FemtoGLASS

WOP
WORKSHOP OF PHOTONICS

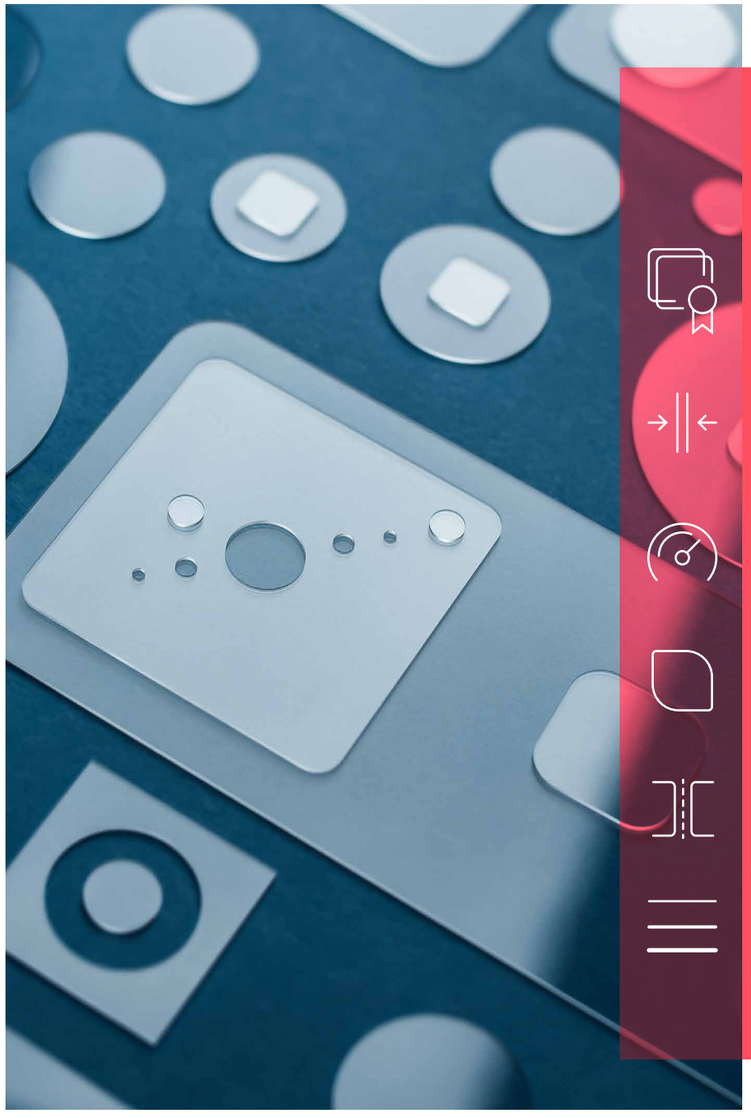
A new glass & sapphire laser dicing solution

FemtoGLASS

Glass & sapphire laser cutting and dicing system for industry and R&D applications

The demand for brittle materials industrial use continues to grow, raising new challenges and requirements for precision laser dicing.

Addressing market needs Workshop of Photonics (WOP) developed a unique state-of-the-art glass and sapphire dicing technology to increase process yield and efficiency.



Features

- Patented glass & sapphire dicing technology
- From ultra-thin glass to 10 mm
- High process speed up to 800 mm/s
- All shapes: circular, square, irregular
- Inner and outer contours
- Tunable dicing process for different substrate thicknesses

- Integrated beam stabilization
- Automated sample recognition
- Particle extraction unit
- Integrated optical microscope
- Corner door for automation design
- 200 mm x 200 mm, 300 mm x 300 mm sample size
- Thermal separation
- SCA software

Based on patented glass & sapphire cutting technology

WOP's patented glass and sapphire cutting technology sets FemtoGLASS apart from alternative solutions in the market.

Its ability to minimize sidewall stress and cracks to increase glass bending strength, as well as overall sidewall cut-finish quality makes it the perfect choice for industries such as semiconductors, microfluidics, and micro-optics.

