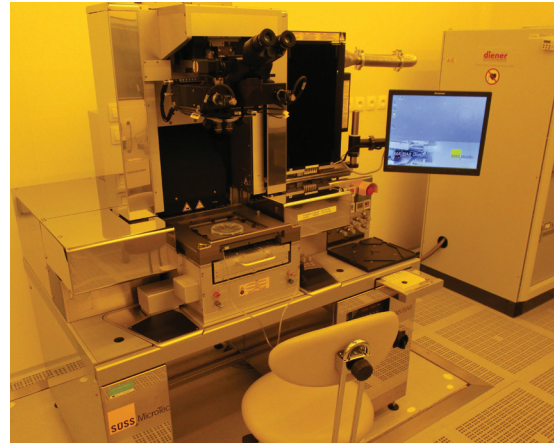


Mask aligner

SUSS MicroTec MA8

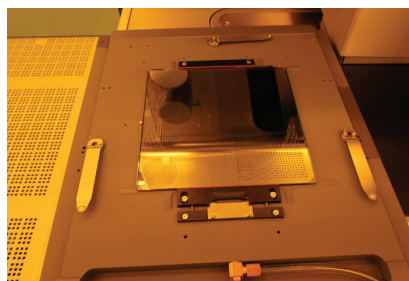
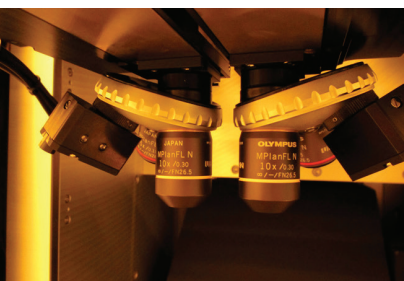
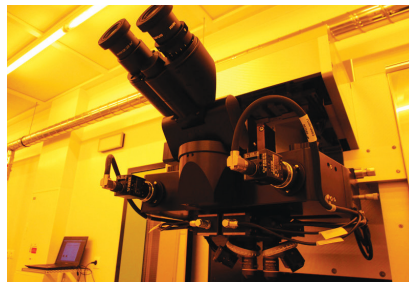
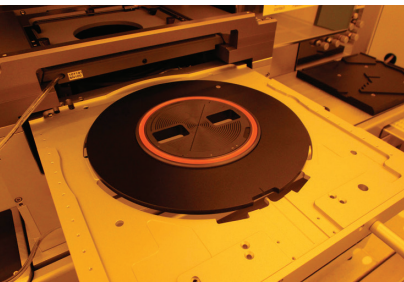
DESCRIPTION

Süss MicroTec MA8 is standard UV lithography tool for exposing wafers through mask. Photoresist-coated wafer is illuminated by UV light in the range of 350–450 nm wavelength, which is produced by 1000 W Hg lamp. Such power of the UV-lamp ensures high work-flow. This tool is equipped with high performance MO Exposure Optics® to give uniform illumination over the surface of up to 6 inch wafer. Exposure can be carried out in proximity mode or in contact mode. In the first case there is defined distance between mask and wafer during exposure, while in the other case wafer and mask are brought into direct contact. Depending on the force which pushes wafer to the mask, the tool works in the so called soft contact, hard contact, or vacuum contact mode. Vacuum contact offers highest resolution of pattern transfer, but also highest mask wear. MA8 is equipped with top side optical microscopes and bottom side microscopes, so alignment is possible from both sides of the wafer.



PRINCIPLE

MA8 is a UV-optical lithography tool. In the process, a flat substrate coated with photosensitive polymer film (called photoresist) is exposed by UV light in controlled manner. Exposed areas are subsequently either removed from the film (positive photoresist used) or left in the film (negative photoresist used) during the development procedure. The result is a mask created on the substrate, which then undergoes etching, deposition, or doping, as required. Photoresist film is finally removed (stripped). These steps can be repeated many times to produce final functional device, e.g. microchip.



SPECIFICATION

Mask and Wafer/Substrate	
Wafer Size	1" – 200 mm
Max. substrate size	200x200 mm
Min. Pieces	5x5 mm
Wafer Thickness	max. 10 mm
Mask Size	standard 2"x2" up to 9"x9" (SEMI)
Exposure Modes	
Contact	soft, hard, vacuum
Proximity	exposure gap 1–300 mm
Gap setting accuracy	1 µm
Modes	constant power, constant dose
Options	Flood exposure
Exposure Optics	
Resolution	1.5 µm (vacuum); 2 µm (hard); 3 µm (soft); 3.5 µm (proximity 20 µm)
Wavelength range	UV400 350–450 nm
Exposure source	Hg lamp 1000 W
Intensity uniformity	less than 3.5 % (200 mm)
Alignment methods	
Top Side Alignment (TSA)	accuracy less than 0,5 µm (with assisted alignment & SUSS MicroTec recommended wafer targets)
Bottom Side Alignment (BSA)	accuracy less than 1 µm

MORE INFO

Guarantor: Vojtěch Švarc (vojtech.svarc@ceitec.vutbr.cz)

Web: <http://nano.ceitec.cz/mask-aligner-nanoimprint-lithography-suss-microtec-ma8-ba8-gen3-suss-ma8/>

