



EVG[®]620 NT EVG[®]6200 NT Mask Alignment Systems (semi-automated / automated)



Introduction

State-of-the art mask alignment technology on a minimized footprint area

The EVG620 NT Gen2 and EVG6200 NT Gen2 mask aligners are exemplary production systems for wafer sizes up to 200 mm. The systems provide state-of-the-art mask alignment technology on a minimized footprint area combined with the utmost throughput and optimized total cost of ownership. Operator-friendly software, minimized time for mask and tooling changes, as well as efficient worldwide service support make them the ideal solution for any manufacturing environment. The EVG620 NT Gen2 and EVG6200 NT Gen2 mask alignment systems are equipped with integrated vibration isolation and achieve excellent exposure results for a wide range of applications, such as exposure of thin and thick resists, patterning of deep cavities and comparable topographies, as well as processing thin and fragile materials such as compound semiconductors. Furthermore, the EVG's proprietary SmartNIL technology is supported on all system configurations.

Exposure Optics

EVG's latest enhancement for exposure optics is an LED lamp setup. Low energy consumption and long lifetime are among the UV-LED light source's biggest advantages, as no warm-up or cool-down phase is required. In addition, LEDs need to be powered only during the exposure and the technology eliminates the obligation for typical facilities (exhaust, cooling gases), mechanical filter or regular mercury arc lamp changes. Exposure spectrum setup is easily and practically done in the user software interface. This ideal combination will not only minimize your running and maintenance costs but also add value in regards to the operator safety and environmental friendliness.



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Features

- Wafer/substrate size from pieces up to 200 mm/8"
- Fragile, thin or warped wafer handling of multiple wafer sizes with quick change-over time
- Automated contact-free wedge compensation sequence with proximity spacers
- Auto origin function for precise centering of alignment key
- Dynamic alignment function featuring real-time offset correction
- Supports the latest UV-LED technology
- Rework sorting wafer management & flexible cassette system
- Manual substrate loading capability on automated system
- Field upgradeable from semi-automated to fully automated version
- Minimized system footprint and facility requirements
- Multi-user concept (unlimited number of user accounts and recipes, assignable access rights, different user interface languages)
- Agile processing and conversion re-tooling
- Remote tech support and SECS / GEM compatibility
- Additional capabilities:
 - Bond alignment
 - IR alignment
 - Nanoimprint lithography (NIL)

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Technical Specification Sheet



EVG® 620 NT / EVG® 6200 NT Mask / Bond / NIL Alignment Series

Mask - Substrate - Wafer Dimensions

Mask Size	up to 7"	up to 9"
Substrate / Wafer Size	up to 150	up to 200 mm
Wafer Thickness	up to 10 mm	

Top-Side Microscope

Movement Range	EVG620 NT Gen2	EVG6200 NT Gen2
X	32 - 150 mm	32 - 200 mm
Y	± 70 mm	± 75 mm

Recipe controlled microscope illumination spectrum
Optional: Flat objectives for enhanced travel range,
dark field objectives with ring lights for improved contrast

Exposure Optics

Wavelength Range	NUV: 350 - 450 nm DUV: down to 200 nm (opt)
Exposure Source	Mercury Lamp 350 W, 500 W or 1000 W UV LED Lamp house
Uniformity	≤ 4%
Filter Changing Unit	Mercury Lamp: mechanical LED Light Source: SW tunable

Min. Feature Size to Pattern on Hg / LED Lamphouse (NUVsetup)

Substrate / Wafer Size	150 mm	200 mm
Vacuum Contact Mode	≤ 0.8 µm	≤ 1.0 µm
Soft Contact	≤ 2.2 µm	≤ 2.4 µm
Proximity Mode @ 20 µm Gap	≤ 3.6 µm	≤ 3.8 µm

Utilities

Vacuum	< 150 mbar
Compressed Air	6 bar
Nitrogen	optional: 2 or 6 bar
Exhaust - Mercury Lamp	required
Exhaust - LED Lamp	not required

System Control (SW & User Interface)

Operation System: Microsoft Windows
File Sharing and SW Backup Solution
Unlimited Storage of Recipes, Parameters stored in Process Recipe
Multi-Language User GUI & Support: EN opt.: CN, DE, FR, IT, JP, KR
Real-Time Remote Access, Diagnostics and Troubleshooting

Alignment Modes

Top Side Alignment Accuracy	≤ ± 0.5 µm
Bottom Side Alignment Accuracy	≤ ± 1.0 µm
IR Alignment	≤ ± 2.0 µm

Bottom-Side Microscope

Movement Range	EVG620 NT Gen2	EVG6200 NT Gen2
X	56/78 - 150 mm	78 - 180 mm
Y	± 12 mm	± 12 mm

Recipe controlled microscope illumination spectrum
Optional: Flat objectives for enhanced travel range,
dark field objectives with ring lights for improved contrast

Exposure Modes

Contact	soft, hard, vacuum (adjustable)
Proximity Exposure Gap	1 - 1000 µm
Gap Setting Accuracy	1 µm
Modes	constant power CP (Hg/LED) constant dose CD (Hg/LED) constant time CT (Hg/LED) constant intensity CI (LED)
Options	interval, flood, sector exposure

Optional features | Bond Alignment & NIL

Bond Alignment Accuracy	≤ ± 2.0 µm
Soft NIL Alignment Accuracy	≤ ± 2.0 µm
NIL Soft Stamp Resolution	≤ 50 nm pattern resolution

Alignment Stage

MA movement range	BA movement range
X: ≥ ± 5 mm	X: ≥ ± 5 mm
Y: ≥ ± 5 mm	Y: ≥ ± 5 mm
Rotation: ≥ ± 3.0°	Rotation: ≥ ± 3.0°
Resolution	0.1 µm
Contact Force	adjustable 5 N - 40 N
Wedge Compensation	fully automatic, adjustable

Dimensions / Footprint

Footprint	1.95 m ²
Height	2.10 m
Weight	~ 980 kg

Get in touch:

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