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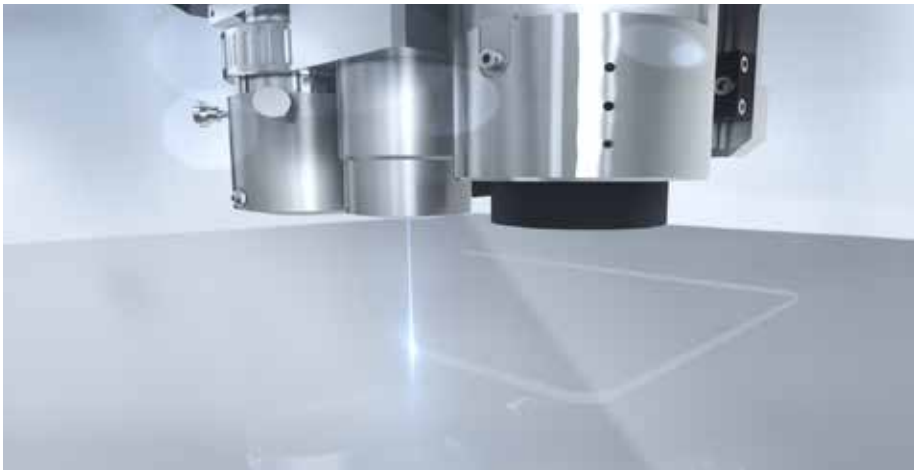

CLT 500X:

Versatile and flexible laser glass processing system

The CLT 500X is a versatile laser processing system for fully strengthened glass, Corning® Gorilla® glass, un-strengthened glass, as well as other transparent glass and crystalline materials. It is specifically designed for use in an industrial environment and is often used in R&D and small scale production.

Using the Corning Laser Technologies process of ultra-short laser pulses, the CLT 500X cuts by material disassociation rather than ablation. This results in a very low surface roughness, and an increased as-cut edge strength of the glass, compared to ablative laser processes or conventional score and break methods.

For processing different types of material, the system can be equipped with multiple laser sources. This expands the scope of the system and makes it future-proof for coming applications.

The CLT 500X features a high-precision X/Y-table with dynamic linear moter drives. The table and the laser source are mounted on a machine base and vertical structure made from solid granite blocks. This ensures maximum stability even under high acceleration/deceleration. The result is a very high positioning accuracy of less than 5 µm (per 200 mm travel) and a repeatability of less than 2 µm.

Key Benefits

- nanoPerforation process to perforate the substrate
- Separation process to separate the substrate
- Free-form, net-shape or near net-shape cutting at up to 1m/s
- Cuts: curved, straight, perpendicular and angled lines as well as holes and slots
- Cuts glass from 0.4mm up to 6 mm in thickness

Applications

Versatile multi purpose and flexible laser machining system for:

Processing Glass Substrates

- Automotive interior glass
- Consumer electronics
- Architectural glass
- Display technologies
- Coated substrates
- Thin glass
- Strengthened and non-strengthened glass
- Drilling of through holes and vias
- Electronic components

This system is also extremely well suited for different kinds of Micro Materials Processing, such as:

Other Materials

- Cutting and drilling of OLED, PI, wafer, ceramic, plastic, and other brittle materials.

CLT 500X Technical Specifications

Mechanics	X/Y-table machine system with highly dynamic linear motor drives Machine base and vertical structure are made from solid granite blocks Class 1 laser safety chamber Pneumatically operated access door	
Axes	X-axis travel 450 mm Y-axis travel 660 mm Z-axis travel 100 mm Max. traverse speed x/y-axis Positioning accuracy x-axis Positioning accuracy y-axis Repeatability x-axis Repeatability y-axis	Drive: linear motor [1)] Drive: linear motor [1)] Drive: rotation motor [1)] > 60 m/min < 5 µm / 200 mm travel [2)] < 5 µm / 200 mm travel [2)] < 2 µm [2)] < 2 µm [2)]
CNC-Control	TwinCat 3 CNC control for all machine functions (G-code)	
Operator Surface	Based on Microsoft Windows 10 with CLT HMI	
Loading	Manual loading of substrates onto worktable	
Machine Vision	Integrated in standard configuration for fiducially recognition	
Options	Drop out laser process for circular inner contours Ablative drilling process Fully automated carrier return Full automation by use of transfer carrier	
Electrical Supply	Rating Power consumption (peak/ average)	400 Volts, 3Ph+N+PE, 50/60 Hz (transformer available) 9 kVA / 6.1 kVA [3)]
Cooling	Rating (peak/ average) Consumption	3.0 kW / 2.0 kW [3)] min. 8 l/min; max. 12 l/min [3)]
Compressed Air	Supply pressure Consumption	min. 6 bar / max. 8 bar [3)] typ. 350 Nl/min
Exhaust Air from Machine Enclosure	Volume	min. 50 m^3/h exhaust air[3)]
Exhaust Air from Process Head	Volume	up to 150 m^3/h exhaust air [3)]
Machine Vacuum	No requirement at customer site. Will be provided by a side channel blower inside the equipment.	
Machine Size and Weight	Size: Width x Depth x Height [3)] Weight	1,650 x 2,100 x 2300 mm (excluding service area) approx. 3,800 kg,
Temperature	20 °C, Deviation +/- 2 °C , non condensing	

[1)] Nominal travel range. Effective travel range may be reduced by use of multiple process heads and/or cameras.

[2)] Environmental controlled room required.

[3)] 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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