

AZORES

MODEL
9200



high-resolution flat panel display
photolithography



photolithography

STEPPER TECHNOLOGY

MODEL
9200

Meeting the Challenge of Mobile Display Applications

The Model 9200 PanelPrinter™ addresses the demanding requirements of the mobile display industry. Based on proven Azores stepper technology, the 9200 combines optimized performance capabilities with superior cost-of-ownership in a Gen 4.5 configuration. The system features a resolution of 1.5 μm with a 200 mm lens for a large lens field and a depth of focus of more than 9 μm. When combined with the system's high-speed frictionless motion, throughput is improved by as much as 80% over competing technologies. The 9200 also features a small footprint and low-cost reticles for an affordable manufacturing process.

A high performance projection lens enables high-resolution imaging at 1.5 μm under actual manufacturing conditions. A high power lamp provides an increased illumination intensity. Both image field stitching error and total overlay accuracy are ≤ 0.3 μm.

● **High-Fidelity Projection Lens and Illumination System.** Features corrected optics with real-time auto-focus measurement and compensation.

● **Automated Reticle Handling and Storage System.** Up to 60 masks can be stored on the system, with automatic loading of up to 6 masks per layer.

● **Automated Substrate Alignment System.** An off-axis alignment system captures alignment fiducials for global and enhanced global alignment.

● **Precision X-Y Stage.** A novel motion provides the industry's smallest footprint. A laser-interferometer controlled stage is integrated with a metrology package for precise system calibration.

● **Metrology Sensors.** A sophisticated suite of metrology sensors calibrates and optimizes system performance, including: lens distortion optimization, lens focus, illumination uniformity, and alignment baseline relative to the center of the lens.

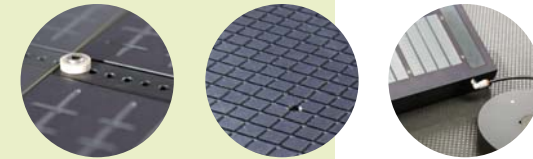
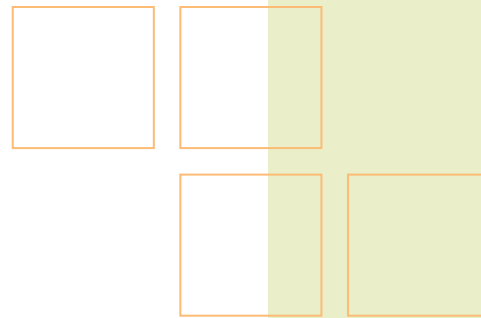
● **In-Focus Aperture Blades.** Relay optics enable the aperture blade plane and reticle plane to be in focus simultaneously. This minimizes the amount of penumbral blur of the aperture blade, allowing for denser geometries.

Mix and Match

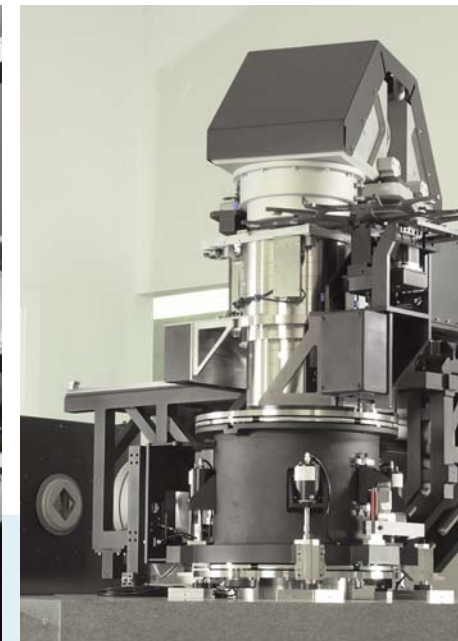
The integration of metrology with precision positioning subsystem technologies, combined with low distortion lens and optional software utilities, means that Azores steppers can be inserted into a production line in a "mix and match" setup with other lithography systems. The Azores system can then be used to image critical layers on substrates, while ensuring grid registration and alignment with other stepper systems that are imaging resists for less critical layers in the same process line. The result for the customer is a significant savings in both capital and operating costs.



