

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

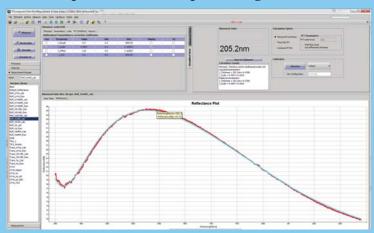
Real time measurement and analysis. Multi-layer, thin, thick, free-standing and nonuniform layers.

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 friedly 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.



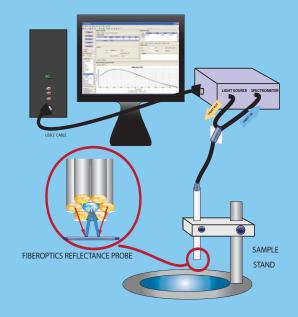
Measurement of 200nm Si oxide film.

Measurement vs. model data fit.

# **MProbe Vis(X)**

### **Thin Film Measurement System**

It is easy to be an expert with MProbe



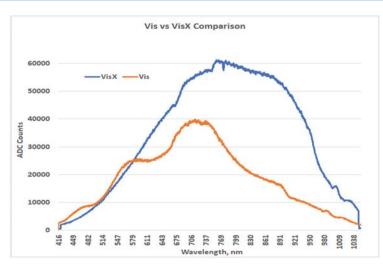
MProbe system diagram

| 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) |



MProbe system (desktop configuration)

## Specification



Comparison of MProbe Vis and VisX sensitivity. Intensity measurement of 5W TH lamp (Integration: 150µs)

### **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
- Correction options for angle, wavelength resolution and intensity variations
- Clean room class 1000 compatible
- Free software update for 12 months

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

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| Spectral range (nm)<br>Effective | 400-1000nm Vis<br>450 -1050nm VisX  |
|----------------------------------|---|
| Spectrometer/de-<br>tector       | F3 astigmatism-corrected (toroid mirror) spectrometer, 2048 pixels Si CMOS, 16 bit ADC. |
| Spectral resolution              | <1.0 nm   |
| Light source                     | 5 W Tungsten-halogen lamp<br>(Xe filled), CT 2800° Lifetime:<br>10000 hrs               |
| 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   |

| 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   |  |
| -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