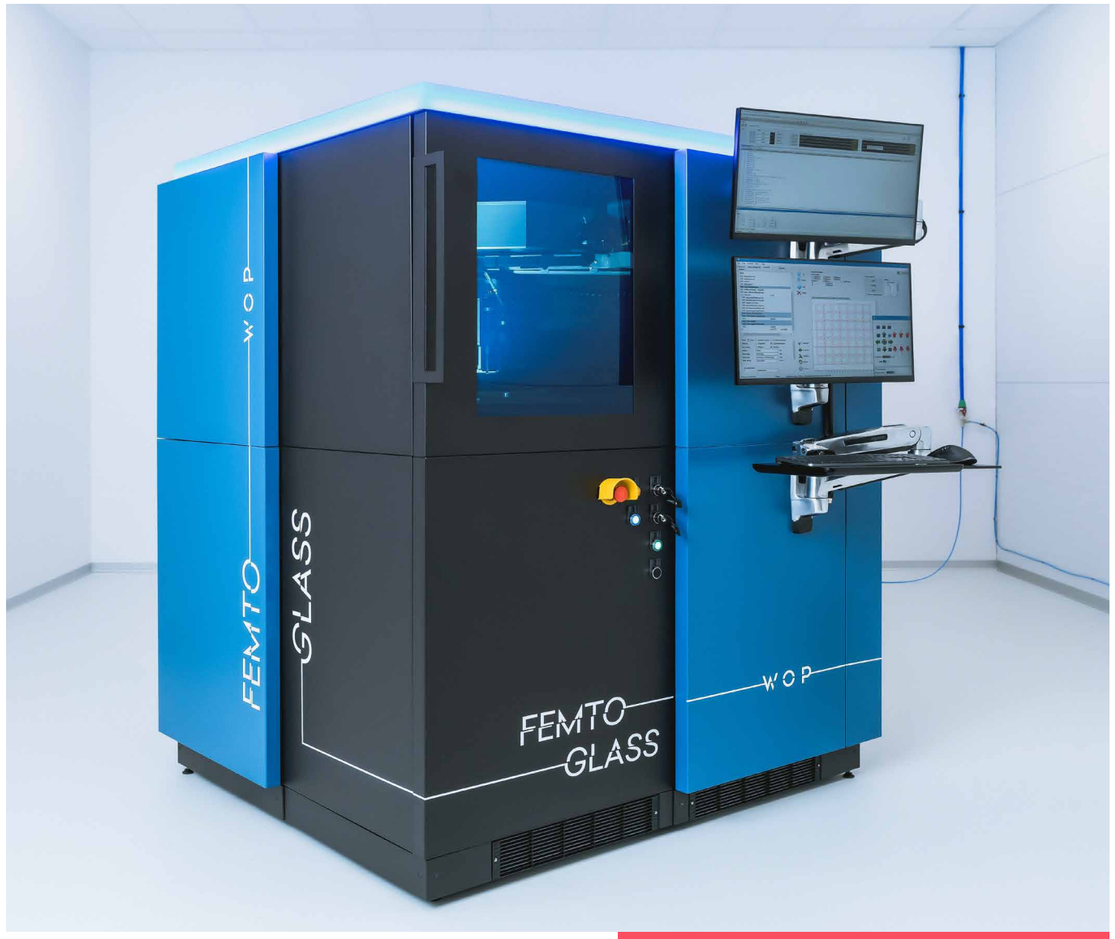
One of the key highlights of FemtoGLASS is its ability to cut ultra-thin glass up to 2 mm in a single pass.

Integrated beam stabilization and metrology solutions ensure consistent cutting accuracy and reliability, minimizing potential errors and optimizing workflow efficiency.

FemtoGLASS offers flexibility in its dicing process, accommodating different substrate thicknesses. This tunable feature ensures optimal results across your applications like glass wafer dicing, custom thin glass cutting, mobile phone screens, camera lens cutting, or micro-optic production.

FemtoGLASS outperforms other glass cutting methods

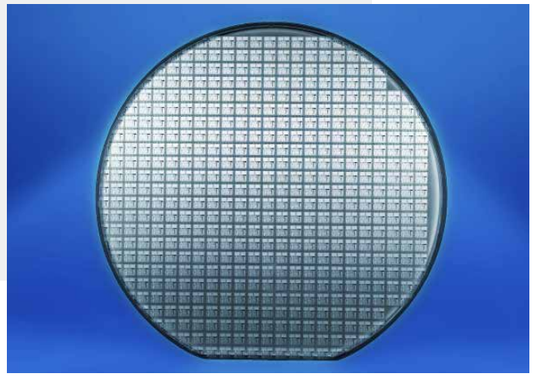
	Blade	Stealth laser	Laser ablation	WOP FemtoGLASS
Glass thickness	2 – 19 mm	200 µm – 10 mm	30 µm - 2 mm	30 µm – 10 mm
Glass type	All types	Non-tempered Sapphire	All types	Tempered Non-tempered Sapphire
Cutting speed	Up to 100 mm/s	Up to 300 mm/s	Up to 10 mm/s	Up to 800 mm/s
Possible shapes	Straight cuts only	T-shapes and circular shapes are possible	Any shape	Any shape possible
Surface chipping	< 200 µm	< 50 µm	< 50 µm	< 10 µm
Street requirement	> 50 µm	< 15 µm	> 50 µm	< 1 µm
Water (cooling / cleaning)	yes	no	yes	no
Debris	yes	no	yes	no
Thermal effect on device	yes	no	yes	no