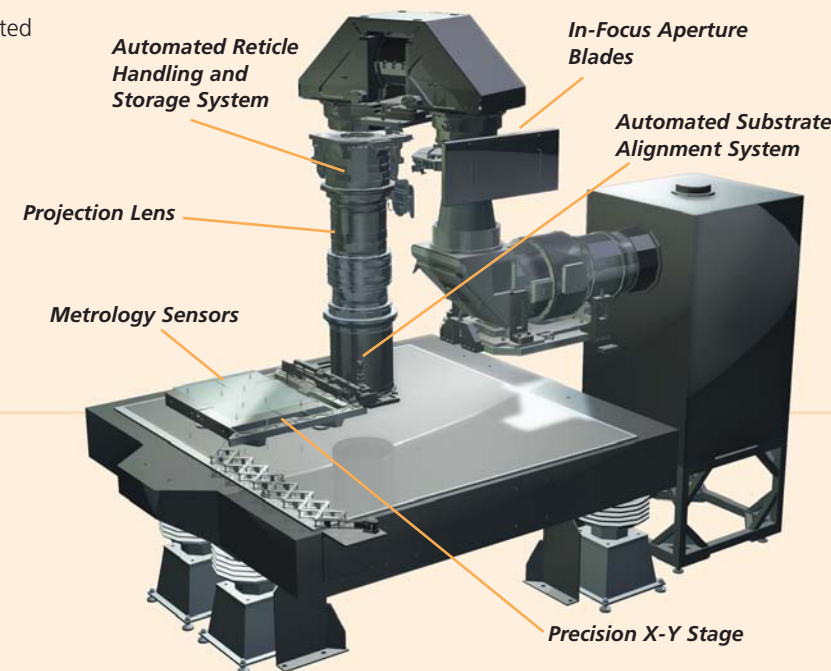
Metrology sensors



Reticle wheel



High fidelity projection lens



MODEL 9200 | Specifications

System Configuration

| | | |
|------------------------------------|---|-------------------------|
| Substrate | Up to Gen 4.5 | |
| Stage Accuracy | High Velocity Laser Interferometer | |
| Alignment | Bright Field Cross-Based | |
| Lens Type | 20015i | 20009i |
| Reduction Ratio | 1.25x | 1.25x |
| Image Field Diameter | 200 mm | 200 mm |
| Maximum Square Image Format | 141.4 x 141.4 mm | 141.4 x 141.4 mm |
| Depth of Focus (DOF) | 9 μm | 15 μm |
| Minimum Feature | 1.5 μm L/S | 2.5 μm L/S |



IMPORTANT FEATURES

- **Fast Focus Speed.** Steppers employ real-time auto-focus measurement and compensation for focusing at each exposure site, ensuring CD control across the lens field. Instead of moving the platform, the lens system is moved using fast, precise voice coil technology. Focus compensation is completed in < 0.1 seconds, within the X, Y stage settle time for each step, so there is no adverse impact on throughput.
- **Automatic Magnification Adjustment.** Lenses provide ± 30 ppm real-time magnification adjustment; therefore, every substrate is compensated according to the alignment results, ensuring precise alignment.
- **Fast Reticle Exchange.** Reticle wheel ensures fast and accurate reticle exchange. Handler features one-axis rotation instead of the normal three-axis movement, resulting in less exchange time.

- **Reticle Chuck.** Azores steppers feature a patented "six degrees of freedom" chuck, which enables the highest possible accuracy in layer-to-layer registration and image field stitching.
- **Auto Calibration.** Calibration procedures for lens, reticle, and platform are accomplished automatically and in a sequential process in as few as five minutes. Avoids exposure of test substrates for calibration prior to production.
- **Other Features:**
 - N-point alignment capability for critical process layers
 - Communication protocol interfaces available for integrating OEM handlers
 - Anti-reflective coating stage and improved chuck flatness
 - Advanced system diagnostics that may be accessed remotely by Azores technicians for service, support, and maintenance

ABOUT AZORES

About Azores

With more than 35 years of combined experience, Azores delivers high-quality products and services to an expanding global base of customers. Azores Corp was incorporated in March of 1999 by former employees of MRS Technology, Inc. Now Azores Corp is a leading global supplier of precision photolithography equipment for semiconductor and other growth industries. Azores is located in a 40,000 square-foot corporate headquarters in Wilmington, Massachusetts, USA, and provides local sales and customer support throughout Asia, Europe, and The Americas. The company's headquarters features a two-story facility

specifically designed for manufacturing photolithographic steppers, with 15-foot high ceilings and 10,000 square feet of Class 1000 clean room, as well as customer support and training.



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