Chapman Instruments

MPS THE NEW GENERATION TOOL

Fully Automated Non-Contact Surface Profiling System

The MPS is Chapman Instruments' next generation of non-contact surface profiler with primary focus on matching future requirements of the wafer manufacturing industry The system was redesigned for more efficient surface measurements and analysis. The MPS utilizes the same non-contact measurement technology as other Chapman profilers. Additionally, the system is integrated with an edge grip robot for 300 mm wafers or an paddle robot for 200mm wafers .

- Integrated Air Cushion
- Objective Changer
- Edge Grip Robot
- New Chuck Design with Lift Pins
- New Surface Vision Software
- Roll-off Function
- Enhanced Configuration Control
- Flipper for Automated Backside Measurements

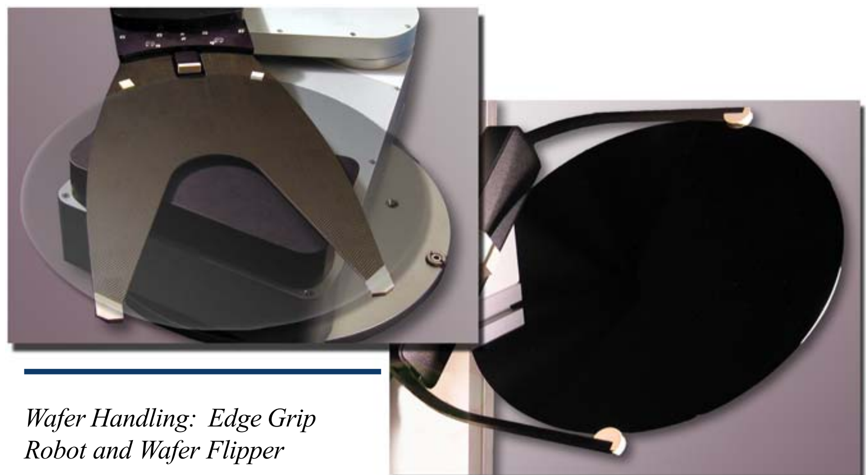
The MPS can be used as both a production tool for in-line quality inspection, as well as a research and development tool for establishing standards and researching tolerances. Users can make either high-resolution linear or circular scans quickly. The powerful, yet user-friendly, Windows XP ® based operational software offers user friendly scan recipes and off-line analysis application. Password security and event viewer/ error logging are standard with Chapman software.

Key Features:

- Non-contact measurements at any location
- Two million data points in a single scan (front/back side, front/back bevel apex)
- 360 degrees circular measurements any surface including edge
- Capability for polished and/or roughed wafers both planar and edge
- Automated Objective Changer
- Integrated Air Cushion
- Unique automated edge measurements
- 3D Topography Scanning

Benefits:

- Cost-effective
- Significantly higher data quality
- Increased process data
- Higher productivity
- Hand-off operation
- No vibration impact on measurements
- Increase yield



Wafer Handling: Edge Grip Robot and Wafer Flipper

System Features
200 and 300 mm capability
Measurement at any location on wafer surface and edge
Complete 360º circular scan on wafer surface
Automated bevel or across edge scanning
Automated Roll-off scanning
Automated notch or flat finder
Automated event logging and viewing
Automated scanning on wafer surface or any edge location
3D Topography Scanning
Integrated CCD Nomarski viewing system
Fine feature capability of 0.5µm to wider waviness with long scans
Chuck with lift pins
Edge grip robot - 300mm only
Autofocus/Autotracking
Programmable wafer stage 5 angels
Integrated Air Cushion for Vibration
Macro and template editor
Programmable sample positioning
Password security
CE Certified
S2 & S8 ready

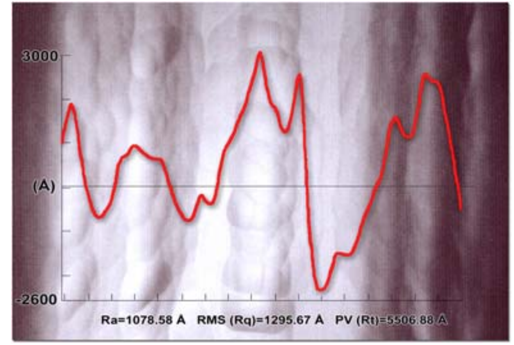
Performance Specifications

Vertical resolution:	0.01 nm
Horizontal resolution:	0.5 µm
Linear scan length:	Up to 100 mm
Circular scan Length:	Complete circumference of wafer
X and Y stage resolution:	1 µm
Theta stage resolution:	0.001 degree
Fine data sampling	50 nm (minimum)

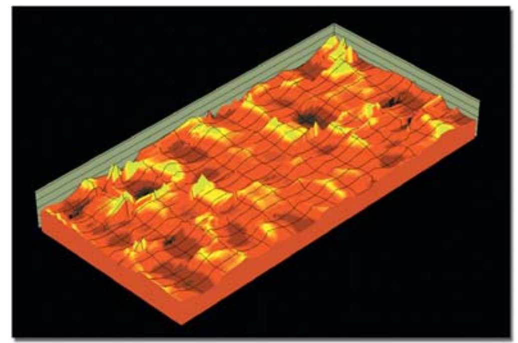
Options
Nomarski Viewing system printer
Color printer
NIST roughness standard
Robotic handler (200 or 300mm wafer)

Software

Roughness parameters:	Ra, Rq, Rp, Rv, Rpm, Rvm, Rt, Rz, Rsk, Rku, and more
Waviness parameters:	Wa, Wq, Wp, Wv, Wt
Other parameters:	Histogram, cumulative distribution, Power spectrum, slope, etc.
Programmable cutoff filter:	Conforms to SEMI, ANSI B46.1 and ISO standards



Edge Imgage and Measurement inside the Wafer Notch.



A 3D Scan of an acid-etched wafer backside (X Y=200 µm x 100 µm, Ra=0.3030 µm

Single-Keystroke Operation with the use of programmable function keys

Chapman Instruments

3 Townline Circle,
Rochester, NY 14623
U.S.A.
585-424-1380–Phone
585-424-2142–Fax
www.chapinst.com
sales@chapinst.com
support@chapinst.com