



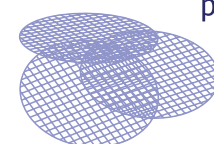
partnering for process control



NovaScan[®] 3090Next SA

HVM Scatterometry-Based Metrology Solutions

- High-end metrology performance - meeting ITRS 45nm requirements and beyond
- Provides the best fleet matching without a need for recipe adjustment or calibration
- Unmatched throughput and reliability result in lowest Cost of Ownership
- Identical Stand-alone and Integrated Metrology units provide complete recipe transportability
- 2D/3D and in-die application modeling capabilities
- Offers a wide range of metrology solutions for Etch, Lithography, CMP and CVD



passion
innovation
performance

A Leading-Edge Tool Supporting The Most Demanding Metrology Challenges

The NovaScan 3090Next SA provides a state-of-the-art metrology solution, implementing polarized normal incidence spectroscopic scatterometry with an extended UV and IR spectral range. This leading-edge tool brings unprecedented capabilities to the metrology industry. The unique hardware design of the NovaScan 3090Next SA allows excellent fab-to-fab worldwide fleet matching without a need for recipe adjustment or calibration on every metrology tool. A major highlight of the NovaScan 3090Next SA is its new 2D/3D modeling functions. Leveraging upon its unique software, the NovaScan 3090Next SA allows you to model any desired shape, therefore enabling enhanced solutions that identically match, what is really on the wafer. Nova's hardware and software are optimized to work in unison, providing extraordinary performance exceeding their relative specifications.

The NovaScan 3090Next SA metrology module is identical in design and performance to NovaScan 3090Next IM modules used in the CMP and Etch sectors. This approach ensures the best solution for HVM environments, where SA and IM systems are working together, and where tool-to-tool matching and recipe transportability are essential.

Thin-Film (CMP) Applications

Metrology	
Oxide / Si	Oxide – TEOS, BPSG, Thermal Oxide, etc.
STI	Oxide / SiN / pad Oxide / Si Oxide / Si SiN / pad Oxide / Si
PMD	Oxide / Silicide / Polysilicon
	Oxide / Si or Silicide – TiSi, Wsi, CoSi, NiSi, etc.
ILD	Oxide / TiN / Ti / Al
Poly	Poly / gateOx / Si
DARC	Capabilities for both PMD and ILD applications
SOI	Si / Oxide / Si Oxide / Si / Oxide / Si
Cu	Oxide / SiN or SiC / Ta / TaN / Cu or Si, Metal Line Thickness, Erosion (up to 80% metal density) measurements
W	Oxide / SiN / Si

Patterning Applications

Metrology		
	Photolithography	Etch
STI	PhotoResist grating on STI stack (SiN / Oxide / Si)	STI trench (SiN / Oxide / Si)
Poly	PhotoResist grating on poly stack (Silicide / Poly / gox / Si)	Poly lines, spacers
Gate Mask Opening (GMO)	PhotoResist grating on poly stack (SiN / Silicide / Poly / gox / Si)	Partial etch (SiN grating / Silicide or Metal / Poly / gox / Si) Final etch: Silicide or Metal grating / Poly / gox / Si
Dual Damascene	PhotoResist grating on Low-k	Depth measurement, side wall angle and CD



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