SE 500adv

CER Laser Ellipsometer

- Unambiguous thickness determination
- Largest measurement range
- It has never been easier to apply ellipsometry to real-world samples

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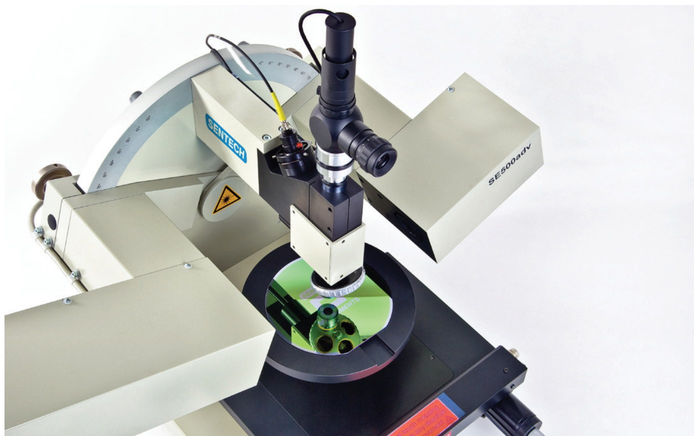


Laser ellipsometer combined with reflectometer

SE 500adv
CER Laser Ellipsometer

- **Combines ellipsometry and reflectometry**
- **Eliminates the ambiguity in layer thickness determination for transparent films**
- **Extends thickness measurement to 25 µm**
- **It has never been easier to apply ellipsometry to real-world samples**

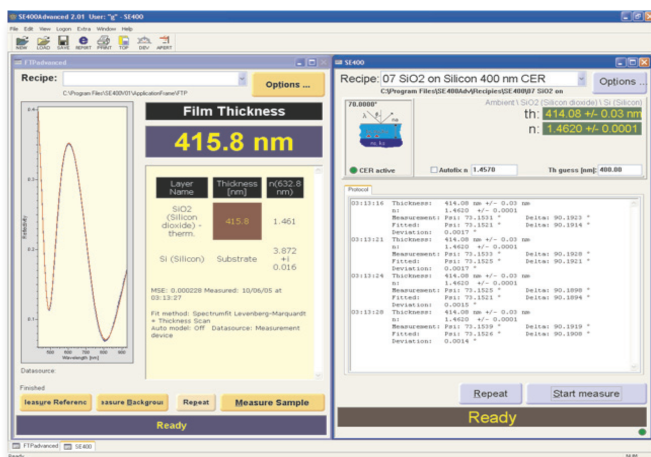
Product description

The **SE 500adv** combines ellipsometry and reflectometry to eliminate the ambiguity of measuring layer thickness of transparent films. It extends the measureable thickness to 25 µm. Therefore, the **SE 500adv** extends the capability of standard laser ellipsometer **SE 400adv** especially for analyzing thicker films of dielectrics, organic materials, photoresists, silicon, and polysilicon.

The **SE 500adv** can be operated as **laser ellipsometer**, as **film thickness probe**, and as **CER ellipsometer**. Operated as laser ellipsometer, single and multiple angle measurements can be performed. When operated as film thickness probe, the thickness of a transparent or weakly absorbing film is measured under normal incidence. So, the **SE 500adv** offers maximum flexibility never reached by standard laser ellipsometers.

The CER ellipsometer **SE 500adv** comprises the ellipsometer optics, goniometer, combined reflection measurement head and auto-collimating telescope, sample platform, HeNe laser source, laser light detection unit, and photometer.

The options of the **SE 500adv** support applications in micro-electronics, mircosystems technology, display technology, photo-voltaics, chemistry, and others.



Recipe modules of ellipsometer and reflectometer software

Specifications

Precision of Ψ, Δ at 90° (transmission) position:	δ (Ψ) = 0.002° δ (Δ) = 0.002°
Long term stability:	δ (Ψ) = ± 0.01° δ (Δ) = ± 0.1°
Precision of film thickness:	0.1 Å for 100 nm SiO_2 on Si
Precision of refractive index:	5 x 10^{-4} for 100 nm SiO_2 on Si
Laser wavelength:	632.8 nm
Diameter of laser spot:	1 mm
Spectral range of reflectometer:	450 nm to 920 nm
Spot size reflectometer:	80 µm
Sample alignment:	Auto collimating telescope (ACT) for manual sample tilt and height adjustment

Options

- Microspots (25 µm)
- Mapping stages (50 mm to 300 mm)
- Liquid cells
- Video camera
- Autofocus
- Video camera
- Computer controlled goniometer
- Simulation software
- Certified reference wafers

SENTECH Instruments GmbH
Schwarzschildstraße 2
12489 Berlin, Germany
Phone: +49 30 6392 5520
Fax: +49 30 6392 5522
E-Mail: info@sentech.de
www.sentech.de

Sales office
SENTECH Gesellschaft für Sensortechnik mbH
Konrad-Zuse-Bogen 13
82152 Krailling, Germany
Phone: +49 89 897 9607-0
Fax: +49 89 897 9607-22
E-Mail: sales@sentech-sales.de
www.sentech-sales.de

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ALAVA INGENIEROS
www.alavaingenieros.com
alava@alava-ing.es