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Our staff of experienced application and service engineers, located around the world, provides full support for your instrument.

Well equipped application laboratories allow for sample analysis and hands-on training for new and experienced users.



UVISEL Specifications

Ellipsometer Configuration	
Light source	Combination Deuterium 150W & 75W Xenon lamps
Spot size	Manual selection of eight spot sizes. Standard spot size: 2 x 6 mm
Spectral range	147 - 850 nm. NIR extension up to 2100 nm
Photoelastic modulator	CaF ₂ . Modulation frequency: 50 kHz
Double Monochromator	VUV-VIS: PMT detectors, motorized slits in option. NIR: InGaAs detector
Sample stage	150 mm, manual z-height (15 mm), tilt with autocollimator and theta adjustment
Goniometer	Fixed at 70°
Performance	
Accuracy	$d \pm 4 \text{ \AA} - n (632.8 \text{ nm}) \pm 0.002$
Repeatability	$d < 0.25 \text{ \AA} (1\sigma) - n (632.8 \text{ nm}) \pm 0.002 (1\sigma)$

Environment	
Sample chamber	Nitrogen purge time: 30 s. Vacuum pumping time: 120 s
Working pressure	5×10^{-2} mbar
Nitrogen consumption	6 - 8 L/min
Facility Requirements	
Weight	< 350 kg
Operating temperature	15 - 28° C (optimal 22° C \pm 1° C)
Voltage	110/220 VAC, 50/60 Hz
Dimensions (wxdxh)	800 x 2000 x 1400 mm
Operating systems	Windows® XP/7

UVISEL 2 VUV

Spectroscopic Ellipsometer from 147 to 2100 nm

Unmatched speed and reduced operating cost

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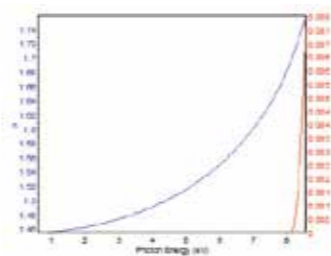
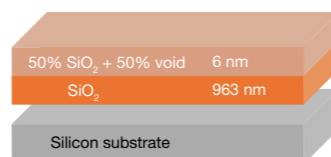
Measure Faster down to 147nm and Reduce your Operating Costs

The UVISEL 2 VUV provides unmatched measurement speed and low operating costs, making it the best ellipsometer for thin film characterization on a wide wavelength range from 147 to 2100nm.



Main Applications

- Lithography
- High k materials
- Optical coatings
- Electronic transitions in semiconducting and dielectric layers
- VUV dielectric functions
- Ultra thin films
- Reflected/transmitted intensity
- Film thickness and optical constants (n,k)



SiO₂ dielectric film is modeled using a Tauc-Lorentz oscillator that describes the VUV absorption of the material and correctly fits data over the full spectral range.



Powerful DeltaPsi 2 Software from Research to Routine

Ellipsometer control, data measurement, simulation, modeling, reporting and automation are seamlessly integrated by the powerful DeltaPsi 2 software platform.



Two Modes of Operation: Under Nitrogen or Primary Vacuum

The UVISEL 2 VUV is a **hybrid ellipsometer**, capable of operating in two modes: under nitrogen or primary vacuum. These conditions are necessary to eliminate the atmospheric absorption of light, due to the presence of oxygen, below 190 nm.



Very Fast Measurement

Sample measurement takes less than **8 minutes** from **147 to 850 nm** with an excellent signal to noise ratio. The UVISEL 2 VUV provides an achromatic optical design along with fast scanning and high resolution monochromators covering a large spectral range from 147 to 2100 nm.



Designed for Fast Sample Loading, Fast Purging and Low Nitrogen Consumption

The sample chamber is readily accessible from the front for convenient sample loading. Designed as an isolated compartment, only the purge of the sample chamber is necessary for loading/unloading operations.

This mechanical design is optimized for low nitrogen consumption down to **6L/min**, and allows fast sample loading and purging, which takes less than **2 minutes**.



Highly Featured

The UVISEL 2 VUV provides high sensitivity at VUV wavelengths. It integrates dual high power energy sources, high throughput optics, a CaF₂ photo-elastic modulator and advanced monochromators for superior stray-light rejection.

It features a manual selection of **8 spot sizes**, which is ideal for small area measurements.



Customized Configuration

The UVISEL 2 VUV can be **customized and automated for production environment**.

The image shows a VUV ellipsometer developed for in-situ characterization of 200 and 300 mm wafers in a ultra-high vacuum chamber. The system is equipped with a fully automated (X,Y,Z,) sample holder for wafer cartography.

It is compatible for automatic loading and transfer of wafers under vacuum atmosphere.

