Dilase 125

The 1st plug and play direct laser writing system

Dilase 125 is a simple, robust and easy to use direct laser writing equipment for maskless lithography.

A **vacuum sample chuck** onto **motorized X and Y 100 x 100mm stages.**

A **laser source** aligned with a unique very large depth focus **optical line.**

Technological breakthroughs

Resolution: 5µm in standard

A 5µm beam which can write onto resist layers **from <1µm to more than 150µm thickness.**

This 5µm beam can reach **3µm feature size**.

High aspect ratio: 1x30

The **high depth of focus** resulting from the specific optical treatment line designed by Kloe, allows to write into thick films as easily than into thin films with the same edge verticality and **very low roughness**.

Writing modes: vector, scanning and a combination of both

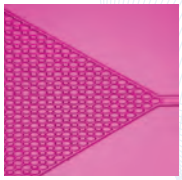
Vectorial writing mode ensures a **perfect rendering of edges** without stitching nor roughness.

The combination of both modes by fast filling in scanning mode and the finalizing contours in vector mode provides perfectly square pattern edges with **no roughness.**

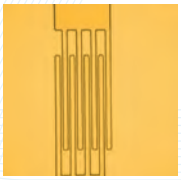
One-pass laser processing

No roughness induced by vertical stitching, **no need to adjust the focusing point,** between 2 samples.

Related applications



Microfluidics

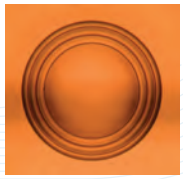


Microelectronics

Micromechanics

Surface functionalization

Photonics



Greyscale, microlens and gratings

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Performances

Linear writing speed	> 100mm.s^{-1}
Address grid	200nm
Repeatability	200nm
Resolution	5µm until 3µm
Aspect ratio	1x30
Absolute positioning precision	3µm / 100mm
Orthogonality	<1mRad
Operating temperature	22°C +/- 2°C

Working & Writing surfaces

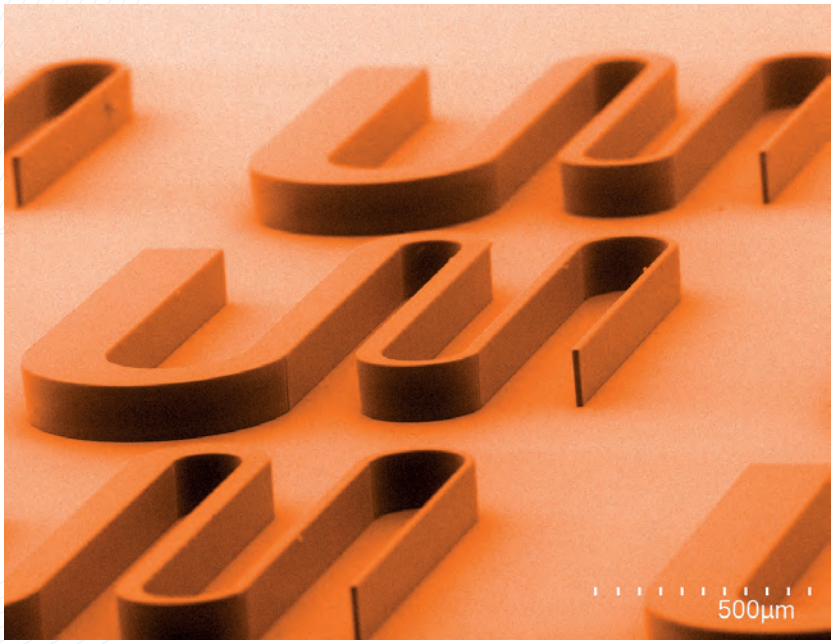
Accepted sample size	From 3 x 3mm² to 4" Up to 5" for square substrates
Maximum working surface	100 x 100mm²
Accepted substrate thickness	From 250µm to 5mm
Compatible photoresist	SU8, Shipley, AZ Resists, K-CL resist (developed by Kloe), K-NG (greyscale resin)

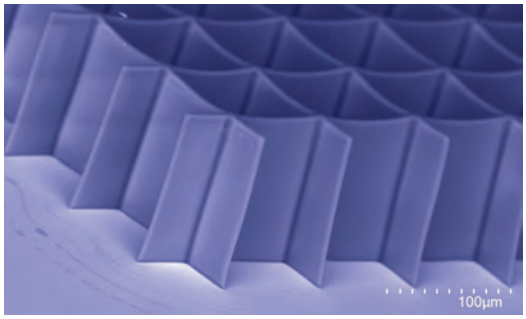
Laser source

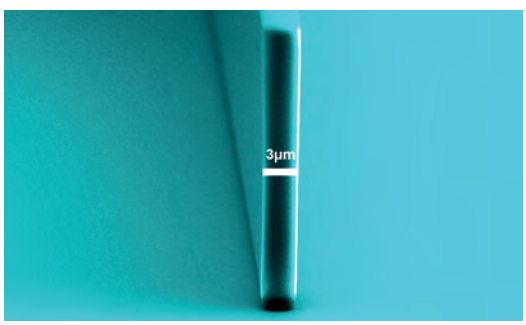
Wavelength	Standard 405nm (50mW) Option 375nm (70mW)
Laser beam size	5µm
Laser diode lifetime	Over 10 000 hours
Multilevel alignment function	2µm accuracy (option)

Other features

- Compact footprint: 494(L) x 565(W) x 626(H)mm
- Writing modes: vectorial, scanning and a combination of both
- Power supply: 100V/240V - 50Hz/60Hz
- Accepted files format: LWI (KloeDesign format), DXF and GDSII
- Integrated design software: KloeDesign, DFL Creator, DilaseSoft
- Motorized focal length
- Automated focusing setting
- Filters to reduce power density (option)
- Laser at 375nm (70mW) available (option)
- Video realignment system (option) acc: 2µm







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