Designed for industrial applications:

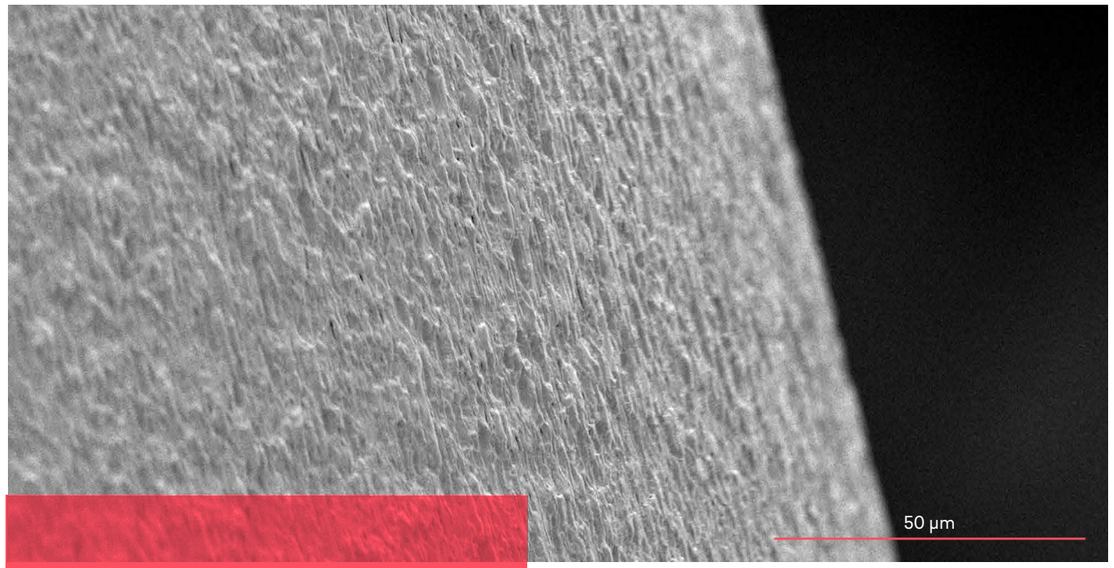
Augmented reality, smart glasses screens


Mobile phone screens, camera lenses


Wafer level glass product dicing

- Thin glass
- Microoptics elements
- Electronic components
- Display technologies
- Coated substrates

Glass & sapphire cutting

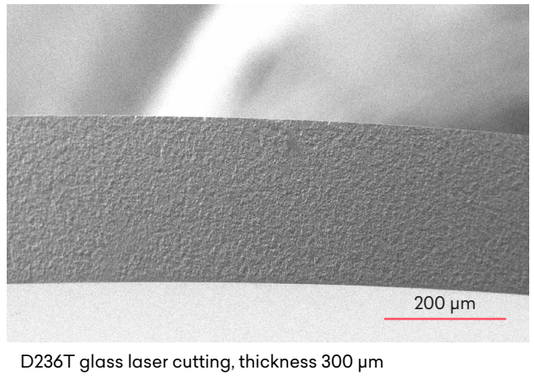


D236T glass laser cutting, thickness 300 µm

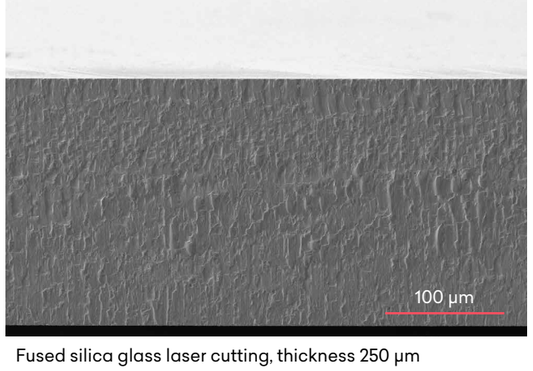
Quality of cut

- Cut width less than 1 µm
- Low chipping <20 µm
- No post-processing required

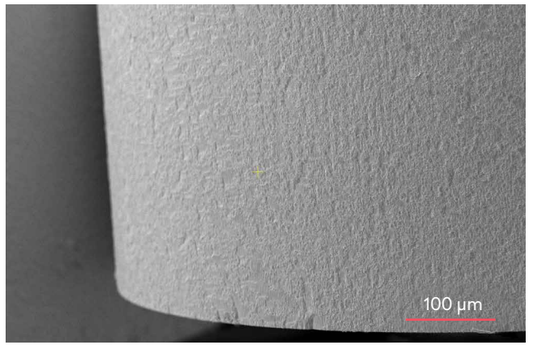
D236T glass laser cutting, thickness 300 µm



