



EVG® IQ Aligner® NT

Automated Mask Alignment System



Introduction

The IQ Aligner® NT is optimized for zero-assist contactless proximity processing at highest throughput.

The IQ Aligner NT is the most productive and technically advanced automated mask alignment system for high-volume applications. Featuring the most sophisticated print gap control and zero-assist dual-size wafer processing capability, the system fully addresses high-volume manufacturing (HVM) needs. It provides a 2X increase in throughput and a 2X improvement in alignment accuracy over EVG's previous-generation IQ Aligner system, giving it the highest throughput of all mask aligners. The IQ Aligner NT surpasses the most demanding requirements for back-end lithography applications while providing up to 30 percent lower cost of ownership compared to competing systems growing out of the highest throughput supported on mask alignment tools. With advanced wafer alignment run-out control, full-field mask movement capability and high-power UV light source, it is ideally suited for wafer bumping and interposer patterning, thereby serving a variety of advanced packaging types, including wafer-level chip scale packaging (WLCSP), fan-out wafer-level packaging (FOWLP), 3D-IC/through-silicon via (TSV), 2.5D interposers, and flip chip.

Technical Data	
Wafer diameter (substrate size)	up to 300 mm
Industrial automation features	Cassette / SMIF / FOUP / SECS/GEM / thin, bowed, warped, edge wafer handling
Alignment modes	- Top side alignment: $\leq \pm 250$ nm - Bottom side alignment: $\leq \pm 500$ nm - IR alignment: $\leq \pm 2,0$ μ m (substrate material depending)
Throughput	throughput first print: 200 wafers per hour throughput aligned: 160 wafers per hour

Contact

EV Group Europe & Asia/Pacific GmbH
 DI Erich Thallner Strasse 1
 4782 St. Florian am Inn
 Austria
 +43 7712 5311 0

Contact@EVGroup.com



Features

- Zero assist bridge tool - dual substrate concept supporting flexibility of production for 200 mm and 300 mm
- Broadband intensity > 120 mW/cm² (300 mm wafer)
- Full Clearfield Mask Movement (FCMM) for flexible pattern positioning and compatibility for darkfield mask alignment
- Contact-free in-situ mask-to-wafer proximity gap verification
- Excellent run-out compensation thanks to ultra-flat and fast response temperature-controlled wafer chuck
- Manual substrate loading capability
- Rework sorting wafer management and flexible cassette system
- Remote tech support and GEM300 compatibility
- Smart process control and data analysis features
 - Integrated analysis features for process and machine control
 - Equipment and process performance tracking feature
 - Parallel/queueing task processing feature
 - Smart handling features
 - Occurrence and alarm analysis
 - smart maintenance management and tracking features

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