

IX-3000

Automated Reel-to-reel Laser Processing System



Applications

- ▶ Large Area Patterning
- ▶ Microvia Drilling
- ▶ Microelectronics Micromachining
- ▶ Manufacture of Inkjet Nozzle Arrays
- ▶ Flat Panel Displays
- ▶ Wafer Scale Processing
- ▶ Sensors
- ▶ Microfluidics



Features

- ▶ Imaging, Galvanometer or Fixed Beam/ Cutting Optical Configurations
- ▶ Patented Coordinated Opposing Motion (COMO) Processing Capability (Optional)
- ▶ Integration with UV, Fiber Delivery or Free Space Laser Sources
- ▶ Precision Air-bearing Part Handling and Mask Handling for High Accuracy Processing over Large Areas
- ▶ Tape and Reel Material Handling
- ▶ Full Automation Integration for Unattended Operation



IPG Microsystems' IX-3000 is a Class 1 reel-to-reel laser processing system optimized for high volume manufacturing. Processes supported include micromachining, drilling, cutting and laser patterning of a wide range of materials. In an imaging configuration, an optional mask handling stage can be equipped with COMO process capability for processing large high resolution areas with economical optics. The IX-3000 is built on a granite-based structure with vibration and thermal damping for optimum stability. The entire system is optimized for high-speed operation. The IX-3000 offers a lower cost of ownership and operation than competitive laser processing systems. Each system is customized including laser type, optical configuration, mask area, mask dynamics and step-and-repeat stages. The IX-3000 can also be customized for applications with cassette-to-cassette wafer handling or robotics loading.

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System Characteristics

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| Frame and Enclosure | Fully enclosed Class I laser system, heavy duty weldment frame integrates beam delivery system and control electronics into a single 2.5 m x 3.25 m footprint with an internally mounted laser, up to 6.29 m x 3.25 m externally mounted laser high pulse energy UV laser configurations (included in footprint) |
| Available Wavelengths, nm | High Pulse Energy UV Lasers: 193, 248, 308 or 351; Fiber Lasers: 355, 532, 1070 or 1550 |
| Beam Delivery System for Scribing | All Granite Beam Delivery Support Structure Vibration isolating mounting platform for part handling stages and beam delivery optics; Stiffness and large thermal mass of granite structure prevent changes in beam delivery system alignment over time; Pneumatic, 2 position Laser Beam Stop; Precision optic mounts for stability and ease of adjustment; Select grade UV optics; available Components include Variable Attenuator, Mask Changers, Rectangular Variable Apertures- manual or motorized, Scanning Stages, Homogenizers |

System Specifications

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| Motion Control Electronics | Up to 12-axes of Servo or Step Motor Control, Integrates into a Single Interface for all Motorized Components as well as the Laser Fire Mechanism |
| Air-bearing X-Y Part Positioning Stage | Linear Glass Scale Encoders; Linear Motor Servo Drive System |
| X-Y Stage Specifications | Travel: 250 mm (X) x 200 mm (Y) Processing Area (Note: Y-axis travel may be limited for certain material handling applications) Optional Stages: 400 mm x 400 mm Travel Resolution: 0.1 μ m Accuracy: ± 3 μ m over 150 mm travel Repeatability: <1 μ m (bidirectional) |
| Air-bearing Mask Changer X-Y Positioning Stage | Travel: 150 mm (X) x 150 mm (Y) Processing Area; Larger travel stages available upon request. Includes Manual (motorized, optional) Rotational Adjuster, Mask Cassette and Mask Alignment CCD Camera |
| Video Microscope System | MicroTech Camera Assembly OXC Camera for On-target Process Viewing High Magnification Inspection Camera Optional Film Edge Detection Cameras, Optional Mask Alignment Camera |
| Optional Equipment** | Database Connectivity Software; Dual Beam Profilometry Debris Management System Nitrogen Purging of Tape and Reel Module and Humidity Monitoring Systems ** Please discuss with your sales representative for more details |

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