



Quality and Excellence, presented by Sintec Optronics

***NEW* Diffractive Optical Elements (DOE) for laser cutting of metal & glass**

Laser cutting works by directing the output of a high-power laser, usually through an optical system & moving stage, to scan the focus on a workpiece and cut it. It is typically used in industrial manufacturing applications. The goal is to extend the depth of focus of the system, without increasing the focal length of the focusing optic, or to improve cut quality and reduce exfoliation and material re-melting in the cut area.

Metal laser cutting is performed by locally heating the material at the focal point of a focused laser beam above its melting point. The resulting molten material is ejected by a gas flow, so that an open cut is formed.

Glass laser cutting or laser dicing is usually done with high powered lasers in the IR regime. Because glass has a weak absorption of light in most wavelengths, more powerful lasers are needed to cut glass. By using a focal DOE, the energy is spread in the bulk of the glass wafer. This enables one-pass cuts, without the need of adjusting the focal depth of the spot and z-movement during the cut. This is especially useful for stealth dicing, where the laser light modifies the glass to make it brittle, instead of ablation cutting, and then the glass is mechanically separated along the laser process line.

Relevant products:

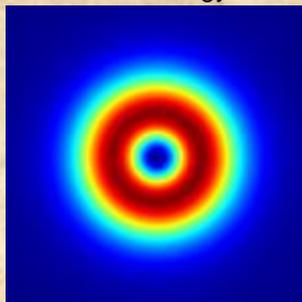
for metal cutting -- Vortex Lens, Top Hat;

for glass cutting -- Elongated Focus, Multi-focal Lens

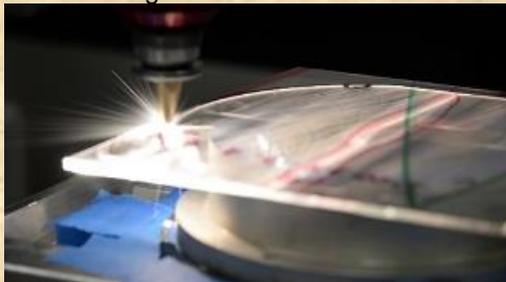
Metal cutting:



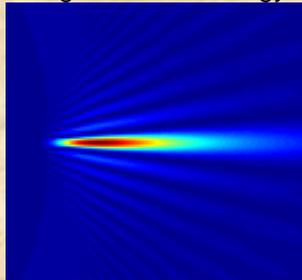
Vortex lens energy distribution:



Glass cutting:



Elongated focus energy distribution along optical axis



***NEW* Customised Optical Fiber and Patch Cords**

We are now able to offer all sorts of optical fibers from communication fibers to specialty optical fiber. We are able to manufacture complex index-profile shapes accurately, therefore to get the optimized products with the best compromise between insertion loss and residual dispersion over the compensated working wavelength. Fibers are manufactured through the high precision Plasma Chemical Vapor Deposition (PCVD) process. This process produces preforms with precise refractive index profiles, material uniformity and dimensional tolerances, therefore, makes fibres with excellent birefringence, low attenuation and extremely tight tolerances. Customized fibres with special center wavelength and dispersion are available: Dispersion Compensating Fiber (DCF), Hard Polymer Cladding Optical Fiber (HPCF), Polarisation Maintaining Fiber (PMF), Bend Insensitive Single Mode Fiber (BI-SMF), Graded Index Multi-mode Fiber (GIMM), Step Index Multi-mode Fiber (SIMM), Specialty Step Index Single Mode Fiber (SISM), Single mode Coupler Fibers, High Temperature Fiber (HTF), ETFE Tight Buffered Fiber, Erbium Doped Fiber (EDF), Double Clad Ytterbium Fiber, Double Clad Passive Fiber, Multi-Core Fiber, UV optimised Fiber, Photonic Crystal Fiber (PCF).

We can also make customised glass preforms to your specifications, whether octagonal cladding or active ion doped preforms or photonic crystal designs for your projects. Let us know your customised fiber requirements!





Fiber lasers for laser processing of materials

We offer pulsed and CW fiber lasers that can be used to process materials like metal (aluminum, copper, stainless steel, anodized aluminum, carbon steel etc.), Silicon wafers, GPP wafers, ceramics, graphite and other types of materials. Applications include laser marking, etching, engraving, drilling, wafer cutting, scribing, welding, spot welding, cutting.

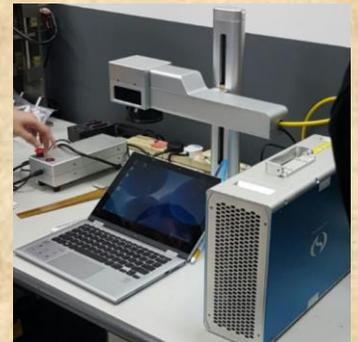
Our fiber lasers are available at 10W, 20W,30W, 50W, 100W, 200W, 300W, 400W, 500W and 1000W, with the option of CW or pulsed. These lasers can be easily integrated into machines with beam delivery optics and marking/cutting heads which we also offer.



Mini Fiber Laser Machines

We have introduced a new configuration for marking machine: Mini fiber laser marker! It is like a small computer pc size and comes with the standard laser head and z-axis stage. Included inside is a standard 20W fiber laser. The marking quality is the same as our standard fiber laser marker with a simple software interface. The simple integration of the system requires no after-installation service. The fiber laser machine is the ideal solution for a broad range of industrial applications. Typical Applications:

- 1.Laser marking of metal & non-metal materials and products: stainless steel, copper, aluminium alloy, ceramics, plastics, organics, thermo-elastomerrubbers, paper, name cards, turbine blades
- 2.Electronic industry: capacitor, inductor, PCB, IC, connector, control panel, instrument
- 3.Others: cosmetics, food package, bottle, gift, advertisement & sign crafts, craft & gift making



Renting of Laser Machines

We have introduced a new program of renting our portable fiber laser machines here in Singapore! The program was started several months ago and was well met. Several companies have already rented our standard fiber laser marker for trial. They are used for both industrial and research applications like laser marking of logo and bar codes on their products, and using laser to excite bio-electrical tissue circuit samples in the lab. It is an exciting time for the usage of laser! We have also rented our UV desktop laser machine to do marking on plastic materials with clear black marking. Our end users are quite happy with the results that they have placed several orders for the laser machines! Training is included in the rental. Furthermore, if you do decide to purchase the laser machine, we can give discount of the rental amount from the price of the machine! Contact us for rental of laser machine trial testing now!



Promotional items!

We are currently overstocked on items such as Q-switch drivers, laser lamps, CO2 focusing lens and CO2 f-theta lens, high power fiber cable, ceramic reflectors, Optical galvanometers that supports 12-30mm apertures, and galvo drivers. Inquire about our stock items now and receive large discount! Our LSLC-DIGI self-tuning scanheads are on offer too!

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