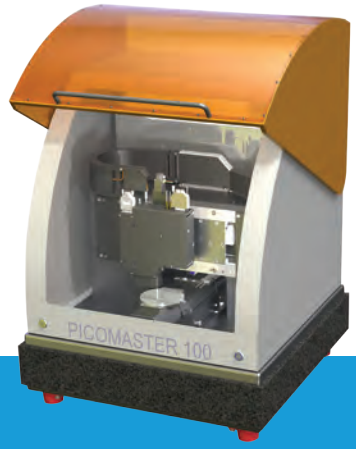
UV direct laser writer for maskless lithography



- Compact table top design
- < 300 nm features
- 375 nm source available for more demanding applications

The PicoMaster is a versatile UV Laser Writer with ultra high precision components, specifically designed to give the user the highest degree of freedom to create micro structures in photo sensitive layers. The rasterizing principle of the machine ensures proper and constant exposure over the whole surface. Scanning the 4” substrate at high speed and stepping the laser head with a software adjustable pitch.

- Highest resolution in the market with 405 nm laser
- Minimal maintenance costs
- Compact optical module: use a spare optical unit for revolutionary machine downtime reduction
- User-friendly operation

PicoMaster 200

- Stand alone system
- < 300 nm features
- High quality tool & high quality output

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	PicoMaster 100	PicoMaster 200
Vacuum pump integrated		✔
Max substrates size	4 x 4 “	8 x 8 “
Control PC integrated		✔
Touchscreen controller		✔
Mechanical properties		
Stroke Scan & Step	Max. 115 mm	Max. 230 mm
Scan axis	Air bearings	Air bearings
Repeatability	< 40 nm	< 20 nm
Resolution	2 nm	2 nm
Scan speed	Max. 300 mm/s	Max. 450 mm/s
Straightness axis	< 0.5 µm over 105 mm	< 1 µm over 230 mm
Substrate thickness	0 - 4 mm manual adjustment.	0 - 4 mm manual adjustment.
Substrate size	Min. 5 x 5 mm, max. 110 x 110 mm.	Min. 5 x 5 mm, max. 220 x 220 mm.
Exposable area	Max. 105 x 105 mm (speed depended).	Max. 215 x 215 mm (speed depended).
Optical properties		
Laser	405 nm, GaN laser diode.	405 nm, GaN laser diode.
Selectable spot sizes	280 nm optional 490 nm or 880 nm FWHM.	280 nm optional 490 nm or 880 nm FWHM.
NA	0.85	0.85
Intensity	Max. 5 mW in the spot.	Max. 5 mW in the spot.
Grayscale control	4096 levels	4096 levels
Autofocus	800 Hz bandwidth red laser controlled ± 0.15 mm height variation with auto height tracking.	800 Hz bandwidth red laser controlled ± 0.15 mm height variation with auto height tracking.
Focus offset	Adjustable by software control.	Adjustable by software control.
Data rate	Standard 10 Mhz.	Standard 10 Mhz.
Performance specifications		
CD[1]	Min 0.3 µm	Min 0.3 µm
1 Critical Dimension of the PicoMaster strongly depends on process parameters, such as resist types and layer thickness.		
Intensity uniformityw	< 0.5 %	< 0.5 %
Address grid	Standard: 20 nm in scan direction and programmable in step direction.	Standard: 40 nm in scan direction and programmable in step direction.

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