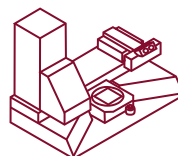


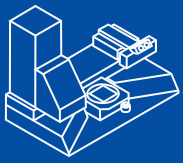


Photolithographic Products

ABM High Resolution
Mask Aligner
and Exposure System



ABM, Inc.
Photolithographic Products



ABM, Inc.
Photolithographic Products



R&D, Rapid Prototyping,
Pilot Production and Production



Microelectronic Devices

Electronic Packaging
(Wafer Bumping and Wafer-level CSP)



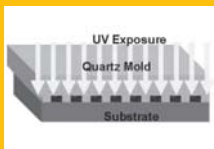
Optoelectronic Devices
(LED, Laser Diodes, Waveguide Arrays)



SAW Devices



MEMS and MOEMS



Nanoimprint Lithography

Biomedical and Photolysis Processes





Photolithographic Products

ABM Mask Aligner

ABM, Inc. is the leading manufacturer of mask aligners and exposure systems for a wide variety of photolithography applications including Semiconductors, MEMS, LED, Displays, Optoelectronic Devices, Nanotechnology, and Electronic Packaging.

ABM mask aligner and exposure systems are used in Universities, R&D Centers, Pilot Production and Production facilities worldwide.

ABM, Inc. USA was established in 1986 in Silicon Valley California and has been serving the semiconductor industry for over 20+ years. The ABM, Inc. Group includes ABM, Inc., USA and ABM, Inc. Asia Pacific Ltd. with a global network of sales and service offices and representatives.

ABM Mask Aligner Model

Manual, Semi-Auto and Fully Auto System

Frontside Alignment

Backside Alignment

Support 2"- 8" Round/Square Substrate and Pieces-part on standard, rough and patterned substrate

Available 200-2000 Watt lamp

Available NUV and DUV wavelength

Selection of CCD Camera or Optical Microscope system

Support Vacuum Contact, Soft/Hard Contact and

Proximity mode exposure



ABM Manual Mask Aligner System



Model: ABM/6/350/NUV/DCCD/M

ABM Front Side Alignment System

Key Performance Features

Uniform Beam Size: 6" diameter/square Beam Uniformity:

< $\pm 1\%$ over 2" Round Area

< $\pm 2\%$ over 4" Round Area

< $\pm 3\%$ over 6" Round Area

Printing Resolution:

< 0.5 micron for vacuum/hard contact (NUV exposure)

< 0.3 micron for vacuum/hard contact (DUV exposure)

Alignment Accuracy : +/- 0.5 micron

Work with Positive, Negative and Thick photoresist,

Up to 300 micron thick SU-8 with up to 10:1 aspect ratios

Soft/Hard Contact, Vacuum Contact, and Proximity Printing

Main Specifications

6" Exposure Lightsource for G-, H-, I-Line wavelength output

Work with 2", 3", 4", 6" (Round/Square substrate) and piece-parts

Adjustable wattage 2-Channel 350 Watt NUV Constant

Intensity/Constant Power controlling power supplies.

Option for 500, 1000 and 2,000 Watt DUV and NUV power supplies

Single/Split-field Dual CCD Camera alignment systems and

Single/Split-field Microscope alignment system are available

Upgradable to Double Side Exposure System



ABM Manual BSV/BSIR Mask Aligner System



Model: ABM/6/350/NUV/DCCD/BSV/M

ABM Double Side Alignment System



Key Performance Features

BackSide Alignment Accuracy : +/- 0.5 micron

Work with Positive, Negative and Thick photoresist,
Up to 300 micron thick SU-8 with up to 10:1 aspect ratios
Soft/Hard Contact, Vacuum Contact, and Proximity Printing
Constant Power/Constant Intensity Controlling Power Supply

350 Watt 6" NUV Lightsource
(with broadband 365/400/436 nm mirrors)
365 nm Output Intensity – 20-22 mW/cm²
400 nm Output Intensity – 40-45 mW/cm²
436 nm Output Intensity – 10-12 mW/cm²

Main Specifications

6" Exposure Lightsource for G-, H-, I-Line wavelength output
Work with 2", 3", 4", 6" (Round/Square substrate) and piece-parts

Adjustable wattage 2-Channel 350 Watt NUV Constant
Intensity/Constant Power controlling power supplies.
Option for 500, 1000 and 2,000 Watt DUV and NUV power supplies

Single/Split-field Dual CCD Camera alignment systems and
Single/Split-field Microscope alignment system are available

