



NEUTRONIX-QUINTEL

NXQ8000 Mask Aligner

- The NXQ8000 Mask Aligner combines 'open architecture' modular design with precision alignment and exposure features. It supports vacuum, contact and proximity printing and handles partial and whole substrates up to 200mm (8") diameter or up to 6" square.
- The versatility of the NXQ8000 has made it the choice of manufacturing facilities, R&D Centers and University programs around the world, for a wide range of technologies.
- Scalable from R&D to HVM by adding Robot Upgrade; same process recipes from R&D to HVM.

BioMEMS
MicroFluidics
MEMS
WLP
LED
SOLAR



Q8000 Mask Aligner

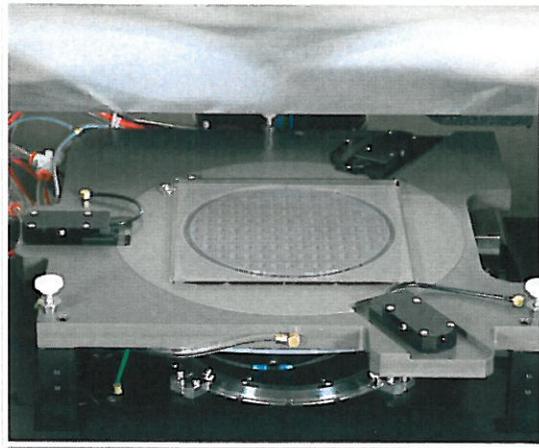
NXQ8000 MASK ALIGNER

Features

- Wafer sizes from pieces to 200mm (8") diameter or substrates up to 6x6" Square
- Windows based menu driven Graphical User Interface
- Modular Lamp house Design allowing easy change over from Broadband and NUV to DUV
- Fully Motorized X-Y-θ Alignment Stage on both manual and auto load systems. Controlled with Joystick or Computer
- Motorized top and bottom microscopes on both manual and auto load systems. Controlled with Joystick or Computer.
 - Recipe stored microscope positions
- Fiberoptic thru objective illumination
 - Recipe stored intensity settings
- Easy manual tray-load for substrate loading / unloading on both manual and autoloading systems
- Multiple Contact and Proximity Exposure Modes
- Precise control of contact force during WEC – Ideal for fragile substrates
- Chamber Purge Feature – Recipe driven electronic controlled regulator for purge gas in mask / wafer chamber.
- VideoView Splitfield/ Singlefield Microscope with 6.5:1 Optical Zoom high resolution CCD Cameras or Quadcam – Two high resolution CCD cameras per objective, switch between Wide View and High Magnification without refocusing! Quadcam standard on auto load systems, optional on manual load systems.
- Large Gap Alignment Software
- Pulsed Exposure Timer Sequencing Software
- Simple topside mask loading
- UltraSense constant power or constant intensity UV power supply
- Choice of UV exposure power supply – 350/500 Watt or 500/1KW
- Enhanced Printing Optics utilizing dual integration and collimation for excellent printing resolution and CD
- Active Shock Isolation table and Active Isolation from Robot Section
- Easily configurable for a wide variety of applications and options
- Very Low maintenance – Z Axis air bearing guide set and air bearing frictionless ball seat for WEC
- Q-Vision Automatic Alignment Vision Recognition Software – Included on both manual and auto load systems
 - Matrox Geometric Model Finder (synthetic pattern generation) Optional
 - Align for Speed or Accuracy, recipe configurable
 - Smart Align Technology, software recognizes alignment mark trends between Align Gap and Print Gap and optimizes for speed

