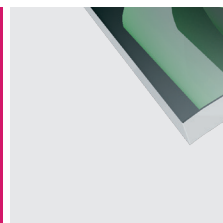
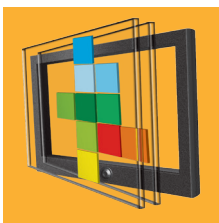
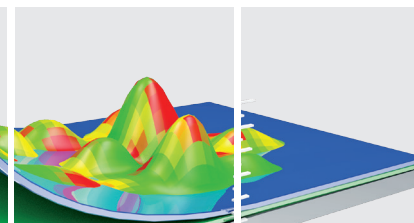
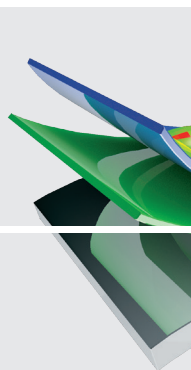
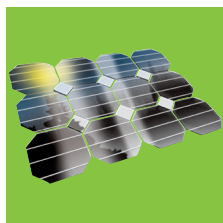
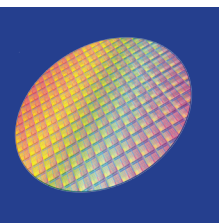


## UVISEL

Spectroscopic Phase Modulated Ellipsometer



The Ideal Tool for Thin Film and  
Material Characterization

# High Precision Research Spectroscopic Ellipsometer

The UVISEL ellipsometer offers the best combination of flexibility and performance for thin film characterization.

## Precision

Built on 25 years of experience, the UVISEL phase modulated ellipsometer delivers **high precision and high resolution measurements**, with the best signal to noise ratio, ideal for research on nano and micro scale structures.

The UVISEL delivers long-term, stable measurements without the need for regular calibration.



## Wide Spectral Range

We offer several UVISEL configurations capable of covering a wide spectral range from **190 - 2100 nm**.

The use of monochromators enables the selection of the spectral range and resolution that best suits your measurement needs.

## Flexibility

The UVISEL ellipsometer offers a **flexible design**, enabling the best fit to your application needs.

- Manual or automatic goniometer, sample stage and microspot optics
- Large variety of accessories
- Ex-situ, in-situ and cost-effective configurations available

## Powerful Software

The DeltaPsi 2 ellipsometry software presents an **intuitive interface for instrument control, measurement and data processing**.

The largest variety of data acquisition and modeling functions gives research engineers the full performance of ellipsometric analysis.

A simple interface allows the operator to perform routine tasks very easily.

## UVISEL Ex-Situ

The **UVISEL Ex-Situ** is available in **four different spectral ranges** from FUV to NIR. A large array of options and accessories offers enhanced performance and versatility.



### Options & Accessories

- Motorized XY stage
- Rotation stage
- Temperature controlled stage
- Automatic goniometer
- Reflectometry module
- Electrochemical cell
- Liquid cell
- Sealed cell

## UVISEL In-Situ

The **UVISEL In-Situ** can be easily mounted onto process chambers (PECVD, MOCVD, sputter, evaporation, ALD, MBE) for **real-time control of thin film deposition or etching processes**. It provides **real-time calculation of film thickness and optical constants**.

Using the adaptation kit, it is possible to easily switch between in-situ and ex-situ configurations and experiment with new applications.

UVISEL mounted on a CVD chamber

## UVISEL LT

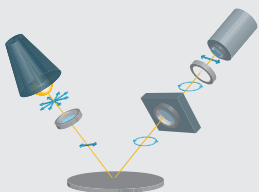
The **UVISEL LT** is a **cost-effective configuration** featuring a compact, integrated goniometer with no compromise on data quality.

The setting of the goniometer angle can be selected to best fit with your applications. The stage can accommodate samples up to 200 mm in size, with substrate thickness up to 17 mm.

## UVISEL In-Line

For the demanding needs of flexible electronic devices, flexible displays and flexible solar panels, the **UVISEL In-Line** is **fully compatible with roll-to-roll processing**.

The use of our patented multiwavelength detection system allows for a very fast acquisition time for superior thin film uniformity control of the moving substrate.



