



Hardware:

SpecEL-2000-VIS

Wavelength 450-900 nm, Thickness 1 nm... 8 μ m, Resolution 0,1 nm, Analyzer for refractive index (n) and extinction coefficients (k) as a function of wavelength, Measurement Speed 5-15 seconds, Repeatability 70 nm SiO₂ on Si: 1 Å, User-friendly, simple-to-use 32-bit Windows™ Software SpecEL-V 3.4 and Computer included.

Options:

Mapping 6"-SE

150 x 150mm XY-scanning-stage, fully automatic, 2 Motors with Encoders, Control System integrated 2 -Axis CNC Controller RS-232 Interface

SpecEL-Vision

Video microscope with extra port for NanoCalc-VIS reflection measurement. Magnification 5x, 10x or 20x. Illumination (tungsten-halogen), SMA connector. USB connection to PC, software modul for vision (video picture) in SpecEL software included. Manual fine adjustment axis for height travel included.

SpecEL-Microspot

Microspot Spotsize: 200x400 μ m (option 400 x 800 μ m). This Option is useful in combination with the Option SpecEL-Vision. SpecEL Microspot software modul included.

Reference

Thin Film Thickness Standard, Si-SiO₂-Step-Wafer, 5 Steps 0-500 nm, calibrated

VAC-Chuck 6"

Wafer-Chuck with non-conductive Hardcoat-Surface, Ceramic Pins, Vacuum-Option, Vacuum-Tweezers Entrance

Software:

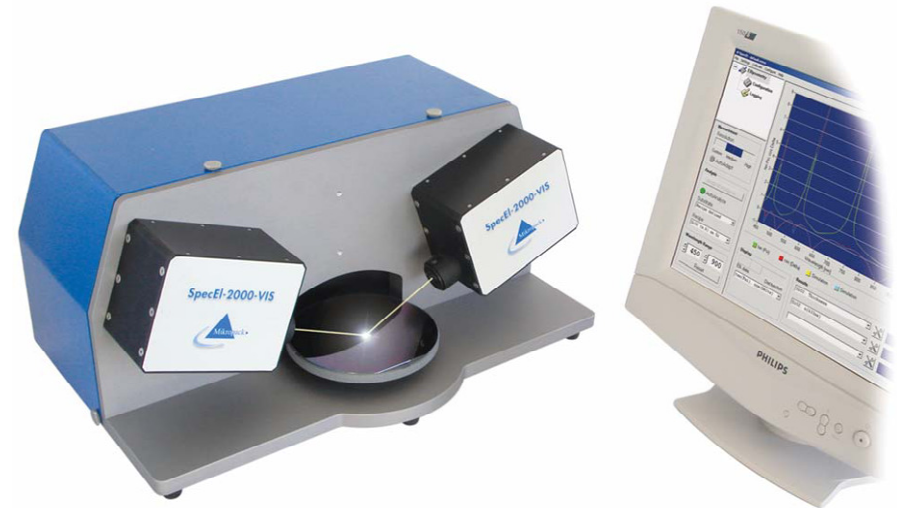
SpecEL-V 3.4

User-friendly, simple-to-use 32-bit Windows™ Software for Ex Situ direct measurement of Thickness and n & k coefficients, recipe structure, administrator/user capabilities.

SpecEL-Mapping

Mapping module software (needs SpecEL Software) Mapping Generator with control-software for Mapping-6"-SE

Spectroscopic Ellipsometer



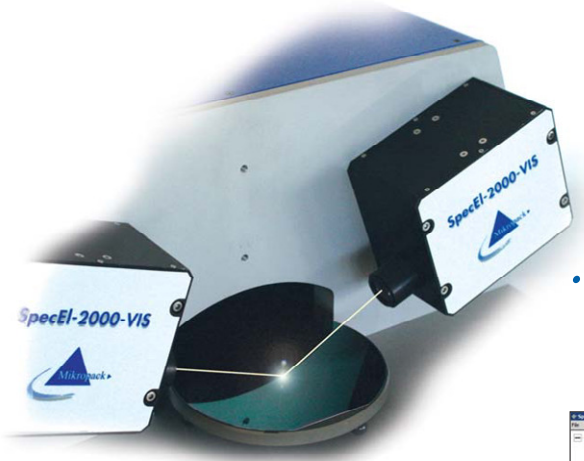
SpecEL-2000-VIS

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Maybachstraße 11
D-73760 Ostfildern (Germany)
Phone +49(0)711/34 16 96-0
Fax +49(0)711/34 16 96-85
e-Mail: ThinFilm@Mikropack.de
Internet: www.mikropack.de

