For routine measurements of thin film thickness and refractive index, the alpha-SE® is a great solution. Designed for ease-of-use: simply mount a sample, choose the model that matches your film, and press measure. You have results within seconds.

**WHY AN ALPHA-SE?**

**EASY-TO-USE**
Push button operation with advanced software that takes care of the work for you.

**POWERFUL**
Proven spectroscopic ellipsometer technology gives you both thickness and index with much higher certainty than other techniques.

**FLEXIBLE**
Work with your materials - dielectrics, semiconductors, organics, and more.

**AFFORDABLE**
The power of spectroscopic ellipsometry at a reasonable price.

**FAST**
Hundreds of wavelengths simultaneously collected in seconds - immediate results.
**APPLICATIONS**

**DIELECTRIC FILMS**

With fast measurement speed and push-button operation, the alpha-SE® is ideal for qualifying thin films. Single-layer dielectrics on silicon or glass substrates can be measured in seconds. Log results for easy-to-use comparisons in both graphical and tabular formats.

![Graph showing SiNx refractive index vs. wavelength](image1)

A series of nitride thin films is quickly compared to study variation in the thickness and refractive index with process condition.

**SELF-ASSEMBLED MONOLAYERS**

Phase information of a spectroscopic ellipsometry measurement is highly sensitive to very thin films (<10nm). Self-assembled monolayers can be assessed and quickly compared using the alpha-SE.

![Graph showing spectroscopic ellipsometric (SE) data](image2)

For organic layers on gold, the phase parameter (Δ) shifts downward with increasing thickness.
**Absorbing Films**

Advanced models allow quick and efficient fits for a wide variety of materials you may encounter.

**Materials**
- a-Si
- poly-Si
- Diamond-like carbon
- Organic materials
- Organic LED films
- SiC

**Models**
- Lorentz
- Gaussian
- Harmonic
- Tauc-Lorentz
- Cody-Lorentz

**Coating on Glass**

Patented technology allows accurate measurements on any substrate: metal, semiconductor, or glass. For transparent substrates, the alpha-SE® measures depolarization to correct for light returning from backside of the substrate. This unwanted light can confuse other ellipsometers, but the alpha-SE insures accurate optical constants.

The high sensitivity of alpha-SE technology provides microstructural details that you can not get from Reflectance measurements. A thin film of Zirconium Oxide is measured with the alpha-SE and its index is found to vary between the substrate and surface. A graded model with rough surface best describes this sample.
Specifications

Spectral Range
380nm to 900nm, 180 wavelengths

Angle of Incidence
65°, 70°, 75° or 90° (straight-through)

System Overview
Patented rotating compensator technology with CCD detection

Data Acquisition Rate
3 sec. (Fast mode)
10 sec. (Standard mode)
30 sec. (High-precision mode)