

Direct Projection UV Lithographer

产品型号: TTT-07-UV litho

Product introduction

Ultraviolet Lithography plays an indispensable role in nowadays nanoscience related research. In short, photolithography is a technology selectively shine the UV light to the photosensitive thin films, and depending on the type of photoresists, the exposed or the unexposed region can be removed by proper lift-off process. Through this approach, the designed patterns can be transferred to the substrates for further device fabrication.

The minimum achievable dimension, namely the critical dimension (CD), together with the multiple exposure accuracy are the most important parameters for the photolithography tools. Our direct projection lithography tools (TTT-07-UVlitho) provides guaranteed 2 um CD (typically 1 um) while the alignment accuracy is up to 0.1 um, which can fulfil most of needs in the research labs. (for better CD and higher alignment accuracy, please contact us).

Conventional photolithography tool, eg. Mask aligner, request customized photomasks, which is very efficient in mass production, however, lack of cost effectiveness and timely flexibility, any change in the pattern design would request new photomasks. In contrast, any of your design can be realized in TTT-07-UVlitho in one second. Laser writer offers equivalent benefit by cease the requirement to the mask aligners, however, our machine is ways faster while maintaining all the advantages of a laser writer tool.

System overview

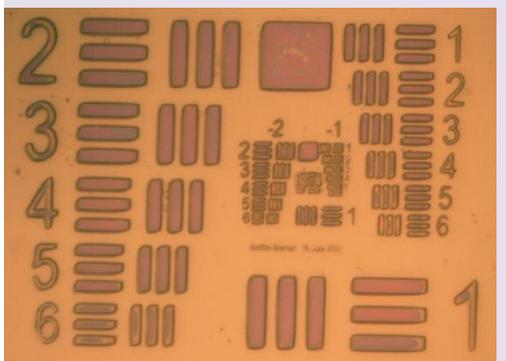
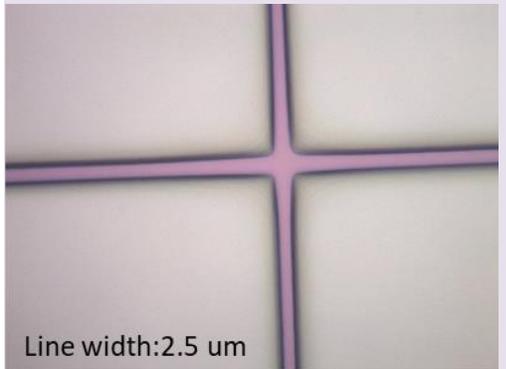


Key Features

1. Mask free
2. High throughput
3. Precision while easy to operate

Example data from TTT-07-UV Litho (Prototyping data, updating soon)

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Budget Version

1. Manual version with unbeatable price (enough for 2D materials)

Advanced options

1. Large scale wafer up to 6 inch
2. Grey level lithography
3. Automatic contact creation
4. UV litho in vacuum

Application examples

- Circuit pattern lithography
- Photomask fabrication
- Contact fabrication for 2D materials

Key Specifications (TTT-07-UV Litho)

Exposure wavelength¹	385 nm/405nm/460nm	
UV light power	>10 W	
Critical dimensions	10X Objective	2 um
	20X Objective²	1 um
Single short exposure area (< 1 second)	10X Objective	0.8mm*1.5mm
	20X Objective	0.4mm*0.75mm
Alignment accuracy	0.5um	
Pattern indicator	460nm/520nm/620 nm	
Exposure uniformity	Better than 85%	
Gray level	256 level	
Wafer size³	5 mm * 5 mm (minimum)	
	150 mm*150mm (Maximum)	
Efficiency (Per minutes)	10X Objective	8mm * 8mm
	20X Objective	4mm * 4mm
Sample stage accuracy	0.1 um (encoder resolution)	
Stroke length of stages⁴	8mm – 150mm	
Bidirectional accuracy	±0.5 um	
Stage type	Close-loop linear motor	
Software	LabView based Run Time Engine	
Equipment dimension	60 cm × 60cm × 60cm	
Equipment weight	50 kg	

Remarks:

- ¹Please contact us for other light source wavelength
²Other objective lens available upon requests.
³Please specify your typical wafer size when placing the order.
⁴Please specify the stroke length when placing the order.

Correlated technical solutions

We are able to provide below solutions upon requests.

- IR laser based 3D printing equipment
- PCB or other large area printing with less accuracy needs, single short 150 mm * 200 mm

Installation requirement

Temperature	20 – 40°C	Relative humidity	RH< 60 %
Power	220 V, 50 Hz		

Antivibration optical table is preferred, but not compulsory

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