



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 wafer surface measurements and analysis.

The MPS utilizes the same non-contact measurement technology as other Chapman profilers. In addition the system strives for significant new features like an edge grip robot for 300 mm wafers or a paddle robot for 200mm wafers.



- Integrated Air Cushion
- Objective Changer
- Edge Grip Robot
- New Chuck Design with Lift Pins
- New SurfaceVision Software
- Roll-off Function
- Enhanced Configuration Control
- High Resolution Encoder

It 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® based operational software offers high flexibility to programmed series of routines 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
- 2 million data points in a single linear scan (front/back side, front/back bevel apex)
- 360 degrees circular measurements on 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

Benefits

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

System Features

- 200 and 300 mm capability
- Measurement at any location on wafer surface and edge
- Complete 360° circular scan on wafer surface
- Automated bevel or across edge scanning
- Automated notch or flat finder
- Automated event logging and viewing
- Automated scanning on wafer surface or any edge location
- 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
- Macro and template editor
- Programmable sample positioning
- Vibration isolation table workstation
- Password security
- CE Certified
- S2 & S8 ready

Performance Specifications

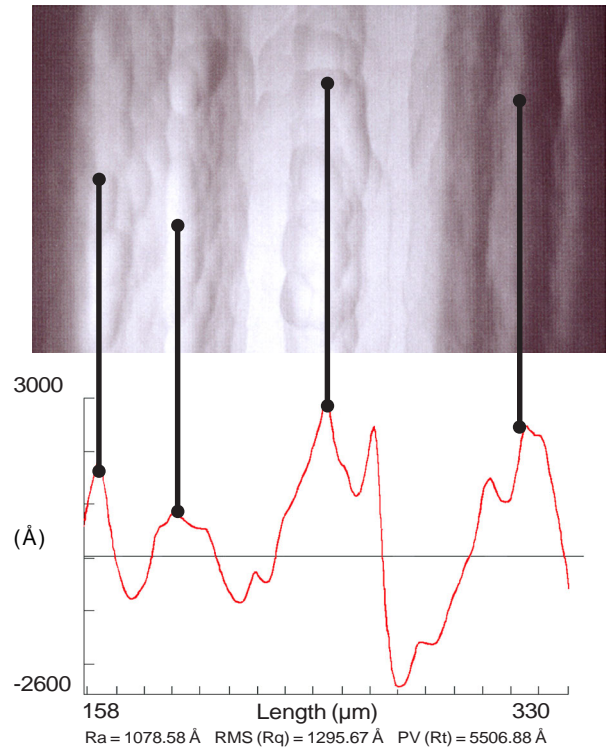
Vertical resolution:	0.01 nm
Horizontal resolution:	0.5 µm
Linear scan length:	Up to 100 mm
Circular scan Length:	Complete circumference of wafer
X and Y stage resolution:	1 µm
Theta stage resolution:	0.001 degree
Fine data sampling	50 nm (minimum)

Options

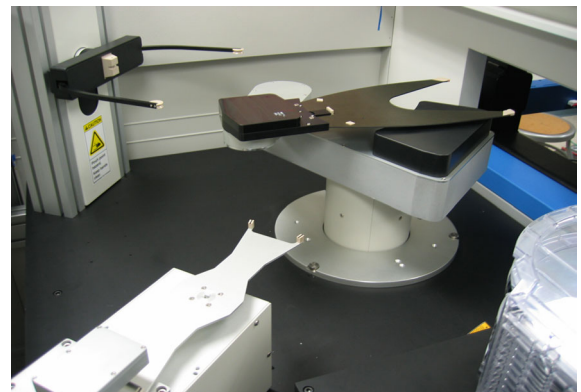
- Nomarski Viewing system printer
- Color printer
- NIST roughness standard
- Robotic handler (200 or 300mm wafer)

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 image and measurement inside the wafer notch



Cassette-to-cassette robotic handling provides completely automated measurement