

ELLIPSOMETER



MODEL: Gaertner L116B

INSTALLATION PLACE: Cleanroom of “Nanotechnology and Microsystems Laboratory”, Department of Microelectronics

DESCRIPTION:

The ellipsometer analyzes the effect of reflection on the polarization of light directed upon the surface of materials, to acquire measurement data identifying properties critical to quality control. It is a single wavelength ellipsometer with software for data acquisition and can measure the optical constants and the thickness of a thin film.

SPECIFICATIONS

1. Light Source : Helium-neon, 632.8 nm wavelength laser, less than 1 mw output
2. Beam Diameter : 1mm (1x3mm on sample at 70°)
1mm (1x1.6mm on sample at 50°)
1mm (1x1.2mm on sample at 30°)
3. Incidence Angle : Prealigned (detent) for 30° , 50° , 70°
4. Polarizer/Analyzer Drums : 360° graduated at 1° intervals with 10-part vernier (0.1°)
5. Compensator : +90° fixed orientation
6. Sample Table : Linear / rotary translation
7. Sample Size : Up to 150 mm (6in.) diameter
8. Method of measurement : Dual mode (with and without compensator), polarizer fixed at 45°, rotating analyzer samples 144 data points
9. Photodetector : Solid state
10. Film Thickness : 0 to 6000 nm
11. Accuracy: ±0.3 nm
12. Repeatability: ± 0.1 nm
13. Refractive index accuracy: ±0.005

APPLICATIONS

1. Thickness measurements of thin dielectrics on semiconductor substrates
2. Thickness measurements of thin polymers on substrates
3. Thickness measurements of thin oxides on metals (e.g. Al₂O₃ on Al)

CERTIFICATION/ACCREDITATION

The facility is not certified or accredited.

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