NanoMap-500LS

3D STYLUS SURFACE PROFILOMETER

THE POWER OF STAGE SCANNING

&

HIGH RESOLUTION TIP SCANNING

NANOMAP-500LS
3D HIGH RESOLUTION
STYLUS SURFACE PROFILOMETER

Our advanced contact mode Stylus Profilometer performs traditional surface metrology tasks such as surface roughness, step height, curvature, and shape over a variety of materials and a variety of sizes.

The NanoMap-500LS allows for Stylus Profilometer measurements employing both ***Tip and Stage Scan*** Modes. ***Tip Scan*** uses a piezo drive to move the stylus tip up to a 500micron x 500micron area to generate ultra-high resolution results in addition to 3D and 2D images. ***Stage Scan*** moves the sample stage underneath the stylus tip to generate high resolution images. In both methods, the stylus tip control throughout the entire scan range is achieved using a ***"Light Lever Principle"*** (similar to AFM) yielding unsurpassed results compared to other methods such as LVDT or Capacitance techniques. As piezo stage has better XY accuracy, Tip Scan produces far better images as compared to stage scan mode.

The NanoMap-500LS offers vertical ranges of up to 1.3 mm while still being able to measure vertical features on the nanometer scale which could be anywhere from 0.5 nm upwards. The substrate thickness is upwards of a nm to tens of millimeters. The Stylus Tip uses a low contact force suitable for measuring a variety of materials and surfaces non-destructively.

The measurement stability and repeatability makes the NanoMap-500LS ideally suited for a variety of uses ranging from university and industrial research to production quality control.

The NanoMap-500LS allows up to 150mm scanning area (larger scanning range options available) and comes with an anti-vibration Pads and acoustic enclosure to ensure complete noise elimination. Robust hardware includes 64 bit, multiple core processors. The parallel processor configuration allows data processing independent of the pixel. Tester comes with latest windows based OS. Intuitive once click easy to run interface. Post data analysis using powerful imaging software from Image Metrology..

USA CORPORATE HEADQUARTERS

2310 WALSH AVENUE

SANTA CLARA, CALIFORNIA 95051

TEL: +1 408 982 9748 FAX: +1 408 689 9638

www.aeptechnology.com

NANOMAP-500LS (SPECIFICATIONS)

Category	Item	Specification
General	Measurement Technique	Stylus Profilometry (Contact Measurement)
	Measurement Capability	2D & 3D Surface Profile Measurements and Analysis
	Stylus Control	Light Lever Principle (similar to AFM)
	Full time color CCD camera with bright and dark field illumination	
	Optical Camera Field of View	FOV 0.5mm to 2mm (eq. 50x to 200x magnification),others on request
	Optical Illumination	Dark and bright field SW controllable
	Software Controllable Stylus Force throughout entire range	0.03to 100 [mg]
	Sampling Rate	Standard 1000 HZ, Optionally 2000 HZ
	Stylus Tip Radius Options	2 [um], 5 [um],12.5 [um] and 25 [um]; 0.1–0.8 µm optional
Tip Scan (Piezo scanner)	Step height repeatability	≤0.5 [nm], 1 micron step, 1 σ
	Vertical resolution	0.1 [nm]
	Measurement height fine range	5 [um]
	Measurement height coarse range	0.5 [mm]
	XY scan resolution	0.1 [um]
	XY scan position repeatability	0.2 [um]
	Scan speed	10 to 50 um/sec
	Scan range	10 to 500um
	Data point per scan	1-million points
Stage Scan	XY sample area	150mm x 150mm with F250mm mounting clearance optional 200mm, 300mm, 450mm and 620mm
	XY stage movement range	150mm x 150mm (optional 200mm, 300mm, 450mm and 620mm)
	XY stage position repeatability	5 [um]
	Maximum scanning length	150mm (optional 200mm, 300mm, 450mm and 620mm)
	Scan speed	0.1 to 5 mm/sec
	Z stage range	1.3 mm
	Manual rotation stage range	360 degree, Motorized available optionally
	Manual tilt stage range	+/-2 degrees,+/- 4 Deg,+/- 8 Deg, Automatic available optionally
Standard Sample	Step height standards	100 micron, Other sizes available on request.

Facilities/Environment

Humidity: 10-80%, relative humidity, non-condensing

Temperature: 65-85 degrees Fahrenheit (ΔT < 1 degree/hour)

Vibration: < 90 micro-in/sec (velocity)Acoustic: < 60 dB-A

Power Requirements: 110VAC 60 Hz, 110/240 VAC, 50/60 Hz

Selected Customer List and Their Applications

End User	Model	Application
National Institute of Standards and Technology (NIST), USA	NanoMap - D	Establishing national step height and roughness standard.
Pacific Northwest National Lab (PNNL), USA	NanoMap – 1000WLI	Materials research.
Boeing Aircraft, USA	NanoMap – 500LS	Materials and thin film research
University of Texas, Austin, USA	NanoMap - LS	Thin film thickness for optical mirrors
Kateeva Inc., USA	NanoMap - D	Organic LED
Samsung Semiconductor, Korea	NanoMap - D	Semiconductor and MEMs devices
Korea University, Korea	NanoMap -LS	Materials research
Gwangju Institute of Science and Technology (GIST), Korea	NanoMap – 500LS	Solar panel and thin film
Hyundai Motors, Korea	NanoMap 1000WLI	Piston surface characterization
Sakigake Semiconductor, Japan	NanoMap -500LS	Semiconductor
Toyohashi University, Japan	NanoMap – 500LS	Materials research
Fuji Xerox, Japan	NanoMap – 500LS	Thin film
Tshinghua University, Taiwan	NanoMap -LS	Medical research
Fengchia University, Taiwan	NanoMap – 500LS	Thin film
Unimicron, Taiwan	NanoMap - 8001	PCB Panel production
Institute Of Microelectronics, Singapore	NanoMap – 500ES	Semiconductor
Malaysia University, Malaysia	NanoMap – 500LS	Materials research
Tsinghua University, China	NanoMap -500 LS	Materials research
Yunsun Inc., China	NanoMap - LS	OLED and LCD production
Fudan University, China	NanoMap - D	Semiconductor
India Institute of Technology, Kanpur, India	NanoMap - D	Materials
RD Pune, India	NanoMap – 1000WLI	Solar Materials
Tvet University, Russia	NanoMap – 1000WLI	General research
Madrid University, Spain	NanoMap – 500LS	Thin film
Krakow Institute Advanced Manufacturing Technology, Poland	NanoMap - LS	Materials research