



A FOGALE nanotech Group Company

NST Series

NANOSCALE SURFACE TOPOGRAPHY

NON-CONTACT METROLOGY SOLUTION



Market Expansion
Services by
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The NST Series is a non contact full field metrology solution based on optical microscopy enabling surface topography measurements at the nano scale.

The NST Series is pushing the boundaries of conventional microscopy with performances that stretch beyond contact profilometry and into the AFM space.

Key benefits

- Fast and high throughput in-line metrology solution
- Area scan with vertical resolution down to 0.1nm in a single measurement
- No artifact from transparent layers - Patented
- Unique capabilities for Cu to Cu hybrid bonding

Main applications

Cu CMP	Front end Etch
Hybrid bonding: Pre and post bonding	Front end CMP

Technology

Measurement range

Phase Shifting Interferometry (PSI)	<1nm to 150nm
Vertical Scanning Interferometry (VSI)	From 100nm to 100µm
Time domain IR spectroscopy	30µm to 5000µm in air
IR microscopy	Frontside, backside, in and out of plane overlay

Specifications

Lateral resolution	Down to 0.2µm
Vertical resolution	0.1nm
Field of view	Up to 2.5x2mm (Stitching of FOV available)
Roughness	Resolution limit: >0.15nm Sq Repeatability: 0.15nm + 1% of measured roughness
Overlay	Resolution limit: 40nm Repeatability: 20nm + 1% of measured value
System configuration	8", 12", fully-automatic SEMI Standard compliant

NST XP

A versatile, high speed, and high precision sub nanometer non contact full field profilometry solution. Flexible architecture to provide a wide range of profiling metrology measurements. Not sensitive to transparent layer artifacts due to its patented technologies.

- Nano topography
- Dishing and erosion
- CD and step height
- Roughness
- Deep trench
- TTV, bow, warp

NST Bond

A complete metrology solution for hybrid bonding: Non contact full field profilometry post Cu CMP for dishing and erosion and post Cu to Cu bonding. Allowing high accuracy direct measurements without the need of surface metallization.

- All NST XP measurements and applications
- High resolution in and out of the plane overlay

About UnitySC

UnitySC is recognized worldwide as a key player in inspection and metrology, combining leading edge technologies in automated optical inspection and 3D imaging with microscopy, temporal-mode interferometry, and spectrometry, which enables customers to deliver higher yields and faster time to market. Customers include the largest foundries, IDMs, OSATs, and R&D centers.





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