SINTEC OPTRONICS NEWSLETTER JULY ISSUE

Sintec Optronics Pte. Ltd. recently joined Automotive Manufacturing 2010", ASEAN's only Machinery Expo for Automotive Parts Manufacturing - 7th Edition, a part of "Manufacturing Expo 2010" ASEAN's #1 Manufacturing Exposition, which was organized on June 24 - 27, 2010, at BITEC, Bangkok THAILAND.

To all of our visitor's thank you so much for investing time, money and effort to visit our booth and we are looking forward at a very soonest time in making as well as in continues.

Lamp- and Diode-pumped CW Nd:YAG Lasers

The laser typically consists of a laser head including pump chamber (or diode pump module), Nd:YAG rod, lamp and laser resonator and a control cabinet including lamp driver, Q-switch driver (option), control box (option) etc. A chiller is another option.

The CW Nd:YAG lasers are suitable for a wide range of precision marking, trimming, micro-machining, instrumentation and medical applications in the electronics, medical, automotive and fine mechanics markets.

Lamp-pumped Pulsed Nd:YAG Lasers

The laser typically consists of a laser head including pump chamber, Nd:YAG rod, lamp and laser resonator and a control cabinet including lamp driver, Q-switch driver (option), control box (option) etc. A chiller is another option.

The lamp-pumped pulsed Nd:YAG laser typically consists of laser head (pump chamber and laser resonator), switching power supply, control & closed water cooling system. The YAG-P series of lamp-pumped pulse Nd:YAG lasers are suitable for a wide range of precision welding, cutting and drilling applications in the electronics, medical, automotive and fine mechanics markets.

RF-excited Lasers

New low profile mounting plate with quick release electrical connector can be mounted in any orientation. All lasers are RF-excited with an internal tickle and built-in interlock and can be operated from CW to their maximum modulation frequency. Superior engineering and innovative technology result in stable power output, reliable service and the lowest recharge cost in the industry.

Fiber Lasers

We have CW and pulsed fiber lasers and there are two versions: OEM and turnkey system. OEM laser module is a compact Pulsed Ytterbium Fibre Laser deli-vering up to 50W of average output power and 25kW of peak power through a near diffraction limited beam. One of the key features is the possibility to operate the fibre laser in pulsed or CW mode. Pulse repetition rate and output pow-er can be controlled either by 8-bits TTL signal, Analog or RS232 + TTL. The excellent beam quality and power stability make our fibre laser a multi-purpose tool. Our patented “Injection Technology” allows the use of highly reliable broad area laser diode pumps, for a cost-effective and main-tenance-free operation. The all-fibre design guarantees the robustness of the laser, without any optical parts to align or to stabilise. Designed under the proprietary “EPL“ technology (Exchangeable Pump Laser), there is no need to send back the laser to us for maintenance as one can make the swap of the pump diode very easily. Maintenance and lifetime of the product is no more an issue. The simple integration of the system requires no after-installation service. The fiber laser is the ideal solution for a broad range of indus-trial applications.

Laser Marking Heads (Laser Scanners)

A whole laser marking head (or called laser scanner) consists of two scan mirrors, two galvanometers (or called galvo-scanner motor) & drive cards, a XY mount, a scanning lens (f-theta lens), an interface card (or called D/A card), a set of marking software and a DC power supply. Two types of scanning optics for CO2 (10.6um) and Nd:YAG lasers (1064nm and 532nm) are available.

For more information, please click here.

APPLICATION NOTES: Laser Cutting

Laser cutting is a technology that uses a laser to cut materials, and is typically used for industrial manufacturing applications, but is also starting to appear in schools. Laser cutting works by directing the output of a high power laser, by computer, at the material to be cut. The material then either melts, burns, vaporizes away, or is blown away by a jet of gas, leaving an edge with a high quality

surface finish. Industrial laser cutters are used to cut flat-sheet material as well as structural and piping materials.

Comparison to mechanical cutting: Advantages of laser cutting over mechanical cutting include easier workholding and reduced contamination of workpiece (since there is no cutting edge which can become contaminated by the material or contaminate the material). Precision may be better since the laser beam doesn't wear during the process. There is also a reduced chance of warping the material that is being cut, as laser systems have a small heat-affected zone. Some materials are also very difficult or impossible to cut by more traditional means. A disadvantage of laser cutting is the high energy required.

Types: There are three main types of lasers used in laser cutting. The CO_2 laser is suited for cutting, boring, and engraving. The neodymium (Nd) and neodymium yttrium-aluminum-garnet (Nd-YAG) lasers are identical in style and differ only in application. Nd is used for boring and where high energy but low repetition are required. The Nd-YAG laser is used where very high power is needed and for boring and engraving. Both CO_2 and Nd/ Nd-YAG lasers can be used for welding.

Common variants of CO_2 lasers include fast axial flow, slow axial flow, transverse flow, and slab. CO_2 lasers are commonly "pumped" by passing a current through the gas mix (DC-excited) or using radio frequency energy (RF-excited). The RF method is newer and has become more popular. Since DC designs require electrodes inside the cavity, they can encounter electrode erosion and plating of electrode material on glassware and optics. Since RF resonators have external electrodes they are not prone to those problems.

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