FLX 2320-L
Automated Thin Film Stress Analysis System

Automated FLX Standard Features

- Fully Automated / High Throughput Cassette load/ Robotic Wafer Handling Production Tool
- User-programmable Automatic wafer scanning system
- Automatic stage rotation to enable rapid 3D stress measurements
- Patented Dual Wavelength laser scanning for challenging films
- Proprietary WinFLX Analysis Software displays any combination of stress, time, surface deflection, or reflected light intensity measurements
- Software Analysis Features include:
  - Calculation of biaxial modulus of elasticity
  - Linear expansion coefficient
  - Stress uniformity, and file subtraction
  - Trend plotting for Statistical Process Control (SPC)
  - Calculation of water diffusion coefficient in dielectric films
  - Automatic recalculation of stress when variables are changed
  - 2-D and 3-D views of wafer topography (3D software included)
  - Plotting of the measured stress-temperature curve

Specifications	
Accommodation	2 wafer configurations 6″ & 8″ model or 4″ 5″ 6″ model
Material	Reflective, Transparent, Translucent (non-patterned / non textured)
Cassette Port	Single port / SEMI E1.7 standard – 25 slot cassette system
Wafer Handling	Single Hand Robotic backside vacuum (ceramic Teflon coated)
Wafer Alignment	Backside Vacuum (PPS – Polyphenylene sulfide)
Stage 3-point	Polyetheretherketone (PEEK)
HEPA Filtration	Standard built-in to roof of system

Performance	
Stress	1 - 4000 MPa *
Reproducibility	1.3 MPa (1 σ) *
Minimum Radius	2.0m (scan length of 80mm)
Maximum Bow	1mm approximately
Throughput	25 WPH
*(Results for a 10,000 Å film on a 675µm on a silicon substrate)	

Options

- Uninterrupted Power Supply system 60 minutes
- Signal Tower - 3 color with audio alarm
- Built in seismic system
- Bar-code ID Reader: Manual reader for open cassette
- Ionizer / ESD control system
- Wafer Scaler
- ULPA Filter

Safety & Compliance	
Laser	CDRH compliant
Laser system	Interlocks installed
Panel / Doors	Interlocks installed
Clean Spec	Recommended forclass 1000 or better
CE	TBD
Semi S2 S8	TBD
NRTL	TBD
Seismic system:	Optional

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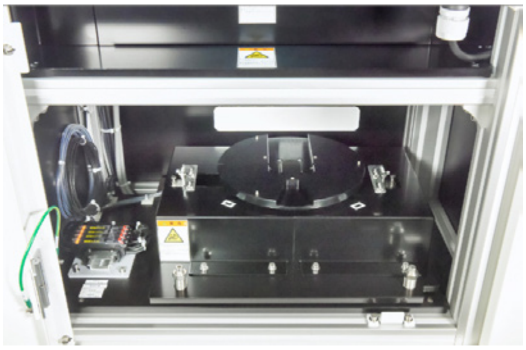
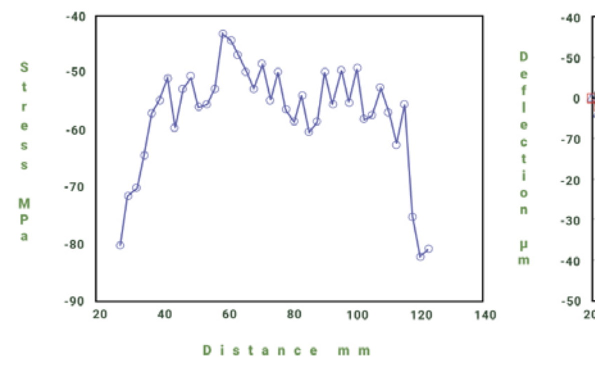
Utilities & Dimensions	
Power	AC 200V, 50/60Hz, 6.7KVA consumption
Gas	CDA 0.5MPa, 50L/min, 1/4 inch Swagelok
Vacuum	-80Kpa, 40L/min, 1/4 inch Swagelok
Dimensions	W 3.9′ x 4.7′ x H 6′
Weight	1763 lbs.
Space Requirements	3′ clearance on all sides

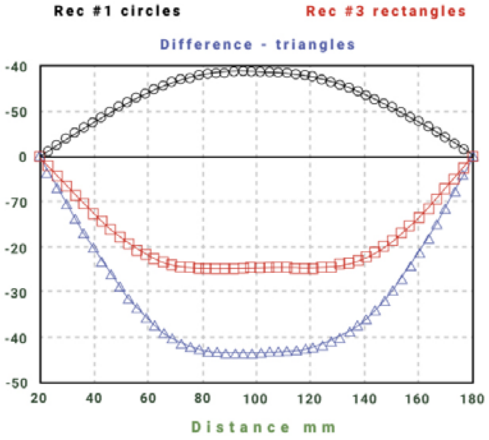


Applications Troubleshooting

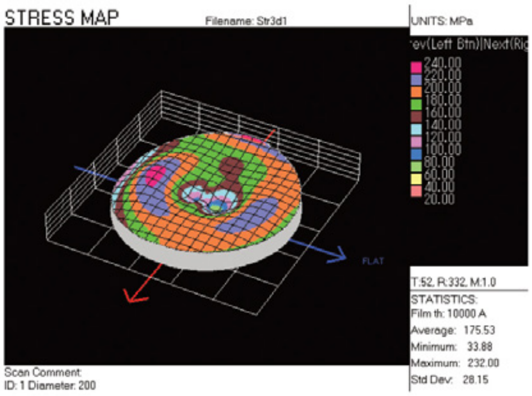
- Aluminum stress-induced voids
- Passivation cracking (nitride/oxide)
- Stress-induced dislocations in silicon
- Tungsten disilicide cracking
- Stress increase in oxides during temperature cycling
- Matching metallization expasion on GaAs
- Silicon cracking due to high film stress



Stress Uniformity Graph



Deflection Graph



T:52. R:332. M:1.0

STATISTICS:
Film th: 10000 A
Average: 175.53
Minimum: 33.88
Maximum: 232.00
Std Dev: 28.15

Scan Comment:
ID: 1 Diameter: 200

3D Stress Map