The IX-6655 is optimized for high repetition rate Laser Lift-Off (LLO) process that is independent of die size, with additional capability for multi-purpose UV laser micromachining. The system combines a Class-1 workstation with an externally mounted laser, select grade homogenizer optics to provide uniform beam size adjustable to 500 x 500µm, dual beam profilometry, pulse-to-pulse energy monitor with data logging and wafer map.

The IX-6655 is optimized for demanding 24/7 high volume production applications. Featuring optional automation with cassette load/unload ports, robotics, wafer pre-aligner, and machine vision the system is capable of multiple wafer sizes up to 200mm. The laser system provides high throughput with the lowest Cost Of Ownership (COO) resulting from extended lifetimes and cleaning intervals.
The IX-6655 LLO Workstation

System Architecture:
- All granite beam delivery and stage support structure for vibration isolation
- Front door with laser-safe viewing window
- Single system control software with ergo-arm mounted user interface
- Externally mounted laser for easy access.

Laser Type:
- Externally Mounted MicroX Laser
- Available in 193nm or 248nm configurations
- Pulse rate from 1 Hz to 1,000 Hz
- Pulse length typically 10 ns
- Footprint with MicroX Laser 1.7m x 2m

Automation Options:
- Fully automated with dual load/unload ports for unattended operation
- Programmable Illumination
- Automated Part Aligner
- IAP with Dual End-Effectors and load/unload ports
- Sapphire Picker for automated removal from the epi wafer

User Interface:
- Fully-integrated laser and system control with single user interface
- Vision system for easy and automated part alignment and process inspection
- IPG project management software and intuitive macro building utility for fast programming
- DXF and CSV file interface for complex pattern input

Metrology Options:
- Dual Beam Profilometer: Mask and On-Target viewing of beam energy profile for easy alignment
- Pulse-to-Pulse Energy Monitor: Captures real-time data of pulse energy
- On-Targe Power Meter

Cost of Ownership
for MicroX vs. Traditional Excimer laser:
- MicroX tube life time >2x
- MicroX optics life time >3x
- Fewer optics (∼½) cleaning with MicroX
- Gas fills happen every 2.5x pulses with MicroX compared with traditional excimer

IX-6655 Laser Lift-Off System with Externally Mounted MicroX and Chiller

IX-6655 Internal Configuration: BDS, Cameras, Stages Built around Granite Support Structure