



HERCULES®

Lithography Track System



Introduction

The HERCULES® is a high-volume platform integrating the entire lithography process flow in one system, reducing process footprint and operator support.

Based on a modular platform, the HERCULES combines EVG's established optical mask alignment technology with integrated wafer cleaning, resist coating, baking and resist development modules. The HERCULES enables cassette-to-cassette processing of various wafer sizes. The HERCULES safely handles thick, highly bowed, rectangular, small-diameter wafers or even device trays. Precision top-side and bottom-side alignment as well as coating of sub-micron to ultra-thick (up to 300 microns) resists can be applied for interlayer and passivation applications. The superior alignment stage design achieves highly accurate alignment and exposure results at high throughput.

Technical Data	
Alignment modes	- Top side alignment: $\leq \pm 0,5 \mu\text{m}$ - Bottom side alignment: $\leq \pm 1,0 \mu\text{m}$ - IR alignment: $\leq \pm 2,0 \mu\text{m}$ / substrate material depending
Advanced alignment features	- Manual alignment - Automatic alignment - Dynamic alignment - Alignment offset correction - Automatic cross correction / manual cross correction - Large gap alignment
Industrial automation features	Cassette / SMIF / FOUP / SECS/GEM / thin, bowed, warped, edge wafer handling
Exposure source	Mercury light source / UV LED light source
Exposure setup	Vacuum contact / hard contact / soft contact / proximity mode / flex mode

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Features

- Production platform combines all advantages of EVG's precision alignment and resist processing systems in a minimized footprint
- Versatile platform supports fully automated processing of various substrate shapes, sizes, highly warped mold wafers and even trays
- Coating of up to 52,000 cP enables manufacturing of ultra-thick resist features of up to 300 microns in height
- CoverSpin™ rotating cover for low resist consumption and optimized resist coating uniformity
- OmniSpray® coating for optimized coating of high topography surfaces
- NanoSpray® for coating and protection of via structures
- Automated mask handling and storage
- Optical edge exposure and/or solvent cleaning for edge bead removal
- Fragile, thin or warped wafer handling of multiple wafer sizes with bridge-tool system
- Rework sorting wafer management and flexible cassette system
- Multi-user concept (unlimited number of user accounts and recipes, assignable access rights, different user interface languages)

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