



# MProbe Vis

## Thin Film Measurement System

*It is easy to be an expert with MProbe*

Majority of translucent or lightly absorbing films can be measured quickly and reliably: Oxides, Nitrides, Photoresists, Polymers, Semiconductors (Si, GaAs, aSi, polySi, etc.), Hard coatings (SiC, DLC, AlN), Polymer coatings (Paralene, PMMA, Polyamides), ITO, Cell Gaps, Alumina, thin metal films (<50nm) and many more.

### Specification highlights:

- **Thickness Range: 10 nm - 75 μm**
- **Wavelength Range: 400nm - 1000 nm**
- **Connection: USB2.0 / 1GbE LAN**
- **Data acquisition rate: up to 1.5kHz**
- **Minimum measurement time: 10 μs**

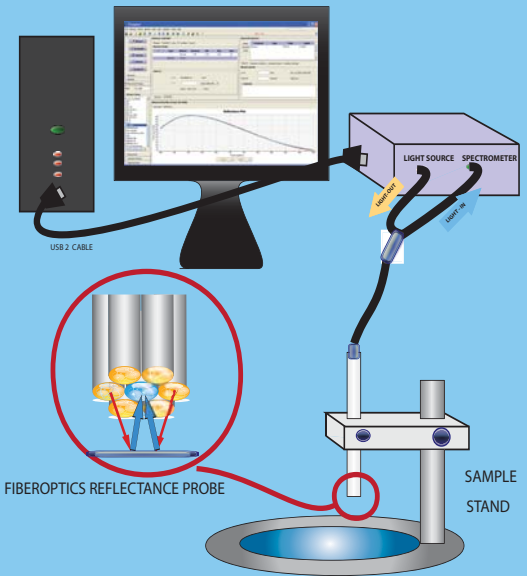
Real time measurement and analysis. Multi-layer, thin, thick, free-standing and nonuniform layers.

**Extensive materials library** (500+ materials) - new materials easily added. Support of parameterized materials: Cauchy, Tauc-Lorentz, Cody-Lorentz, EMA and many more....

**Flexible:** Desktop or in-situ, R&D or on inline. Easy integration with external system using TCP-IP. Customization for OEM

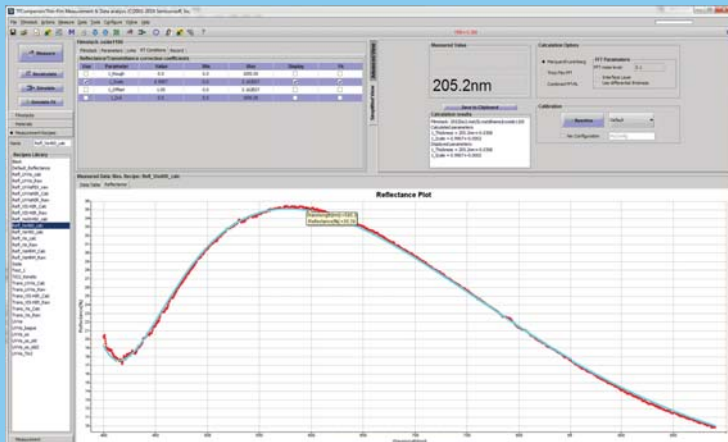
**Measurement:** thickness, optical constants, surface roughness

**User friendly and powerful:** One-click measurement and analysis. Powerful tools: simulation & sensitivity, background and scaling correction, linked layers and materials, multi-sample measurements, dynamic measurements and production batch processing.



MProbe system diagram

Precision	0.01nm or 0.01%
Accuracy	0.2% or 1 nm
Stability	0.02nm or 0.03%
Spot Size	<1 mm standard
Sample Size	10 mm - 200 mm (300mm optional)

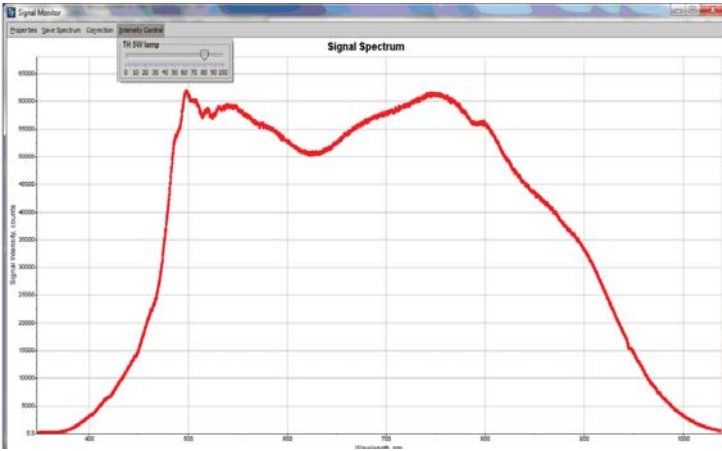


Measurement of 200nm Si oxide film.  
Measurement vs. model data fit.



MProbe system (desktop configuration)

# Specification



Raw reflectance of Si wafer. Integration time: 10ms. Regulation of lamp intensity controlled from the software.

Spectral range (nm)	400-1000nm
Spectrometer/detector	F3 astigmatism-corrected spectrometer, 2048 pixels Si CMOS (4096 pixels option), 16 bit ADC, 380-1000 nm range
Spectral resolution	<1.5 nm
Light source	5 W Tungsten-halogen lamp (Xe filled), CT 2800° Lifetime: 10000 hrs (regulated intensity)
Reflectance probe	Fiberoptics (7 fibers assembly), 400µm fiber core
Precision	<0.01 nm or 0.01%
Accuracy	<1nm or 0.2%
Weight (main unit)	5 kg
Size (main unit)	9" x 12" x 4" (WxDxH)
Power	100-250VAC, 50/60 Hz, 20W

**MProbe Advantage**

- 1 GbE LAN connectivity
- Fast measurement
- Standalone software included
- Remote diagnostics
- Measurement history to recall and display results (plots and statistics)
- Compare and evaluate multiple reflectance/transmittance spectra
- FPGA controlled light source with 10000+ hours lifetime
- Correction options for angle, wavelength resolution and intensity variations
- Clean room class 1000 compatible
- Free software update for 12 months

Hardware options	
-LP500	long-pass filter, limits wavelength below 500nm. Used for photoresist measurement. (other filters available)
-DAC	4 channels DAC board for analog output of the measurement results (0-20mA)
-TO	Transmittance option
-AUX	Auxiliary port for I2C, SPI, GPIO and triggers for integration with external systems
-20W	replace 5W TH lamp with 20W TH lamp (2000 hrs lifetime)

**Included in the Box:**

1. Main unit (spectrometer/light source/electronics)
2. Reflectance probe VisNIR
3. Sample Holder SH200A with VisACH focusing lens
4. Calibration set
5. Si oxide test wafer (200nm)
6. TFCompanion -RA software
7. Power adapter, USB cable

Software options	
-MOD	remote control (TCP) based on Modbus protocol
- CM	continuous measurement with specified number of measurement and/or delay between them
-TCP	TCP server for continuous production line measurement. Customized to requirements.

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