Options

- Robotic auto load for cassette to cassette operation
- Automated mask changer
- Integrated bar code reader
- SECS / GEM Software
- Optical Backside Alignment and Backside Infrared (IR)
 - Easily upgraded in the field
- Fiberoptic Ring Illumination for oblique and dark field illumination (optional for top side, included with backside alignment option)
- NUV Hg (280-350nm) / DUV Hg-Xe (220-280nm) exposure optics
- MagnaView (optical) splitfield/ singlefield microscope (Manual Load Only)
 - CCTV option for MagnaView Microscope
- 500 Watt / 1KW Constant Power or Constant Intensity power supply
- Edge Handling Robot, Pre-Aligner and alignment stage (automated systems only)
- UV-NIL Hardware and Process Support Package
 - Includes Tooling, Hardware, Software, Polymers, Demo Stamp, Methodology
 - Guarantee Delivery of 100nm Process
- Scan Stage – Move Wafer and Mask Simultaneously +/- 19mm under microscopes
- Mask and Chuck Storage Racks (optional on manual systems only)



Technical Data

Exposure Modes

- Soft, Pressure, Vacuum Contact and Proximity Printing Modes

Print Resolution

- Proximity 3um at 10um gap
- Hard Contact 1um
- Vacuum Contact 0.5um

Cycle Time and Alignment Accuracy (1 sec exposure)

- TSA Auto Alignment Mode (Contact) 100+ wph: 1um 3 sigma
- TSA Auto Alignment Mode (Proximity) 80+ wph: 1um 3 sigma
- BSA Auto Alignment Mode (Contact) 100+ wph: 1.5um 3 sigma
- BSA Auto Alignment Mode (Proximity) 80+ wph: 1.5um 3 sigma
- First Mask Mode 120+ wph

Substrate Size

- Round 15mm (0.6") to 200mm (8")
- Diameter Square 0.6" X 0.6" to 6" X 6"
- (Pieces smaller than 13mm can be aligned with singlefield)
- Up to 10mm Thick

Mask Size

- 2.5" X 2.5" up to 9" X 9"

Alignment Stage

- Alignment Travel X-Y Motorized with automatic re-centering
- Alignment Travel Theta Motorized with automatic re-centering
- Stage Scan – Optional on Manual System +/- 19 mm
- X-Y Movement +/- 5mm, 100nm resolution
- Theta Rotation Range +/- 7.5 degrees, 4x10e-5 resolution
- Mask/ Wafer separation 0 – 1000um with 1um resolution

Video View Microscope Travel Range (not including Scan Stage)

- Left Microscope Travel X
 - o Offset Objectives -12.5 to -87.5mm
- Right Microscope Travel X
 - o Offset Objectives +12.5 to +87.5mm
- R/L Microscope Travel in Y +/- 12.7mm

Top Side Microscopes

Video View – Standard

- 7:1 Optical Zoom or Quadcam
- 5x Objectives Standard, 2x, 10x and 20x optional

Magna View – Optional (Manual System Only)

- 5:1 Optical zoom
- Objectives: 2x, 5x, 10x or 20x
- Eyepiece Objective 10x

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Electronics

- Programming & Control PC based.
- Device Net Control System for pneumatics and sensors
- Ethernet Motor Control

UV Lamphouse/ UV Exposure Optics

- UV Lamphouse 350/500W or 500/1KW
- Standard Exposure Optics Broadband (350-450 nm)
- Optional NUV 280-350nm
- Optional MID UV 280-450nm
- Optional DUV 220-280nm
- Intensity (8" Full Field)
 - 350 W Lamp 10-12 mw/sq cm 365nm, 25-30 mw/sq cm 405nm
 - 500 W Lamp 13-16 mw/sq cm 365nm, 34-40 mw/sq cm 405nm
 - 1KW Lamp 20-24 mw/sq cm 365nm, 46-55 mw/sq cm 405nm
- UV Uniformity +/- 2%, 150mm, +/- 3% 200mm

System Requirements

- Voltage 110VAC/60Hz or 240VAC/50Hz
- Compressed Air 6.2 -7.6 bar (90-110 PSI)
- Vacuum -0.7 bar (21" Hg)
- Nitrogen (or CDA) 4.2 bar (60 PSI)

System / Module Data

- W x D x H ~1622 x 1214x 1740mm (63.85" x 47.79"x 68.51")
- Weight 771 kg (1700 lbs auto load; 1580 lbs manual load)

