



NanoCalc Series

The NanoCalc Series are part of the Mikropack product line of thin film metrology systems. The NanoCalc systems are versatile and configurable thin film measurement systems utilising spectroscopic reflectometry to accurately determine optical and non-optical thin film thicknesses for consumer, semiconductor, medical and industrial applications in a wide range of fields.

Applications

- » Transmission and reflection measurements of anti-reflective & hardness coatings
- » Analysing medical coatings and catheter balloon foils
- » Testing hardness and wear coatings
- » Measuring thickness of thinned silicon wafers
- » Determining photo resists for masks
- » Analysing coatings applied for weather or dirt resistance (Lotus Effect)
- » Measuring coatings inside drinks containers
- » Air gap measurements
- » Optical disk coating analysis (CD, DVD, ...)

Features

- » Resolution to 0.1 nm
- » Can measure up to 10 layer stacks
- » Refractive index
- » Sophisticated algorithms enable defect and roughness tolerant measurements
- » Large database to ensure accuracy over a broad range of materials
- » Adaptors for complex geometries and accessories for thickness mapping

Specifications

NanoCalc-VIS NanoCalc-XR NanoCalc-DUV NanoCalc-NIR

SPECTROSCOPIC				
Wavelength range	400 - 850 nm	250 - 1050 nm	190 - 1100 nm	900 - 1700 nm
Thickness range	50 nm - 20 µm	10 nm - 100 µm	1 nm - 100 µm	100 nm - 250 µm
Optical resolution	0.1 nm	0.1 nm	0.1 nm	0.1 nm
Repeatability	0.3 nm	0.3 nm	0.3 nm	1 nm
Angle of incidence	90° or 70°			
Number of layers	up to 10			
Refractive Index	yes			
Test materials	transparent or semitransparent thin film materials			
Reference needed	yes, bare substrate			
Measurement modes	Reflection and Transmission			
Rough materials	yes			
Measurement speed	100 ms to 1 s			
On-Line possibilities	yes			
Mechanical tolerance (height)	with collimation (COL-UV-6.35)			
Spot size	Standard: 200µm or 400µm; optional 100µm on request			
Microspot	yes, in combination with microscope			
CCD colour	yes, in combination with microscope			
Mapping option	6" or 12" xy-scanning stage			
Vacuum possibilities	yes			



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