MicroSense

MicroSense UMA-200-WL

Automated Thickness and Shape Metrology System

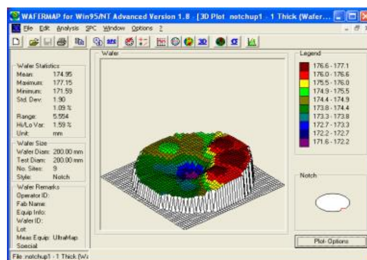
MicroSense UMA-200-WL measurement systems provides precise wafer measurements using chromatic confocal optical sensors.

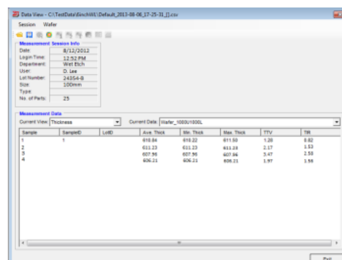
MicroSense white light systems measure a wide range of wafer materials including Si, SiC, Sapphire, GaS, GaN, Glass, Quartz and many other transparent and non transparent substrates.

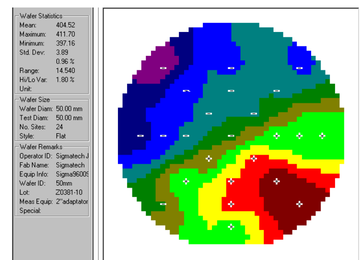
MicroSense White Light systems are available in both a low cost bench top system as well as a fully automated sorting configuration with up to six cassettes.

OverView

- Non-contact dual probe wafer measurement system.
- Dual White Light Chromatic Confocal Probes.
- Dual probe system with White Light Chromatic coding.
- Measures bare and patterned wafers, polished, non-polished, transparent and non-transparent.
- Automated X-Y air bearing stage with X-Y encoders and a wide range of available wafer adapters.
- Thickness measurement range for wafers 10µm – 3mm.
- Store hundreds of recipes for each wafer size. User-generated measurement patterns.
- Results available in table format or wafer mapping software for 2D and 3D display.
- Vibration resistant granite block measurement base.
- Integrated Prealigner for 4” through 8”.
- Simple, menu driven Windows W7 user interface.
- Standard operating software package for Thickness, TTV, LTV, TIR, Sori, Taper, Bow and Warp, and a host of Semi-defined parameters.







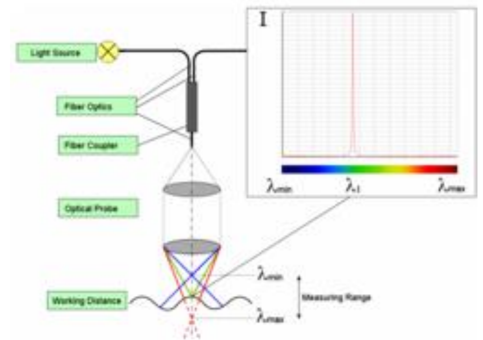
UMA-200-WL

Measurement Parameters	Accuracy[1]	Repeatability[2] One Sigma	Resolution
Thickness: Flat Wafers (<500um Bow)			
Thickness: Center, Minimum, Maximum, Average	0.5µm	+/- 0.15 µm	0.1µm
Thickness: Bow > 500um and < 1000um			
Thickness: Center, Minimum, Maximum, Average	1.5µm	+/- 0.25 µm	0.1µm
Bow/Warp	1µm + 0.5% range	+/- 1 µm	0.1µm

1 Accuracy to a known standard. Multiple UMS/UMA200-WL metrology systems will match to within the accuracy spec.
2 Repeatability one sigma specification based on wafer load and unload.

Measurement Technology

A white light source is used to illuminate the surface of a part. The light travels via fiber from the control unit to an optical probe which separates the light into different focal distances as a function of wavelength, as shown in the graph. Based on the wavelength of the reflected light, a very precise distance measurement can be taken. The optical probe determines the measuring range. Because of the high numerical aperture of the probes and dynamic range of the sensor, it is possible to measure on a wide range of materials.



Wafer Specifications

Wafer Size:
50mm to 200mm, Custom
Diameter Tolerance:
+0.2mm, -0.5mm
Thickness Range:
10µm - 3000µm
Surfaces: Sawn, Lapped, Polished

System Configuration

Sample Positioning:
Precision Air Bearing
Auto Probe Positioning:
Optional
Pre-aligner: Optional
OCR Reader: Optional
SECS/GEM: Optional

Features

Wafer Handling:
Manual and Robotic
100µm and above
High-Bow up to 5mm
Cassette Stations:
Up to 6
Calibration:
Automated
Reliability (MTBF): 10,000 h

Facilities Requirements

Dimensions: 63” wide (UMA) or 28.5” wide (UMS) + 22” swivel monitor, 34” deep, 65” tall
Weight: 1000lbs – Fully automated system with 2 cassettes
Voltage: 110V for US, 200 – 250V options available single phase grounded polarized outlet required
Frequency: 50/60 Hz
Current: 2A nominal, 10A peak
Circuit Breaker: 10A UL489A certified breaker
Air supply: Clean dry air or Nitrogen 40 – 60 PSI
Fittings: ¼” compression fitting

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