Backside Infrared (BSIR) alignment system
Backside Visible (BSV) alignment system

ABM Large Area Manual Mask Aligner System



Model: ABM/8/500/NUV/DCCD/M

ABM 8" Front Side Alignment System

Key Performance Features

- Uniform Beam Size: 8" diameter/square Beam Uniformity: 500W 8" Lightsource (NUV)
- < $\pm 1\%$ over 4" Square Area
 - < $\pm 2\%$ over 6" Square Area
 - < $\pm 3\%$ over 8" Square Area
- Printing Resolution:
- < 0.5 micron for vacuum/hard contact (NUV exposure)
 - < 0.8 micron for soft contact
 - < 1 micron for 50 micron proximity gap
 - < 2 micron for 100 micron proximity gap
- Alignment Accuracy : +/- 0.5 micron
- Work with Positive, Negative and Thick photoresist,
- Up to 300 micron thick SU-8 with up to 10:1 aspect ratios
- Constant Power/Constant Intensity Controlling Power Supply

Main Specifications

- 8" Exposure Lightsource for G-, H-, I-Line wavelength output
- NUV or DUV wavelength
- Work with 2", 3", 4", 6" (Round/Square substrates and piece-parts)
- Single/Split-field Dual CCD Camera alignment systems and Single/Split-field Microscope alignment system are available.
- Upgradable to Double Side Exposure System

ABM Semi-Auto Mask Aligner System



Model: ABM/6/350/NUV/DCCD/SA

ABM Front Side Semi-Auto Alignment System

Key Performance Features

Specifically for opto-electronic device and LED manufacturer with PLC control and touch panel monitor system. By pressing only one button to avoid the unnecessary operational error to complete the whole process and effectively increase the productivity and stability.

6" Exposure Lightsource

Alignment Accuracy : +/- 0.5 micron.

Work with 2", 3", 4", 6" (Round/Square substrate) and piece-parts

Work with Positive, Negative and Thick photoresist,

Up to 300 micron thick SU-8 with up to 10:1 aspect ratios

Support for PSS process

Soft/Hard Contact, Vacuum Contact, and Proximity Printing

Constant Intensity/Constant Power controlling modes.

Upgradable to Double Side Exposure System

6" Exposure Lightsource for G-, H-, I-Line wavelength output

PLC control with Touch Panel Monitor System

Adjustable wattage 2-Channel 350 Watt NUV Constant Intensity/Constant Power controlling power supplies. Option for 500, 1000 and 2,000 Watt DUV and NUV power supplies.

Single/Split-field Dual CCD Camera alignment systems and Single/Split-field Microscope alignment system are available.

ABM Fully Auto Mask Aligner System



Model: ABM/6/500/NUV/DCCD/FA

ABM, Inc. releases their first Fully Auto Aligner ABM/6/350/NUV/DCCD/FA, which inherits the stability and superior quality of ABM mask aligner products. With its high throughput ability, customer can produce their product with new design and introduce into the market with shorter time. The Fully-Auto System with throughput of 120-130+ WPH with max. 6" substrate and the alignment accuracy up to +/- 0.5 micron. The auto alignment system can be tuned to achieve the best alignment image and work with different kinds of substrate, e.g. transparent and rough surface substrate.

ABM Fully Auto Mask Aligner Specifications:

Model: ABM/6/350/NUV/DCCD/FA

High Productivity:

- Double Cassettes for loading and unloading
- Linear motion transfer arm for processing three substrates simultaneously, throughput of 120-150 WPH
- Special design of transfer arm for carrying thin, warped substrate
- Precision design of UV lightsource provides high brightness of light intensity output.

ABM Fully Auto Mask Aligner Specifications

Frontside alignment accuracy: +/-1 micron

Alignment System: Split field dual CCD camera system

Split field separation: 10mm to 150mm

UV wavelength: NUV 365/400, DUV 220, 254

Uniform Beam Size: 6" diameter/square Beam Uniformity:

< ±1% over 2" Round Area

< ±2% over 4" Round Area

< ±3% over 6" Round Area

Substrate size: Min. 2" to Max. 6" (round)

Mask size: Min. 3" to Max. 7" (square)

Operation Mode: Contact and Proximity printing

Max. Proximity gap between mask and substrate is 300 microns.

Alignment Key: Standard cross pattern

Alignment stage: Electromechanical motion stage.

Auto Z-planarization, Wedge compensation and leveling.

