

# CORNING



## CLT 45G NX:

# A multipurpose high-precision laser processing tool

The CLT 45G NX laser tool is designed for 24/7 production in an industrial environment. It's versatility also makes it an ideal R&D tool.

The Corning Laser Technologies systems are developed in close cooperation with the specialists at Corning, the world's leading innovators in specialty glass.



## Superior Technology

Corning's material science and optic capabilities add unique advantages to the laser glass cutting process. The CLT 45G NX offers not only distinct advantages over conventional cutting processes, but also over other laser cutting systems.

Using ultra-short laser pulses, the material is cut by material disassociation rather than ablation. The result is a very low surface roughness, increased as-cut bend strength and faster throughput.

The Corning laser process enables cutting fully strengthened glass, un-strengthened glass, as well as other transparent glass and crystalline materials.

## Key Benefits

- Cuts holes, radius form factors, complex geometries, vias, blind holes, slots and more
- Cuts functional multi-layer stacks
- Cuts glass from <math>50\mu\text{m}</math> up to 6mm thickness
- Eliminates fluids and tooling required in traditional processing methods

## Applications

Advanced multi purpose laser machining systems:

Processing Glass Substrates

- Display technologies
- Coated substrates
- Sandwich applications
- Cutting "thin" substrates
- Strengthened Glass
- Cover glasses of mobile devices
- Cover glasses of tablet PC's
- Camera protection glasses
- Drilling of Through Holes in Glass Substrates
- Mobile Devices (camera aperture, home button, loudspeaker, etc.)
- Electronic components
- Tablet PC's and computers

Micro Materials Processing

- Cutting and drilling of OLED, PI, Wafer, Ceramic, Plastic, etc.

## Your Solution

Our application lab will work with you to provide a complete solution tailored to your specific requirements. An extensive base of state of the art tools includes a wide variety of laser sources and extensive optical, electrical, and mechanical metrology equipment for application development.

# CLT 45G NX Technical Specifications

Mechanics	Machine base and vertical structure are made from solid granite blocks X-Y-split axis design (CNC-axis) Z-axis motorized (CNC-axis) Machine optimized for high precision processing at high speed Class 1 laser safety chamber	
Axes	X-axis range 950 mm Y-axis range 750 mm Z-axis range 100 mm max. traverse speed x/y-axis max. acceleration Axis positioning accuracy Axis repeatability	Drive: linear motor <sup>1</sup> Drive: linear motor <sup>1</sup> Drive: rotation motor <sup>1</sup> up to 1000 mm/s (pattern dependent) up to 10m/s <sup>2</sup> (pattern dependent) < 5 µm per 200 mm range <sup>2</sup> < 2 µm <sup>2</sup>
CNC-Control	TwinCat 3 CNC control for all machine functions (G-code)	
Operator Interface	Based on Microsoft Windows 7 with CLT HMI and touch screen	
Machine Vision	CLT vision system integrated in standard configuration	
Laser Source	Integration of up to three (3) different laser sources Setups for different wavelengths available	
Process Head	Fixed optics Galvanometer scanner Combination of both	
Automation	Handling units for semi-automated or fully automated loading and unloading (optional)	
Electrical Supply	Rating: Power consumption (peak/ average)	400 Volts, 3Ph+N+PE, 50/60 Hz (transformer available) 9,9 kVA / 6,1 kVA ; 9kW / 5,5kW <sup>3</sup>
Cooling	Rating (peak/ average): Consumption: :	3.5 kW/ 2.0 kW <sup>3</sup> min. 8 l/min; max. 12 l/min <sup>3</sup>
Compressed Air	Supply pressure: Consumption:	min. 6 bar / max. 8 bar <sup>3</sup> typ. 80 l/min, peak: 150 std. liter/min at 50% duty cycle
Exhaust Air from Machine Enclosure	Volume: Connector size / type at machine:	min. 50 m <sup>3</sup> /h <sup>3</sup> 1x connector at 90 mm nominal diameter (OD)
Exhaust Air from Process Head	Volume: Connector size / type at machine:	up to 150 m <sup>3</sup> /h exhaust air <sup>3</sup> 1x connector at 90 mm nominal diameter (OD)
Machine Vacuum	No requirement at customer site. Generated within process tool.	
Machine Size and Weight	Size: Width x Depth x Height <sup>3</sup> : Weight:	1750 x 2450 x 2300 mm 4500 kg (depending on configuration)

<sup>1</sup> Nominal travel range. Effective travel range may be reduced by use of multiple process heads and/or cameras.

<sup>2</sup> Environmental controlled room required.

<sup>3</sup> These values may vary, depending on the tool configuration, e.g. type of laser source.

Specifications are subject to change without notice.

## CORNING

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