### *The UVISEL Series is Based on Phase Modulation Technology.*

Specific features of this technology are:

- No moving parts during signal acquisition
- High modulation frequency (50 kHz)
- $\Psi$  (0-90) and  $\Delta$  (0-360) angles are measured over their entire range

# Powerful DeltaPsi2 Software from Research to Routine

Our ellipsometers are driven by the powerful and advanced DeltaPsi2 software, designed for accurate and flexible measurement and characterization of thin film structures.

*The DeltaPsi2 software offers complete functionality for measurements, modeling and reporting, in addition to automatic operations, which facilitate routine thin film analysis.*

## Measurement

- Reflection and transmission ellipsometry
- Reflectance and transmittance intensity
- Kinetic ellipsometry
- Variable angle
- Depolarization
- Scatterometry
- Mueller matrix

## Modeling & Simulation

- Large materials library based on reference database and dispersion relations
- Roughness or interface (EMA)
- Alloy composition, crystallinity
- Periodic structure
- Graded optical constants
- Anisotropic structures, uniaxial and biaxial films
- Periodic structure
- Nanoparticle modeling
- Automatic backside correction for transparent substrates
- Bandgap calculations
- (n,k) fitting

## Data Reporting

- Customized reporting
- 2D/3D image display
- Data import/export package

## Automatic Operations

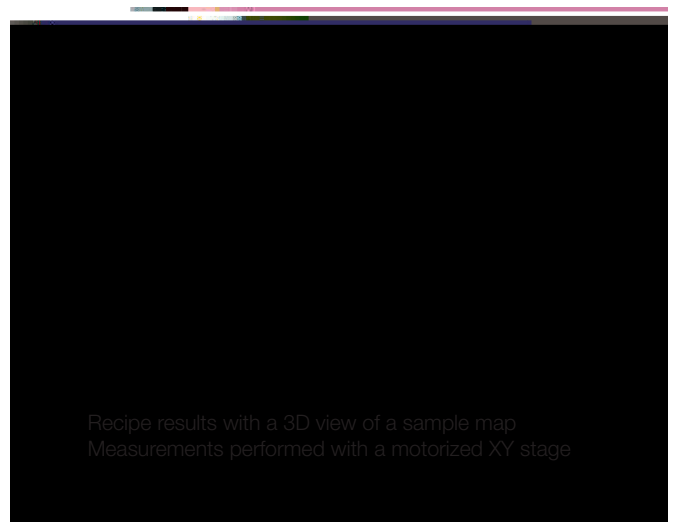
Recipes provide full automation of measurement, analysis, mapping (if selected) and reporting. The recipe contains all of the settings for the sample under analysis and is launched in one click.

- Data reprocessing
- Statistical analysis



Integrated interface for measurement, analysis and reporting with drag and drop operations

Customizable data reporting



# The Power of Ellipsometry

Find out more at [www.horiba.com/ellipsometry](http://www.horiba.com/ellipsometry)

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## Follow Us



## Worldwide Training and Technical Support

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.



HORIBA Worldwide

## UVISEL Specifications

	UVISEL	UVISEL FUV	UVISEL NIR	UVISEL ER	UVISEL LT
<b>Spectral Range</b>	210 - 880 nm	190 - 880 nm	250 - 2100 nm	190 - 2100 nm	210 - 880 nm 250 - 2100 nm
<b>Light Source</b>	75 W Xenon lamp	150 W Xenon lamp	75 W Xenon lamp	150 W Xenon lamp	75 W Xenon lamp
<b>Microspot</b>	<b>Manual microspot:</b> 3 positions: 0.08 - 0.1 - 1 mm <b>Automatic microspot option:</b> 4 positions: 0.08 - 0.12 - 0.25 - 1.2 mm				Spot diameter: 3 mm
<b>Sample Stage</b>	<b>Manual stage:</b> 150 mm, manually adjustable height (20 mm) and tilt <b>Motorized stage option:</b> 200 mm or 300 mm <b>Rotation stage option:</b> 150 mm, high precision automated sample rotation (360°- θ only), resolution: 0.005°				
<b>Goniometer</b>	<b>Manual goniometer:</b> manually adjustable angle from 55° to 90° by step of 5° <b>Motorized goniometer option:</b> automatically adjustable angle from 40° to 90° by step of 0.01°				
<b>Monochromator</b>	High resolution scanning monochromator For FUV-VIS range: High sensitivity photomultiplier detectors For NIR extension: InGaAs detector				