The CLT 400S-WD is a glass wafer dicing tool that can be used for small die/narrow street applications where mechanical breaking is required. Based on our vast experience with the patented nanoPerforation process, Corning Laser Technologies (CLT) has developed a new laser modification method and combined it with a outstanding breaking technology to yield superior results and allow for industry-leading aspect ratios and highest quality standards.

Applications

- Micro-fluidics
- Micro-optics
- Meta-surfaces
- Glass wafer-based semiconductor applications
- Dicing of other brittle, transparent materials (e.g. sapphire)
- Coated and structured dies

Key Benefits

- Industry-leading dicing solution
- Capable of handling up to 300 mm wafers
- High quality and high-speed dicing process
- High yield due to lower breakage
- High utilization on die per wafer
- Clean and dry process
- Improved accuracy

Unique Dicing Solution

Glass is becoming more prevalent in the Micro-fabrication segment. The CLT 400S - WD is pairing our CLT laser dicing technology with mechanical breakers. It offers a fully optimized solution as well as a one-stop-shop for glass wafer dicing applications. The design base level tool is modular and customizable and can be supplemented with add-ons, such as automation.
### CLT 400S-WD Technical Specifications

#### Mechanics
- Machine base and vertical structure are made from solid granite blocks
- X-Y-split axis design
- Z-axis motorized
- Machine optimized for high precision processing at high speed
- Class 1 laser safety chamber

#### Axes
<table>
<thead>
<tr>
<th>Axis</th>
<th>Range</th>
<th>Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-axis</td>
<td>400 mm</td>
<td>linear motor</td>
</tr>
<tr>
<td>Y-axis</td>
<td>400 mm</td>
<td>linear motor</td>
</tr>
<tr>
<td>Z-axis</td>
<td>75/110 mm</td>
<td>rotation motor</td>
</tr>
<tr>
<td>Max. traverse speed x/y-axis</td>
<td>Up to 1.0 m/s @ 10 m/s²</td>
<td></td>
</tr>
<tr>
<td>Positioning accuracy x (calibrated worktable)</td>
<td>+/- 2.5µm per 300 mm range ¹</td>
<td></td>
</tr>
<tr>
<td>Positioning accuracy y (calibrated worktable)</td>
<td>+/- 2.5µm per 300 mm range ¹</td>
<td></td>
</tr>
<tr>
<td>Axis repeatability</td>
<td>&lt; 2 µm ¹</td>
<td></td>
</tr>
</tbody>
</table>

#### CNC-Control
- TwinCat 3 CNC control for all machine functions (G-code)

#### Operator Interface
- Based on Microsoft Windows 10 with CLT HMI

#### Vision System
- Integrated in standard configuration for fiducial recognition

#### Loading
- Manual loading of substrates

#### Power Sensor
- Integrated in standard configuration for process calibration

#### Options
- Height Sensing Modul
- Line Focus Camera
- Enhanced nanoPerforation
- External Beam Attenuator
- Monitoring Box
- Motorized Mirrors
- 1D/2D Code Reader
- External Exhaust System
- External Chiller

#### Electrical Supply
- Rating:
  - Power consumption (peak/ average): 400 Volts ±10%, 3Ph+N+PE, 50/60 Hz
  - Consumption: 4.0 - 18.0 kVA / 3.6 - 14.5 kVA

#### Cooling
- Rating (peak/ average):
  - Consumption: 3.3 - 3.5 kW/ 3.0 kW ²
  - min. 13 l/min; max. 26 l/min ²

#### Compressed Air
- Supply pressure:
  - Consumption: min. 6 bar / max. 8 bar ²
  - typ. 500 Nl/min

#### Exhaust Air from Machine Enclosure
- Volume:
  - Connector size / type at machine: min. 50 m³/h exhaust air²
  - 1x connector at 90 mm nominal diameter (OD)

#### Exhaust Air from Process Head
- No requirement at customer site.
- Will be provided by an additional exhaust system

#### Machine Size and Weight
- Size: Width x Depth x Height ³:
  - Weight: 1,400 x 1,400 x 2,650 mm (incl. signal lights)
  - 1,600 kg

#### Temperature
- Environment-controlled

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¹In order to achieve the above-mentioned accuracy, the machine must be operated in an environment-controlled room.

²These 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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