a new pulsed green laser: the AVIA 532-23. The announcement extends Coherent's AVIA 532 high-power laser series into the region of more moderate output power. Operating at a wavelength of 532 nm, the new AVIA laser is a frequency-doubled, Q-switched, diode-pumped solid-state laser that offers an average power of 23 W. It produces pulses with a pulse width of less than 40 ns at a repetition rate of 100 kHz. Just like other products in the series, the device comes with drift-free resonator optics and pump laser diodes with aluminium-free active area. It also features the ability to deliver constant pulse energy over time and at varying repetition rates, and promises uniform pulse energy when the laser is operated in burst mode (operation with groups of closely spaced pulses). Designed with excellent beam quality factor $M^2 < 1.3$ and high repetition rate of up to 300 kHz, this laser is capable of minimizing the heat-affected zone on a workpiece and is a cost-effective tool for a wide range of demanding, high-precision micromachining applications, such as solar-cell manufacturing, micromachining of micro-secure-digital (SD) cards, microelectronics package processing, and silicon wafer sawing and scribing.

www.coherent.com

Modular design for photovoltaics

4JET GmbH, a German supplier of laser systems for surface treatment of thin-film solar panels, has extended its range for products serving the photovoltaic industry with the INLINE system. Equipped with several laser technologies, the modular design of the INLINE system performs abrasion-free laser edge deletion, pattern-4 isolation cutting, selective perforation of semitransparent solar panels for building integration, marking and molybdenum exposure of thin-film panels, all from within a single unit. The design of the unit allows full-area processing including the inside of coated glass surfaces. Diode-pumped solid-state or fibre lasers are used, depending on the application. The laser edge deletion process provides a clean

surface that has a resistance of several gigaohms and removes the need for further treatment before the lamination process. The system is suitable for processing amorphous silicon, cadmium telluride (CdTe) and copper-indium-gallium diselenide (CIGS) thin films, as well as all typical glass formats in use including G8 formats with 2,600 × 2,200 mm dimensions. The INLINE's combination of a high level of automation, cost-efficient design and abrasion-free precise ablation process not only reduces the cost of processing a panel, but also improves panel quality. Other features include an optical positioning system, vapour evacuation, integrated power measurement and optional modules for process validation.

www.4jet.de

Beam shaper suits industrial needs



MOLTECH GMBH

MolTech GmbH, based in Berlin, has released a new collimator model, the πshaper 37_34_1064, that provides highly efficient laser-beam shaping for high-power lasers. The device is designed to be compatible with powers of up to 6 kW from fibre-coupled solid-state or diode lasers, and near-infrared fibre lasers. It transforms a Gaussian or similar intensity distribution of the source laser beam to a flat-top beam with nearly 100% conversion efficiency and also accepts divergent TEM₀₀ or multimode laser beams. The collimator maintains the diameter of the output beam at 30–34 mm over long distances with a uniformity of within 5%. Although it is designed for operation wavelengths of 1,020–1,100 nm, other optional wavelengths at 830 nm, 980 nm and so on are also available. The device is based on a Galilean design and no internal focusing of a beam is involved. Together with the ease of integration in systems and high damage threshold, the πshaper is attractive for applications in welding of metals and plastics, annealing, hardening, cladding, marking and engraving, and ablation.

www.pishaper.com