Both Tip and Stage Scan modes

Industry-Leading Sensitivity, Unmatched Performance and Versatility

Ease of use and Fast speed
Contact Profilometer
A contact profilometer uses a diamond stylus, which is moved vertically and laterally in contact with the sample for a specified distance. It precisely measures small variations in stylus displacement as a function of position. This technique is a real direct measurement of surface (no modeling etc.).

Introducing AEP NanoMap-500ES
Our advanced stylus based contact 3D surface profilometer NanoMap-500ES is a seamless integration of conventional contact profilometer and scanning probe microscope (SPM) that allows to generate high resolution 2D & 3D images of scanned area up to 300X300mm (Z range from nm to 1mm)

a) Tip Scan mode - Precision piezo stage with close-loop capacitance sensor for position feedback.
b) Stage Scan - for larger scanning area

It utilizes superior repeatable, ultra low force that allows it to measure surface topography for any kind of materials. Widely used for both research and production environment.

Hardware
The acoustic enclosure, antibration table, fully automated stages, granite base, fine finish on parts and components, low power consumption, small foot print, clean room compatible material, lower drive referenced to optical flat reference, remote access, etc. makes NanoMap ES a potent tool in hands of the user.

Other Misc Features
It has a maintenance free flexure design for ultra low noise performance and long lifetime and durability.

The post data analysis SPIP software is industry’s most versatile and intuitive. With access to extensive libraries user can do surface analysis for various applications.

Advantages
• World’s surface finish standards are written for contact profilometers
• No requirement of optical constants
• An advantage in dirty environments
• Works for both research and production environment.
• Direct Technique: No modeling required

Data Generated
• Surface roughness
• Step height
• Volume Wear
• Stress
• Bowing
• Film thickness
• Surface Profiling
• Defect Studies
Chief Features
• High resolution 3D and 2D images
• Both Tip and Stage Scan modes.
• Large Scanning Area.
• Fast effective real-time data monitoring.
• Powerful statistical analysis software.
• Automated handling of multiple small and large samples.
• Integrated high resolution optical microscope.
• Easy to interchange tips.
• 64 bit architecture.
• Easy two click operation.

Software Package
• Stress analysis
• 3d Virtualization software
• Movie and time series analysis
• Roughness and hardness analysis
• Particle and pore analysis
• Force curve analysis
• Extended Fourier analysis
• Filtering
• Stitching images etc.

Applications
Automobile/ Aerospace
Clutches, tire, paint, surface finish, piston liner, gears, glass, polymer etc.

Thin Films
DLC, CVD, ALD, electro-plating, PVD, decorative coatings, solar cells, MEMS, etc.

Health Science / Biomedical
Joints, knee, bone, dental, skin, hair, sutures, stent, contact lens, tissues, implants, pumps, lens etc.

Coatings
Hard coating, paint, lubricant, protective coating, surface modifier

Manufacturing
Cutting tool, surface inspection, wear volume, fretting etc.

Chemicals
Lubricant, additives, metal working fluid, Anti friction coatings, etc.

Please Contact us for information or a free demo.
### NanoMap 500ES Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scanning Mode</strong></td>
<td>Tip and Stage Scan</td>
</tr>
<tr>
<td><strong>Vertical Resolution</strong></td>
<td>0.1 nm with fine range; 0.1 μm with Coarse Range</td>
</tr>
<tr>
<td><strong>Vertical Dynamic Range</strong></td>
<td>To 5 μm with fine range; up to 500 μm with coarse range (Optional 1.6mm)</td>
</tr>
<tr>
<td><strong>Vertical Field of View</strong></td>
<td>Standard 1.5 X 1.5 mm, optionally from 0.25 X 4 mm can be provided</td>
</tr>
<tr>
<td><strong>Illumination</strong></td>
<td>Bright and Dark Field illumination, SW settable intensity</td>
</tr>
<tr>
<td><strong>Lateral Resolution</strong></td>
<td>1 μm in stage scan mode and 0.1 μm in Tip scan mode</td>
</tr>
<tr>
<td><strong>Scan range</strong></td>
<td>Up to 300 x 300 mm</td>
</tr>
<tr>
<td><strong>Stage with tip/tilt</strong></td>
<td>Motorized and Manual Stage, Z 50 mm, XY 300 MM, tilt +/- 6 deg</td>
</tr>
<tr>
<td><strong>Stylus Loading Force</strong></td>
<td>0.03 to 100 mg</td>
</tr>
<tr>
<td><strong>Stylus</strong></td>
<td>Various Sizes from nm to Micron range available.</td>
</tr>
<tr>
<td><strong>Step height Repeatability</strong></td>
<td>&lt; 0.5 nm</td>
</tr>
<tr>
<td><strong>Step Height Accuracy</strong></td>
<td>&lt; 0.5% relative,</td>
</tr>
<tr>
<td><strong>Scan Speed</strong></td>
<td>10μm/sec to 2000 μm/sec</td>
</tr>
<tr>
<td><strong>Control Unit and Data Acquisition</strong></td>
<td>Computerized Motor Controllers, 64 BITDAS up to 200 kHz, windows 7 Operating System, Dual Monitors</td>
</tr>
<tr>
<td><strong>Camera</strong></td>
<td>CCD with selectable acquisition densities 1920 x 1920 pixels</td>
</tr>
<tr>
<td><strong>Calibration standards</strong></td>
<td>NIST Certified Standards, Buyer Selectable</td>
</tr>
<tr>
<td><strong>Data Points Per Scan</strong></td>
<td>2 Million</td>
</tr>
<tr>
<td><strong>Vibration Isolation</strong></td>
<td>Active and Passive, User Defined</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td>Roughness, Stress Analysis, FT, Histograms, 2D/3D profiling, stitching other SW information available on request</td>
</tr>
<tr>
<td><strong>Power requirements</strong></td>
<td>110V, 60 Hz, 220V, 50Hz, 1phase</td>
</tr>
<tr>
<td><strong>Footprint</strong></td>
<td>32”L x 32”W x 28”h</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>Compressed Air</td>
</tr>
</tbody>
</table>

*Specifications are subject to change without notice*