

Wafer Thickness

MPT1000 Non-Contact Thickness Measurement System

The Complete Solution for Advanced Wafer Metrology

The Chapman MPT1000 utilizes a sophisticated dual non-contact measurement technology to measure such wafer geometry parameters as thickness, shape and flatness. The system is available in a fully automated, and semi-automated configuration. When equipped with the optional edge chip and crack module and the surface roughness module, the MPT1000 is the most complete solution for advanced wafer metrology.



Measurements

- Wafer Thickness
- Total Thickness Variation (TTV)
- Bow
- Warp
- Tape Thickness
- Surface Roughness (Optional)
- Edge Chip and Edge Crack (Optional)

Wafer Specifications

- Wafer Size 50mm-300mm
- Wafer Material Si, Ge, InP, GaAs, Glass
- Wafer Type Bare wafer, Pattern wafer, Bump wafer
- Wafer Mounting Film frame & Bare wafer
- Flat/Notch All SEMI standard
- Conductivity P or N type

System Specification

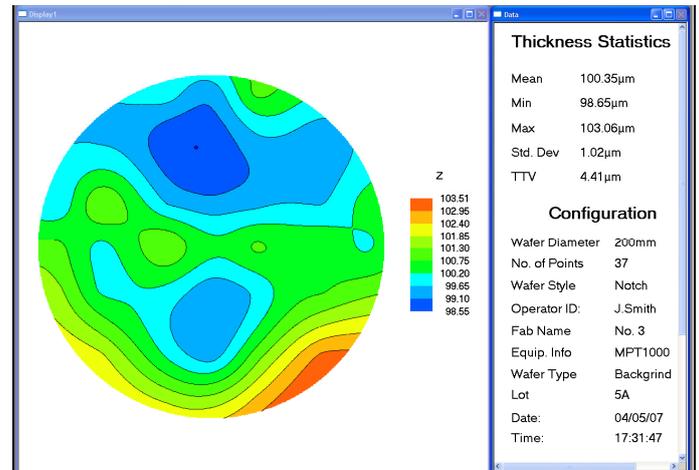
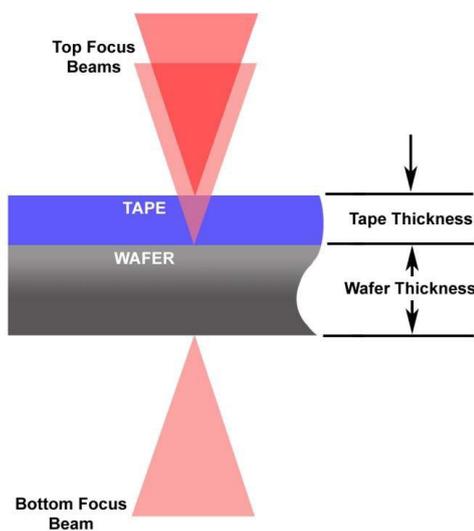
- Sensor Dual Confocal
- Accuracy² 0.15 μ m
- Repeatability^{1,3} 0.10 μ m
- Resolution 0.10 μ m
- Thickness Range 10 μ m-12mm
- Safety SEMI S2/S8
- Laser System CDRH Class 1



1 - Bare wafer 100 μ m 2 - Utilizing a NIST traceable device 3 - 1 sigma for 10 wafer runs

All technical specifications are subject to change without notification. In the event of a conflict, specification contained in the Chapman Instruments Technical Specification document will supersede those contained herein.

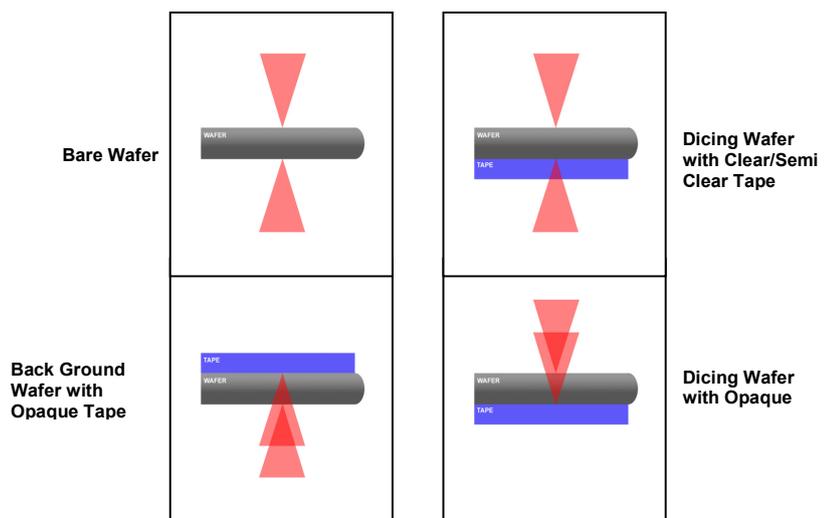
Chapman Instruments non-contact measurement system utilizes two focused laser beams, on the top and the bottom of the sample. The focus position of each beam is measured independently by using a confocal optical principle and an accurate positional response system. Both wafer surface and tape, or other material structures can be measured from the focused beam position at each surface interface.



The diagram on the left demonstrates the measurement system principal. The figure displays two beams, one focused on the top and the other on the bottom of the sample. The top beam is shown at two positions, one on the top of the tape and the other at the top of the wafer surface. The measurement is made by moving the focus position from the top of the tape to top of the wafer.

The dual optical measurement system provides accurate wafer thickness measurements independent of material properties, especially useful for patterned wafers, bumped wafers, GaAs and other wafer types, after back grinding and dicing.

The patented dual laser configuration allows the system to measure any wafer configuration - bare, patterned or bumped - or wafer on tape (film frame) configuration - clear or opaque tape.



For more info, visit www.qesnet.com or email us at vmx-marketing@qesnet.com