17" LCD High resolution LCD monitor for alignment system

15" Touch panel HMI display

Main controlling system: PC/PLC

ABM Mask Replicator System



Model: ABM/6/350/NUV/MR

ABM Mask Replicator System

ABM, Inc. Stand alone exposure system includes with the NUV/DUV lightsource, power supply and manual/auto exposure controller.

This product mainly focuses on single lithography process with high productivity throughput in low cost solution.

The exposure area can be 4"/6" 8" and max. up to 20"

350W 6" lightsource (NUV)

365 nm Output Intensity – 18-20 mW/cm²

400 nm Output Intensity – 35-40 mW/cm²

Main Functions:

Contact Vacuum On/Off

Auto-Planarization

Z-axis Proximity Gap Setting (0-6mm)

N2 On/Off

N2 Level adjustment

N2 and Vacuum gauges

ABM Mask Aligner are widely used in production and reserach of blue LED on PSS substrate, red LED, yellow LED , TFT-OLED. The mask aligner is highly reliable and stable with highly throughput. The systems are widely used in many reserach institute and LED factories where is located in USA, Taiwan, Korea and

Main Features:

Bean Uniformity : $\pm 1\%$ in 2" round area

6" Exposure area and best for 2" and 4" LED wafer process

Special designed chuck for 2" and 4" LED substrate

Model of System: Manual, Semi-Auto, Fully Auto System

Power supply : 350W

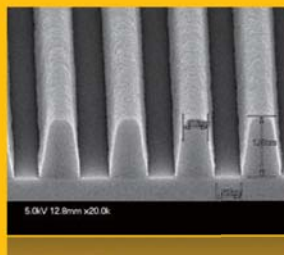
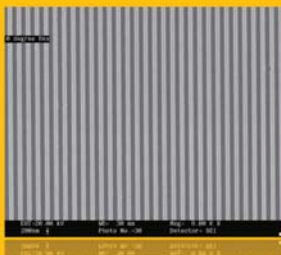
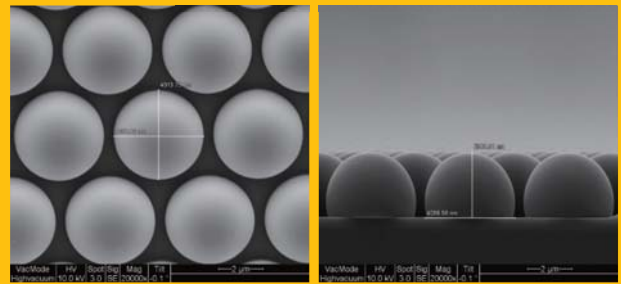
Alignment System: 90-600x continuous CCD Zoom Maginification

Minimum split field sparation with prism block: 10mm to 200mm

Special inspection system supports for rough surface substrate imaging

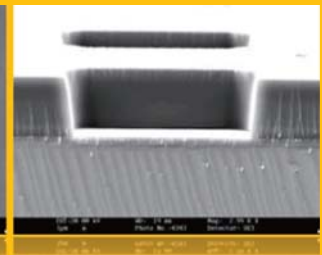


PSS Process Sample



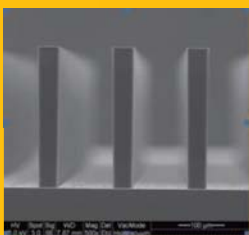
Case 1: NUV Printing (365nm/ 400nm/ 436nm line)

Scanning Electron Micrograph Feature Sizes: 0.6
 With using AZ PLP 50XT photo resist
 Expose with NUV light for 3s and develops with 35s



Case 2: ABM mask aligner works with thick resist

Scanning Electron Micrograph
 Feature Sizes: 25 x 25 microns square



Case 3: ABM mask aligner with Ultra-thick resist

Scanning Electrons Micrograph Feature Sizes :
 30 microns square SU-8
 Height : 300 microns (10:1 aspect ratio)

Thick Resist Process

Technical Support and Service



Our cleanroom is qualified with class 100 certificate and we provide R&D and lithography service to our customers. We also have professional engineer and warehouse in China, Hong Kong and Taiwan to provide immediate service and technical support to our customers.

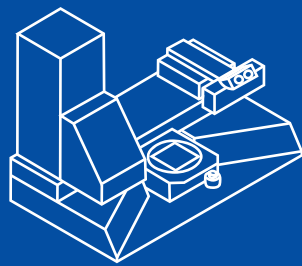
Options and Accessories



UV Light Intensity Meter

Tailor made Mask Holder

Tailor made Chuck



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