CASE STUDY

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SYNOVA S.A.
Route de Genolier 13
1266 Duillier
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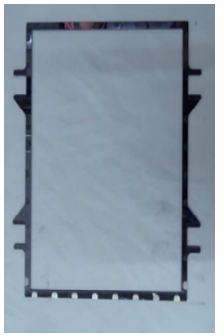
PRODUCT

Silicon frames for Semiconductor-Production Machines

The photolithography machines are used in the production of microchips. In these machines, patterns are optically imaged onto a silicon wafer that is covered with a film of light-sensitive material (photoresist). This procedure is repeated dozens of times on a single wafer. The photoresist is then further processed to create the actual electronic circuits on the silicon.

LMJ used for:
- Cutting a consumable made of Silicon



CHALLENGE

Perfect cut on a brittle material

The silicon frames are very brittle and request a gentle processing technology without any micro cracks and chipping

Main processing criteria:
- No micro-cracks
- No chipping
- No weakening of fracture strength
- No burrs
- High speed
- High accuracy, straight walls, low roughness

Machining technologies able to reach these criteria:
- Etching
- Laser MicroJet (LMJ) - water jet guided laser technology

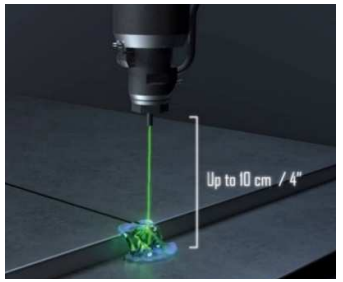
SOLUTION

No HAZ, production-proven, better ROI

LMJ advantages versus etching:
- Significantly faster
- Production-proven
- Low consumables
- High flexibility, arbitrary shapes

Installed machine type:
- 1 x LCS 300
- 100 W green laser

LCS 300



Sources: ASML homepage, Synova