Coating Thickness Measurement System

INTRODUCTION

Designed to meet the needs of industry, the LABCOAT system provides a simple and precise way to measure transparent coatings and films.

- Transparent coating and film thickness measurement
- Non-contact / Non-destructive
- Fast, Accurate and Precise
- Easy to use

The system is based on white light interference effects caused by reflection from the top and bottom surfaces of the coating. This results in constructive and destructive interference at various locations in the spectrum. Analysis of this spectral pattern, along with the material's refractive index, allows the calculation of the coating thickness.
An innovative Solid-State Diode Array spectrometer is at the heart of the system. Based on an award winning design, this unit provides stability, speed and precision without maintenance.
A flexible fiber-optic probe allows remote hand-held operation . The measurement area size can be selected to meet a variety of applications. Industrial use of protective coatings,dielectric films, etc. is growing rapidly. Control of thickness is a key to good coating performance. The LABCOAT system can provide this valuable thickness information for both R&D and Quality Control in application areas such as Automotive, Plastics, Paint, Chemical, Packaging and Microelectronics.

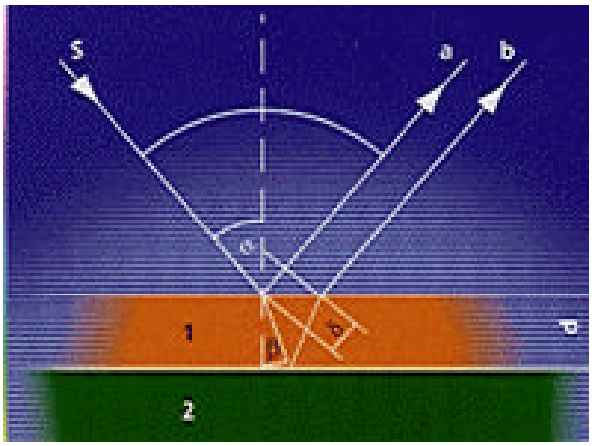


Figure 1: White light interference

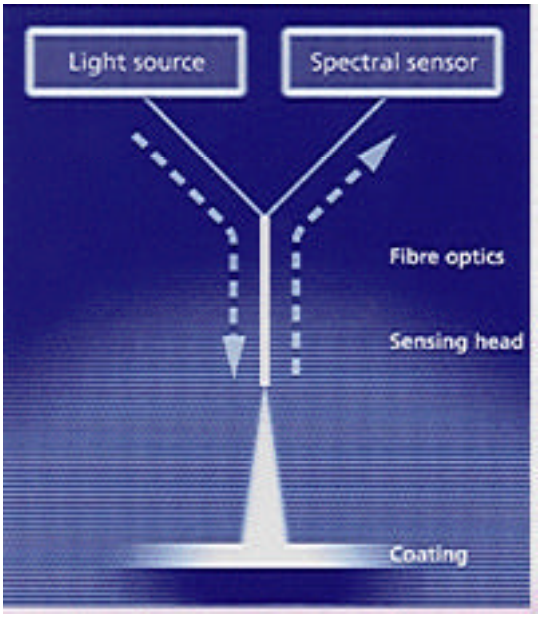


Figure 2: LABCOAT System

株式会社　スペクトラ・コープ
〒164-0011 東京都中野区中央4-4-5第一小林ビル
Tel:03-5328-2858　Fax:03-5328-2859
URL http://www.spectra.co.jp

THE SYSTEM

Measurement:

- Technique: white light interference
- Measuring in transmission or reflection
- Measurement area size: 2 mm typ.
- Thickness range: 0.3 to 80 micron
- Repeatability: 0.5% typ.
- Measurement time: < 1 second
- Fiber probe: distance up to 25 meters possible

Spectrometer: MCS 500 series

- Type: Solid-State Diode Array
- Grating: Concave holographic (no moving parts)
- Wavelength: (220) 380 to 1000 nm
- Resolution: 0.8 nm / diode
- Integration time: 0.01 to 1seconds

Minimum computer requirements:

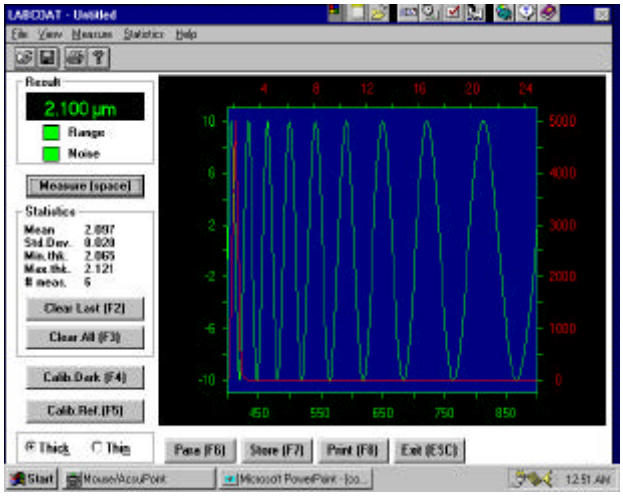
- Processor: Pentium
- Memory: 16 Megabyte RAM
- Adapter slot: PCI or PCMCIA

System software:

- Zeiss LABCOAT software program
- Windows 9x, Windows NT

On-line Process:

- Dedicated systems can be customized for on-line process control.



THE SOFTWARE

- "Labcoat" software provides simple yet powerful evaluation of the spectral interference pattern for high performance thickness measurement.
- Selectable coating type.
- Selectable thickness range.
- Single key stroke measurement.
- Display of measurement confidence.
- Statistical analysis.
- Data compatibility.

Carl Zeiss
Spektralsensorik

D-07740 Jena
Phone: ++49 (03641)64 2838
Fax: ++49 (03641)64 2485
E-Mail: info.spektralsensorik@zeiss.de
Internet: http:// www.zeiss.de/spectral