**OPTEC: High precision Ultra short-pulsed lasers; SPI: redENERGY G4 Lasers for drilling; WHAT’S IN MY INBOX? WINE – again!**

**High precision Ultra short-pulsed lasers for micromachining**

More laser materials processing is being undertaken by ‘short pulse length’ (or ‘ultra-fast’) pulsed lasers. Highly suited for micro-processing, the shorter the laser pulse, the higher the peak laser power available resulting in low heat to the work-piece with no deformity in structure as the laser process, namely photoablation, actually atomizes material carrying the heat away from the work zone.

Ultrafast lasers systems offer exceptional advantages where precision and quality are essential such as processing of glass, sapphire and diamond. For example, Optec lasers can be used to cut sapphire for smartphone camera windows that must be cut with tight curves and diameter of 5mm.

**MM200-USP** is the latest addition to the Optec range of short pulse length (or ultra-fast) laser systems. One design offers multiple configurations enabling a wider opportunity to select the right laser system for your application requirements.

- Choose from nanosecond (ns), picosecond (ps) or femtosecond (fs) laser sources and wavelength to match each application. Multi-wavelength performance is included.
- Spot sizes down to 5μm with scan optics, 1μm with fixed optics.
- Rock-solid 450kg granite space frame with choice of optics configurations that includes turret optics. A compact footprint of 1.2m^2.
- Process area of 200x200mm X,Y, 1μm precision; 100mm Z rotary stage options.
- Comes with colour motorized zoom inspection microscope for clear viewing of 60X-750X.
- System control uses Optics ProcessPower
- **OptecCAD** for real time manipulation of entities in a CAD environment - by layer or by entity, plus a full range of processing tools: hatching, helical drilling, slicing, & segmentation.

**LSV3** uses the successful LightShot platform to integrate short pulse ‘shoebox’ style lasers with small field scan optics and fast linear motion stages; typical applications are in processing small areas with high precision in sensors/medical devices. Can be supplied with IR, green or UV. Use ProcessPower with **OPTECAD** for real time manipulation of entities in a CAD environment.

For the full range of **OPTEC** products contact Raymax to identify the most appropriate solution for your application requirements.
Drilling with an SPI redENERGY® G4 Pulsed Fiber Laser

SPI offers hundreds of different possible outcomes for your laser drilling needs, from small, blind, precisely tapered holes to larger ones. A single-set up of our machinery can produce an almost limitless amount of sizes across a 3D surface.

SPI laser’s drilling ability to work at very small sizes with a high rate of speed is just one versatile process. The other is that it lends the user total control over beam manipulation, allowing them to easily adjust the beam duration and intensity, as well as the heat output that will affect the material that is being worked with.

Material is 0.3mm Aluminium & the holes are drilled with a standard galvo scanner / No assist gas. There is no distortion to the plate. Time depends on hole size and hole density. Approx 250 holes per second for 40µm holes up to 2.4s per hole for 500µm - SPI redENERGY G4 20W EPZ Laser

Flexibility: redENERGY® G4 has been designed with specific attention to enhance the ease of OEM integration, enabling easy adoption of the full product features and range. redENERGY® G4 is designed to benefit high volume manufacturing, where it yields unprecedented reliability and consistency.

Innovative technology:

Our G4 model is the 4th generation redENERGY® pulsed product platform and is the pinnacle of pulsed nanosecond technology, with enhanced features for micro-machining, moving our PulseTune enabled Lasers to a new level.

PulseTune technology offers the OEM integrator highly flexible control over pulse width and peak power. The unique PulseTune function enables market leading repetition rates whilst maintaining peak power.

What advantages does laser drilling have over conventional drilling methods?

- It is a non-contact process, which means that a minimal amount of distortion to the material
- A high level of accuracy and control
- Produce holes with small diameters and high aspect ratios, for tasks such as roughening up surfaces, or thru-holes for air pressure vents
- One laser drilling machine is capable of completing multiple tasks – including welding and cutting
- Laser drilling increases production rates by allowing faster setup times and less tooling.
- Drill a number of different materials, including various metals, plastic, and even diamond
- It is an extremely flexible process, allows for changeovers for prototypes and small-batch manufacturing

WHAT’S IN MY INBOX?

Wine - again! Just how long have we been imbibing .........?

Researchers have discovered the oldest evidence of wine dating back to 4,000 BC. Conducing chemical analysis on ancient pottery using a spectroscopy method that allows samples to be examined directly in their solid or liquid state, Professor Davide Tanasi (USF) found the residue on the unglazed pottery from Monte Kronio in Agrigento, located off the south-west coast of Sicily, contained tartaric acid and its sodium salt, which occur naturally in grapes and in the winemaking process.

Source: http://www.foodprocessing.com.au