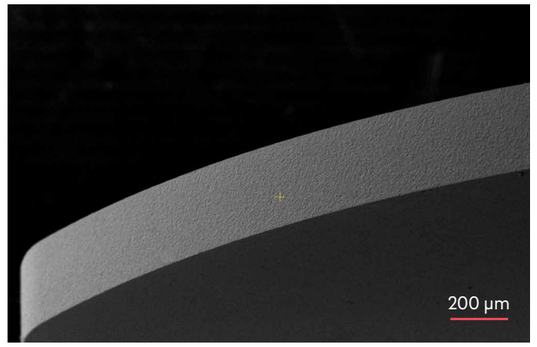
D236T glass laser cutting, thickness 300 µm



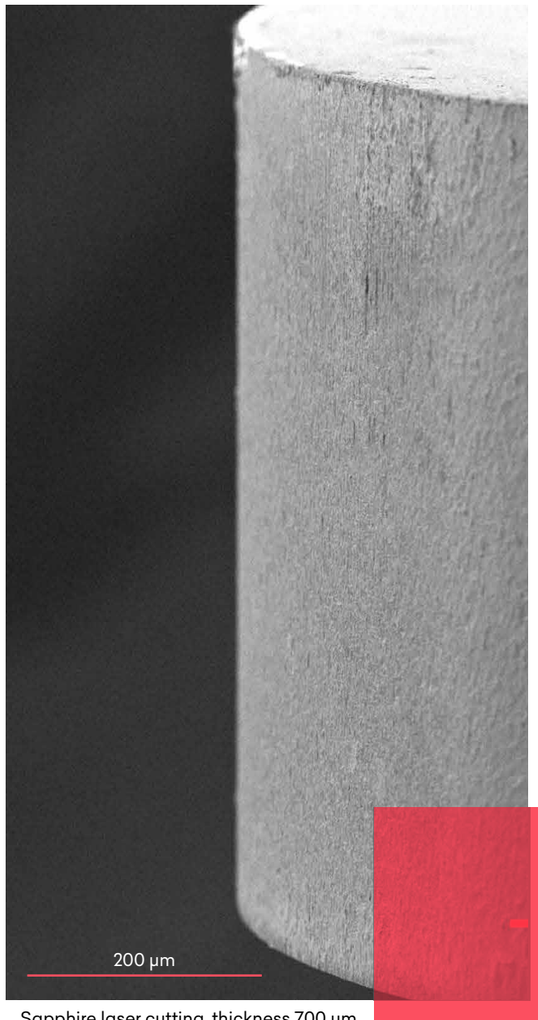
Fused silica glass laser cutting, thickness 250 µm



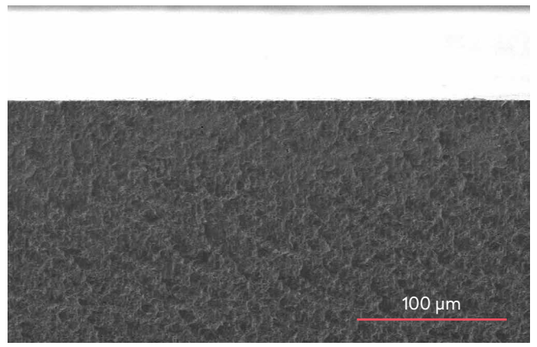
Sapphire laser cutting, thickness 400 µm



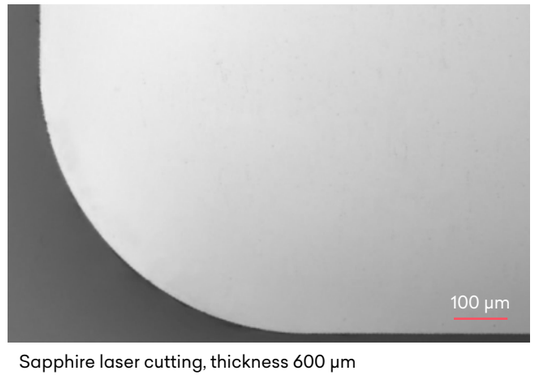
D236T glass laser cutting, thickness 300 µm



Sapphire laser cutting, thickness 700 µm



Sapphire laser cutting, thickness 400 µm



Sapphire laser cutting, thickness 600 µm

Type of glass

- Non-tempered glass
- Tempered glass
- Sapphire

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