

Digital Projection Maskless Lithography System

Model: SA-UVD

The SA-UVD digital projection maskless lithography system adopts digital micro-mirror technology for high-speed maskless pattern generation, achieving a minimum feature size of 500 nm.

Equipped with high-precision real-time focusing and visual alignment overlay technology, it is mainly used for rapid prototyping in the fields of MEMS, photonic devices, quantum computing chips, and sensors.



Feature

- DMD-driven exposure
- Rapid prototyping
- Visual alignment
- Multi-grayscale output

Application

- MEMS
- Photonic devices
- Quantum computing chips
- Sensors

Specifications:

Features

Parameter	Descriptions
Direct-write Resolution	500nm
Writing Speed	10 mm ² /min
Light Source	405 nm or 385 nm
Maximum Substrate Size	8-inch
Substrate Thickness	0.1 mm ~ 8 mm
Maximum Exposure Area	200 mm × 200 mm
Grayscale Level	256 / 1024 / 2048 / 4096 (optional)
Auto-focusing Range	70 μm
Dimensions (W×D×H)	850 mm × 940 mm × 1470 mm
Weight	250 kg (main unit weight)

Configurations

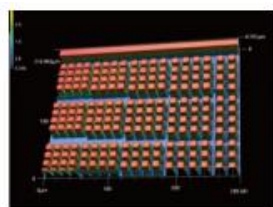
Parameter	Descriptions
Objective Lens	5×, 10×, 20×, 50×
Scripted Writing Mode	Provides a scripted programming interface to support user-defined processing structures.
Online Drawing Processing Mode	Supports real-time online drawing; allows direct drawing of custom graphics on the live sample image.
Writing & Slicing Software	Supports multiple formats including JPG, TIFF, and GDS.
Real-time Auto-focusing	Optical focusing
Electrical Conditions	230VAC $\pm$ 5%, 50/60 Hz, 10 A
Environmental Conditions	Temperature: 21 $\pm$ 1°C; Relative Humidity: 40%~60%, non-condensing
Compressed Air	6~9 bar, tolerance $\pm$ 0.5 bar
Ambient Lighting	Yellow light
Cleanliness Level	Class 1000 cleanroom

Performance Parameters (Full Magnification)

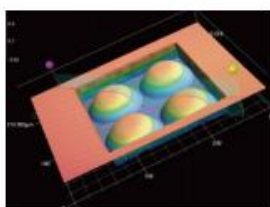
Objective Lens Magnification	50×	20×	10×	5×
Minimum Feature Size (μ m)	0.5	1	2	4
CD Uniformity (nm)	80	130	180	250
Writing Speed (mm^2/min)	10	50	100	180

Processing Cases:

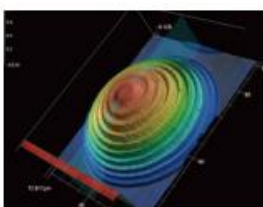
2.5D structures



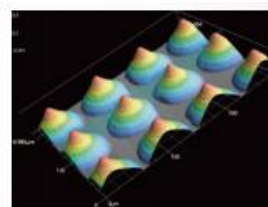
High-aspect-ratio square pillar structure



Microlens arrays

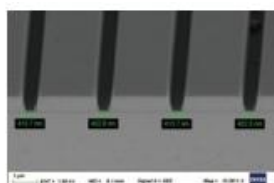


Cones



Cone arrays

2D structures



CD size (400 nm)



Silicon photonic chips



Microfluidic chips



QR code structure