µAligner



Features

- 365nm Wavelength
- Long life cold LED source with no warm up
- Very low divergence and high homogeneity
- Full hd calibrated digital microscope with 590nm coaxial yellow illumination
- Electronic wafer pressure and gap control
- Micrometer based X-Y-R wafer aligning stage
- 7 inch capacitive touchscreen based control
- Up to 5 inch photomasks with interchangeable mask holders
- 100mm diameter UV aperture

Mutech microaligner

Mutech microsystems microAligner is a compact high value UV mask aligner designed for microfabrication applications.

It allows for easy fabrication of multilayer devices on a multitude of photoresists, with excellent exposure quality.

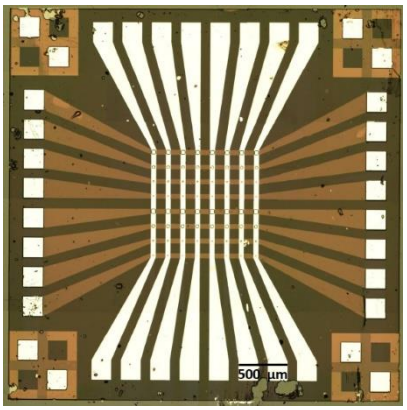
The easy to use, 7 inch touchscreen based control allows the user to align using the calibrated digital microscope and the X-Y-R micrometer based alignment stage.

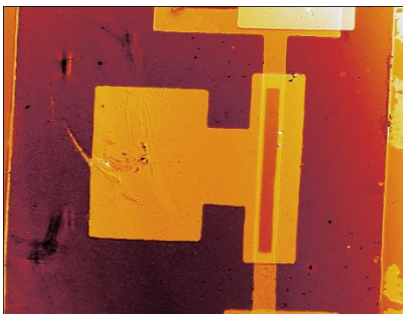
The fully electronic wafer pressure and gap control allows for easy alignment and very high repeatability of the exposure conditions between processes.

Main applications

The microAligner is ideal for the fabrication of high level systems for research applications. Main applications range from microfluidics, optics and biotechnology to microelectronic devices.

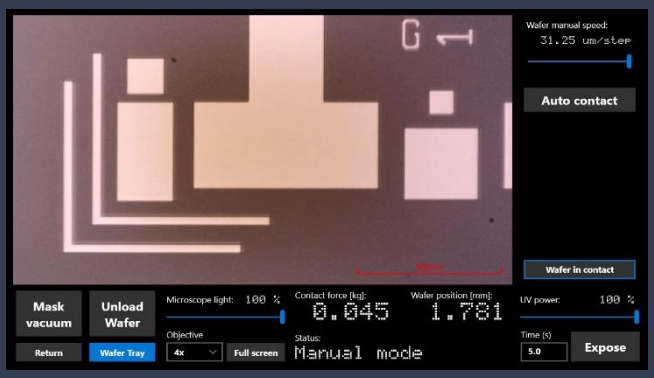
It provides the user with fast multilayer device fabrication capabilities thanks to its high resolution and high accuracy alignment.





LED source

The microAligner, compact mask aligner has very low maintenance requirements thanks to its LED based souce. It provides 365nm UV light with a very long life, no warmup times, instant turn on and no heat, with excellent homogeneity and low divergence.



7” Touchscreen

The microAligner is primarily controlled from its 7 inch capacitive touchscreen.

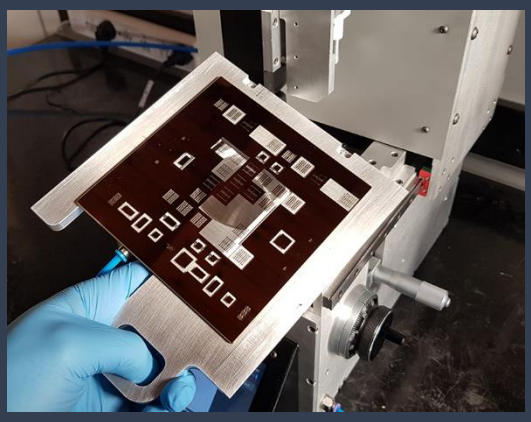
From here the user has access to all the controls of the machine, the microscope controls and video feed, exposure parameters, wafer stage controls and mask vacuum.

You have access to a real time wafer Z position and wafer pressure signals to allow for maximum repeatability.

User controls

The wafer Z position is controlled with a big 60mm rotary encoder for maximum control.

The user controls the wafer alignment to the mask using the X-Y-R stage with the mechanical micrometers. The microscope can be freely moved by the user around the photomask to look for alignment marks.



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Technical specifications

Mechanics	
X-Y-R Aligning stage	
Type of control	Mechanical, micrometer based
Accuracy	1µm
X-Y alignment span	6mm
R alignment span	5°
Z Wafer stage	
Type of control	Motorized
Stage step	0.31µm/step
Pressure sensing resolution	20g
Maximum pressure	5kg
60mm rotary encoder for precise gap/pressure control	
Wafer pressure sensing with live feedback for high repeatability between processes	
Interchangeable vacuum based photomask holders for 2",3",4",5" square photomasks and microscope slides	

UV Optics	
Wavelength	365nm
Exposure time	0.1 - 200 s
Exposure area	100mm diameter
Power density	0.2 - 20 mW/cm^2
Homogeneity	< 5%
Light divergence	< 3°
Motorized motion between aligning and exposure modes	

Microscope	
Camera resolution	1920x1080
Auxiliary illumination	590nm coaxial yellow LED
Field illumination mode	Clear field illumination
Alignment technique	Top-side alignment, single camera
Motion	3 axis, independent XYZ manual stage
Included objectives	
Objective	**Effective magnification on screen**
Low mag	90x
Medium mag	315x
High mag	480x

Electronics	
Display	7" full color LCD
User control	Capacitive touchscreen for machine controls and microscope.
32 Bits ARM cortex based integrated computer for maximum compactness	

Dimensions	
Size	350x490x470 mm
Weight	19kg
Power	110v/220v 250W

Combine it with our direct laser system for maximum capabilities

Our direct laser lithography system, the microLaser, allows the user to fabricate its own optical masks, offering an increased versatility.

The microAligner system, as a complementary tool of the microLaser, offers the possibility to work with 365 nm sensitive photoresists and high accuracy alignment capabilities to obtain high aspect ratio structures and a high throughput on the lithography process.

These possibilities make the microAligner and microLaser package the ultimate solution for the fast fabrication and development of multilayered device applications including biomedical, microfluidics and microelectronic devices.