

# Collimated Proximity Exposure System With Automatic Alignment

Tamarack's Model 252 large area proximity mask aligner is unique in that it offers true non-contact photolithography designed to minimize yield issues often found in systems that rely on mask to substrate contact for imaging. At no time do the mask and substrate/wafer come into contact with each other.

Automatic alignment and optional substrate handling automation make the 252 a versatile system for both high volume and small to medium scale production of diverse components ranging from Solder Bumping, OLED's, HDI's, Hybrids, FPD's, Ceramics and other similar applications where accurate imaging and alignment are required.

## FEATURES

- True Proximity - Provides non-contact imaging through the entire process, eliminating defects due to mask contact and contamination, resulting in higher yields.
- Automatic alignment for high throughput and yields.
- Optional automatic substrate handling for high volume applications.
- High intensity, full field exposures up to 18" x 18".
- Flexible control of collimated exposure, providing accurate replication of fine line features in thick or thin resists..
- User friendly operator interface - Recipe driven process control with data collection.
- Automatic leveling, gap control and camera positioning.



## BRIEF DESCRIPTION

The Model 252 is a stand-alone, single sided alignment and exposure system. It uses a state of the art Pattern Recognition System that incorporates dual viewing optics and CCD cameras, for automatic mask to substrate alignment. These automatic features eliminate operator induced errors and operator fatigue and increase product yield.

Variable proximity gapping and a highly collimated light source make this system ideal for use with wet or dry and thick or thin photoresists. High intensity illumination and full field image transfer in a single exposure provides for high throughput.

# MODEL 252 SPECIFICATIONS

## Exposure System with Controlled Collimation

Power	1000, 2000, 5000 or 8000 Watt Hg Arc Lamp
Intensities	10 to 100 mW/cm <sup>2</sup> (Function of power and beam size)
Wavelength	350 - 450 nm (Peak intensities at 365, 406, 436nm)
Collimation half angle	< 3.0°
Declination angle	Within 2°
Uniformity	< ± 6%
Exposure energy settings	Unlimited

## Printing Capabilities

Proximity and Soft Contact

Proximity gap continuously variable

Beam Size - 18" x 18" maximum (455mm x 455mm);  
For larger sizes consult factory

## Alignment Optics High Resolution TV

Alignment type	Automatic Pattern Recognition
Accuracy	to ± 2 μm*
CCD cameras	Two (2)
Target fiducial type	Flexible

\* Consult factory for more stringent requirements.

## Options

Automatic loading and unloading of substrates

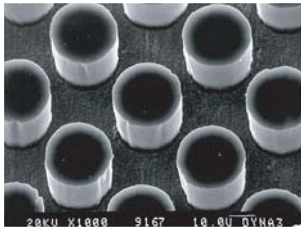
Reel to reel processing

Provisions for filters

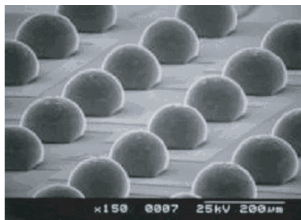
Class 10-100 enclosure

Separate chucks for vacuum contact printing

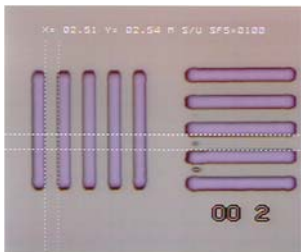
\* All specifications are subject to change without notice.



10 μm spaces using a 25 μm thick resist



Solder Bumping



2.5 μm lines & spaces (12 μm proximity gap)

