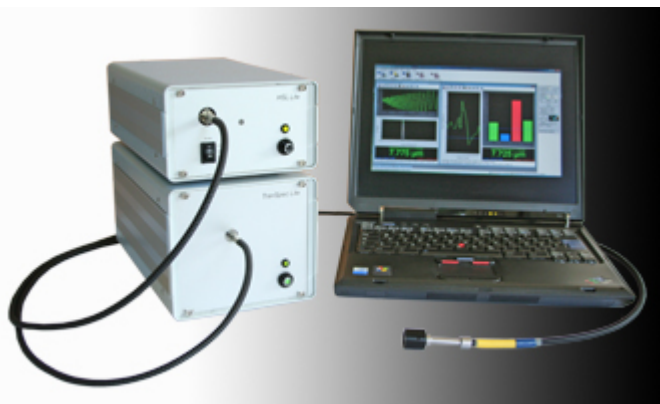




FTM-Lite NIR • Film Thickness Gauge

High-Precision Film Thickness Desktop Gauge

The **FTM-Lite NIR** film thickness gauge uses the white-light interference phenomenon for non-contact and non-destructive film thickness determination of transparent single or double layers in the range of approximately 2 to 100 micrometer. The FTM-Lite NIR instrument is designed for manually performed, but even though high-precise measurements in the lab.



TranSpec Lite NIR - Desktop PDA-Spectrometer

Our TranSpec Lite NIR spectrometer (on bottom in the picture) exclusively uses the high-innovative spectrometer modules of Carl Zeiss, Germany. With these modules, the entrance slit is imaged on a photodiode array (PDA) by means of a holographic created, concave diffraction grating. All optical components of the spectrometer module are firmly mounted together in one unit and permanently adjusted to each other, which means that there are no mechanically moveable parts at all. Thus the TranSpec Lite NIR spectrometer is free-of-maintenance!

HSL Lite - Desktop Halogen Spectral Lamp

The HSL Lite halogen spectral lamp (on top in the picture) is designed to operate with the TranSpec Lite NIR spectrometer in order to detect white-light interference spectra using a bifurcated fiber optics cable for your non-contact film thickness measurements. It comes with an integrated shutter, which can be manually opened and closed or automatically switched by TranSpec Lite NIR.

FTM-ProVis Lite - Powerful Film Thickness Software

This very easy-to-use software package uses an improved Fast-Fourier Transformation (FFT) algorithm to determine the film thickness from measured white-light interference spectra of thin transparent layers, which allows high-precision results in the entire measurement range. The film thickness result is computed in real-time, can be displayed in various different on-line charts and logged to a text file during the measurement. FTM-ProVis Lite also permits the fully automatic and simultaneous measurement of double-layers.

Technical specifications on next page ►



FTM-Lite NIR Film Thickness Gauge • Technical Specifications

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Minimum Hardware and Software Requirements

- PC/Laptop with at least Pentium-4
- Windows XP or Windows Vista
- CD-ROM drive for installation
- Graphics adapter with at least 1024 x 768 pixel, 1280 x 1024 pixel is recommended
- One available USB 2.0 port

Mechanical Construction

- Desktop enclosures with CE certificate, no cooling required
- Dimensions (H x W x D) - TranSpec Lite NIR : 140 x 160 x 280 mm - HSL Lite : 100 x 160 x 280 mm
- Weight - TranSpec Lite NIR : 3.4 kg - HSL Lite : 1.8 kg
- External power supply with 100/240 Volt auto-switch

TranSpec Lite NIR - Desktop PDA-Spectrometer

- Industry standard FSMA connector for bifurcated fiber optics cable
- Spectrometer modules of Carl Zeiss, Germany, with holographic created concave diffraction grating
- Photodiode array with 512 pixel, no cooling required
- Permanently adjusted module, no mechanically moveable parts, maintenance free!
- Module specific wavelength range: ~ 600 to 1020 nm
- Module specific spectral resolution: ~ 2.4 nm
- Module specific spectral pixel interval: ~ 0.8 nm
- Absolute wavelength accuracy: ≤ 0.3 nm
- Temperature drift: typically < 0.005 nm / Kelvin

HSL Lite - Desktop Halogen Spectral Lamp

- Industry standard FSMA connector for bifurcated fiber optics cable
- Integrated mechanical shutter, manually or automatically switched
- 7 Watt miniature halogen bulb of Welch Allyn, Inc. USA
- Spectral output range: ~ 350 to 1200 nm
- Typical lifetime of the bulb: 1500 hours

FTM-ProVis Lite - Film Thickness Software

- Multi-threaded MDI-Application for Windows XP/Vista, online-help, color printed user's manual
- Evaluation of interference spectra with the help of a special Fast-Fourier-Transformation (FFT)
- New algorithm for high-precise sub-pixel determination of the FFT peak position (film thickness result)
- Accuracy typically within ± 0.005 microns, repeatability typically within ± 0.002 microns (standard WEG test)
- Real-time chart representation of Interference, FFT-Spectrum and Film Thickness Trend during measurement
- Consideration of refraction index and dispersion (Cauchy dispersion correction)
- Simultaneous measurement and film thickness evaluation of double layers possible

Film Thickness Measurement Range

The film thickness range generally measurable with FTM-Lite NIR is approximately 2 to 100 micrometer (~ 0.08 to 4 mil), but depends essentially on the currently selected spectral evaluation range, which can be setup in the software individually for each type of layer. Other factors which determine the measurable film thickness range are the refraction index (and its dispersion) of the layers to be measured.

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