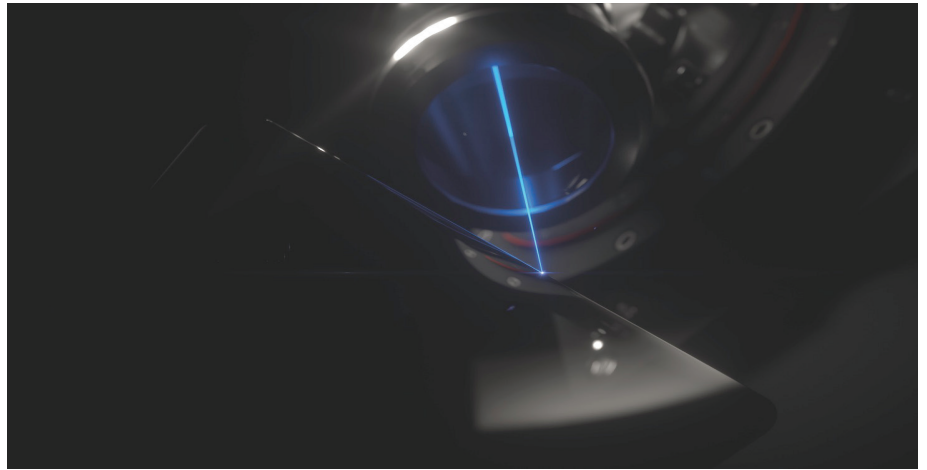


CORNING



Laser cutting of 3D shaped glass

There is a world wide trend towards cover glasses and glass dashboards with curved surfaces. These new designs have high requirements for freeform and 3D cutting, which are difficult to meet with traditional mechanical scribe and break (MS&B) processes.



nanoPerforation Cutting

To meet these demands, Corning Laser Technologies (CLT) has further improved its unique nanoPerforation glass cutting technology. Using ultrashort pulsed lasers, it cuts glass through localized perforation rather than material ablation. This results in smooth, very high quality cuts at high processing speeds.

CLT has further developed the nanoPerforation to also allow the cutting of 3D shaped glass. Thanks to the high edge quality of the nanoPerforation process, there is little or no post processing required. As laser cutting is contact-free, it does not need process fluids and there is no tool wear. All this reduces the total cost of ownership and makes CLT nanoPerforation not only more flexible, but also more cost effective than traditional MS&B processes.

Creative 3D Designs

When cutting 3D forms, the laser beam always has to be perpendicular to the glass surface. This is achieved through a specially developed, fast and highly precise CLT 5-axis beam delivery system.

Allowing freeform, near netshape cutting, the CLT solution gives you the freedom to realize innovative 3D designs for mobile devices, automotive dashboards, displays, consumer electronics and more.

Key Benefits

- Cuts straight, perpendicular and free-form lines
- Cuts extremely fast to maximize throughput
- Superior edge quality
- Precise cutting of 3D shaped glass
- Minimal particle generation



Your Solution

Our application lab will work with you to provide a complete solution tailored to your specific requirements. The CLT experts have many years of experience in laser technology and use state of the art metrology equipment for application development.

Technical Specifications

| | | |
|------------------------------------|---|--|
| Axes | X-axis range 700 mm Y-axis range 1200 mm Z-axis range 300 mm C-axis 360° A-axis +/- 90° Accuracy | Drive: linear motor Drive: linear motor Drive: rotation motor Drive: rotary stage motor Drive: rotation motor < +/- 100 µm for parts cut out of a substrate ¹⁾ |
| CNC-Control | TwinCat 3 CNC control for all machine functions | |
| Operator Interface | Based on Microsoft Windows 10 with CLT HMI | |
| Machine Vision | CLT vision system integrated in standard configuration | |
| Laser Source | Integration of up to two (2) different laser sources Setups for different wavelengths available | |
| Process Head | Swivel Head Flying optics Combination of both | |
| Loading/Unloading | Manual loading of substrates / unloading of parts | |
| Electrical Supply | Rating: Power consumption (peak/ average) | 400 Volts, 3Ph+N+PE, 50/60Hz (transformer available) 10.0 kW |
| Cooling | Rating (peak/ average): Consumption: : | 7.0 kW/ 4.0 kW ²⁾ min. 20 l/min, max. 25 l/min ²⁾ |
| Compressed Air | Supply pressure: Consumption: | min. 6 bar / max. 8 bar ²⁾ typ. 80 l/min, peak: 150 std. l/min at 50% duty cycle |
| Exhaust Air from Machine Enclosure | Volume: | min. 450 m ³ /h |
| Machine Vacuum | No requirement at customer site. Generated within process tool. | |

¹⁾ Accuracy depends on pattern geometry and process speed.

²⁾ These values may vary, depending on the tool configuration, e.g. type of laser source.

Specifications are subject to change without notice.

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For more information:

Tel: +49 89 / 899 48 28-0

E-Mail: CLT-info@corning.com

www.corning.com/lasertechnologies

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One Riverfront Plaza, Corning, NY 14831-0001