

## General Specifications for the Mask Aligner System with Accessories

Sl. No.	Feature	Specification
1.	General Description (Item-wise price to be quoted)	<ol style="list-style-type: none"> <li>1. Basic System is to be used for photolithography process with deep UV (<math>\lambda \sim 250</math> nm) with Top side Alignment for the fabrication of electronic, photonic and MEMS devices</li> <li>2. Deep UV Nano Imprint Lithography (UVNIL) option</li> <li>3. Bottom Side Alignment option</li> </ol>
2.	Wafer Size	2", 3" and 4" dia or square substrates like 2"x2" to 4"x4".
3.	Mask Size/Mask Holder	Mask Holder for 4"x4", 5"x5" and 6"x6" mask plates with opening of 3"x3", 4"x4" and 5"x5", respectively.
4.	Top Side Alignment Microscope	<ol style="list-style-type: none"> <li>1. Split-field with 3 positions turret of objective lens holder. Objective 5X</li> <li>2. Should be concurrently able to show image in real time on screen using CCD camera. Eyepieces of 10X</li> <li>3. Magnification : <math>\sim 500x</math></li> <li>4. Motorized X and Y movement and manual rotation in Theta and objective separation is essential.</li> </ol>
5.	Alignment stage	X,Y and $\theta$ motion; X=Y= $\pm 5$ mm using micrometer screw or more $\theta = \pm 3^\circ$ or higher Mechanical accuracy: 0.1 $\mu\text{m}$ ( step size)
6.	Wedge Error Compensation	For bringing wafer and mask parallel to each other during alignment /proximity exposure.  Must be provided automatically.
7.	Alignment Accuracy	1 $\mu\text{m}$ or better
8.	Exposure mode	Vacuum contact, Hard Contact, Soft Contact Proximity contact –Separation is adjustable Between 5 to 20 $\mu\text{m}$ or better Resolution at 20 $\mu\text{m}$ –Please specify.
9.	Bottom side alignment Viewing Microscope	Minimum gap :35mm or more Working as split field viewing. Adjustable objective separation in X direction; Minimum 35 mm or lower and maximum 80mm or higher Adjustable Y movement: 50mm or more. Selectable Magnification : at least 80x/250x

10.	UV Exposure system	<p>Universal Lamp Housing upto 500 W  Hg 350W lamp (1 no.)  HgXe 500W lamp (1 no.)  With all necessary suitable sockets cables connection for 350W and 500W lamps.  Suitable Optics for 250nm and 405 nm wavelength.  UV sensors for 250nm and 405 nm  Parallel light with <math>\pm 5\%</math> uniformity or better on wafer up to 150mm dia .  Upgradable to Micro Optics with different illumination apertures to achieve uniformity better than <math>\pm 3\%</math></p>
11.	UV Lamp Power supply	<p>Single solid-state power supply for different power ranging from 200W to 500W or more.  Selectable Constant Intensity or Power mode.  Simultaneous display of actual Intensity and power of lamp with possible selection of different powers of lamps.  Safety interlocks for lamp cooling, power overflow etc.</p>
12.	UV light Intensity meter	<p>For measuring of real time intensity on wafer.  Suitable intensity probes for 250nm and 405 nm wavelength.</p>
13.	Vacuum pump	<p>Suitable double membrane oil free vacuum pump with tubes and connections.</p>
14.	Vibration free Table	<p>Suitable Vibration Isolation Table (required for fine lithography)</p>
15.	UV Nano Imprint Lithography ( UVNIL)	<p>Nano imprinting using stamp along with its holder.  Imprint Area: 1"x1" for 50nm application.  Suitable chuck for 2" /4" wafer.  One customize UVNIL stamp in quartz material with a pattern of 50nm resolution and having 1"x1" imprint area.</p>
17.	Warranty (onsite)	<p>One year standard warranty with parts and Additional two years warranty without spares must be quoted.</p>
18.	Installation base of similar system	<p>At least 3 similar systems must be installed in India.  Attach the list of all customers in India using similar system</p>