

OS2000 Specifications

Basic Machine Performance Specifications

Resolution

1.25 μ m lines and spaces, UV-4 (340-440nm)

1.0 μ m lines and spaces, UV-3 (300-350nm)

Machine to Machine overlay

\pm 0.25 μ m, 125/100mm systems, 98% of data

\pm 0.30 μ m, 150mm systems, 98% of data

Machine to Itself overlay

\pm 0.25 μ m, 98% of data

Throughput

120 wafers per hour, 125/100mm systems

100 wafers per hour, 150mm systems

Depth of Focus

\pm 6 μ m for 1.5 μ m lines and spaces

Focus Stability

\pm 2.0 μ m over 6 days

Focus Range

\pm 200 μ m

\pm 450 μ m w/ extended bellows chuck¹

Partial Coherence

Variable, 0.37 to 0.86

Numerical Aperture

.167

Uniformity of Illumination

\pm 3.0%

Particulate Generation

\leq 7 particles per wafer pass (1.0 μ m or larger)

Prealignment and First-Level Placement Accuracy

\pm 15 μ m

Footprint

18.65 sq. ft. (1.732 sq. M)

Wafer / Substrate Sizes Standard

100mm, 125mm, 150mm (other configurations available on special order)

¹ Only available w/ OS2000

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Electrical Requirements

120V/10A, 240V/5A – Computer, Display Unit, Motor Unit

Overall Throughput Yield

Up to 30% increase in production capacity due to:

Operator setup time reduction

- Mask and wafer stage locations of each process are saved. Future downloading of a process places the mask and wafer stage to the Process's pre-determined location that is close to previous alignment.
- Focus starting actuator positions (opcode 121) for each process lot are determined automatically allowing for seamless loading of thin and thick wafers; they are detected automatically and run without interruption.

Processing time reduction

- 99.9% of all your current processes will run automatically without assists (i.e. "manual" jobs will run automatically). This benefit to throughput will vary depending on processes run in your facility.
- Current difficult automatic alignments due to poor target definition run faster and with no interruptions (e.g. 'Phantom line', 'iteration count exceeded').
- Reduction in test wafers due to predetermined mask and wafer stage pre-loading. This allows more stability due to consistent stage spring loading, which reduces alignment, scan mag and skew errors during scanning.
- Faster IA due to Prealigner feedback loop that automatically removes theta error from process jobs by electronically updating and offsetting the prealignment position.

Mis-processing reductions

- Overlay corrections (alignment, mag, skew) are easier, less error prone by using data input fields that allow corrections to be made and viewed along with history.
- Focus starting actuator positions (opcode 121) for each process lot are determined automatically and prevents wafer breakage due to crashing into gauge head.
- Process Download/Run checking to eliminate processing with incorrect Mask.

Uniformity Features

- Lamp hour monitor that is reset during a lamp change.
- Automatic uniformity arm positioning to high and low slit positions for ease of adjustments
- Full graphic display of uniformity around the slit image
- Aperture default is configurable to place proper aperture in place
- All critical information displayed on one screen
- Hold flag position is settable through software (i.e. no more hard-to-access adjustments through the back of the machine)

Mask Load Features

- Vacuum failure allows a Retry operation avoiding the need to unload the Mask.