Your local distributor is:

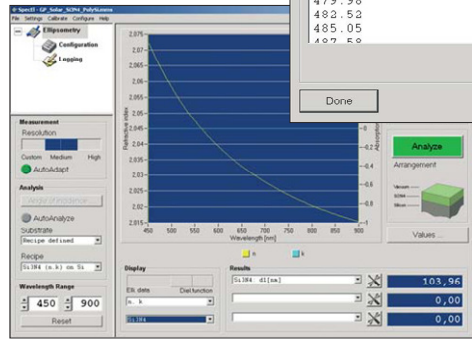
Spectroscopic Ellipsometer

Specifications SpecEI-2000-VIS



• Full spectral range
Kinetic-Logging
every 5 sec

- Recipe-Concept
- Administrator/
User-Mode
- Export Capabilities
for thickness,
fit value, n & k,
psi & delta



Wavelength [nm]	2.07214	0.000000
452.06	2.07214	0.000000
454.60	2.07130	0.000000
457.15	2.07047	0.000000
459.69	2.06965	0.000000
462.23	2.06884	0.000000
464.76	2.06805	0.000000
467.30	2.06727	0.000000
469.84	2.06651	0.000000
472.38	2.06576	0.000000
474.91	2.06501	0.000000
477.45	2.06429	0.000000
479.98	2.06357	0.000000
482.52	2.06286	0.000000
485.05	2.06217	0.000000
487.59	2.06149	0.000000

- Optical Constants
- n, k Measurement
- Direct evaluation
- Different dispersion models
- Online and off line analysis

- Bench-Top
- PC-Controlled
- No adjustments
- Simple-to-use

• Fast and Low cost
One Button Thickness
Measurement
• Non-contact material analysis



Performance

Film Thickness Range: 1 nm – 8 μm
 Thickness Resolution: 0,1nm
 n & k Analyzer: Table 450 – 900 nm in 1nm steps
 Constant refractive index, harmonic oscillator, Cauchy, Sellmeier, Dielectric, Imported dielectric function, KKR Drude, Brendel, Kim, OJL interband transition model, Campi-Coriasso, Tauc-Lorentz, heterogeneous materials (multi-phase composites) effective medium concepts for inhomogeneous materials, Maxwell-Garnett, Bruggeman, Looyenga formula, Bergman representation and more

Measurement Speed: 5-15 seconds
 Repeatability: 70 nm SiO₂ on Si, cos(Delta) ± 0.0003, tan(Psi) ± 0.0002

Optical

Spectral Range: 450-900 nm
 (other ranges on request)
 Spectral Resolution: 4 nm
 Beam Diameter: 2 x 4 mm (Microspot Option 200 x 400 μm)
 Angle: 70° (other angles on request)

Mechanical Tolerance

(for Sample Adjustment)
 Height Adjustment: ± 1,0 mm
 Angle Adjustment: ± 1° tilt

Software:

One Button Thickness Measurement, simple-to-use 32-bit WindowsXP™ Software included, Recipe Structure, administrator/user capabilities IBM compat. PC with WindowsXP™ operating system included

Options:

Mapping: Range: 6", 150 x 150mm
 Accuracy: ± 10 μm
 Type: Fully automatic, 2 motors, encoder
 Control: Integrated 2 – Axis Controller
 Interface: RS-232

Vision-Option: Video microscope with different magnifications

VAC-Chuck 6": Wafer-Chuck for 6" with non-conductive Hardcoat-Surface, Ceramic Pins, Vacuum-Entrance

300 mm Options: Are available on request