



## High Throughput & Precision Optical CD

- **Fastest OCD in the market - 250 WPH 13 sites**
- **30% more accurate**
- **30% better tool-to-tool matching**
- **Small pad size**
- **Up to three metrology units for easy on-site upgrade path and extendibility to future metrology**
- **Wafer stress metrology option**



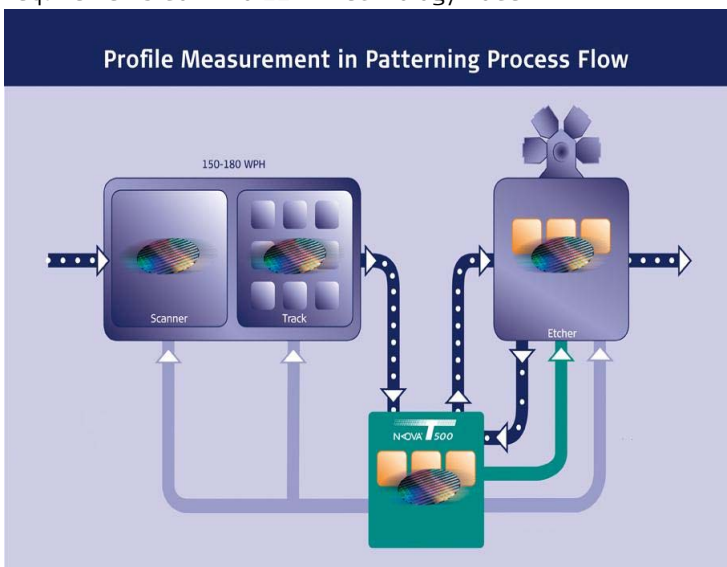
NOVA T500 is a high throughput high accuracy stand-alone optical CD platform following the highly-successful 3090Next metrology tool. It addresses the toughest challenges the industry faces: increasing metrology sampling, improving metrology precision and reducing metrology cost of ownership (CoO).

### Record Breaking Throughput- Fastest OCD in the market!

Semiconductor manufacturers are facing tough process and business challenges. On one hand they are required to increase metrology sampling to cope with shrinking process windows, new materials and new architectures and on the other they are required to reduce cost to maintain profitability. Double Patterning for 32nm and 22nm, whether Lithography based or Etch based dictates higher than before metrology sampling. The Nova T500 throughput of 250WPH (13 sites) offers semiconductor manufacturers significant metrology CoO reduction and enables them to increase metrology sampling. The flexible Nova T500 platform offers configurable throughput capabilities of 135WPH (13 sites) with one Metrology Unit (MU) and 250WPH (13 sites) with a second MU.

### Industry leading precision and matching

Shrinking process windows dictate better understanding of metrology uncertainty factors. The 2007 International Technology Roadmap for Semiconductors (ITRS) replaces the single term precision, representing variability of a single tool over time, with uncertainty, consisting of three different factors: single tool measurement-to-measurement variability, tool-to-tool variability and sample-to-sample variability. The Nova T500 redesigned optics reduce metrology uncertainty by 30% over current generation NovaScan 3090Next meeting ITRS requirements down to 22nm technology node.



### Easy migration from NovaScan 3090NEXT

The Nova T500 metrology unit (MU) is an evolution of the successful and reliable 3090NEXT metrology tool. Its backward compatibility to NovaScan 3090Next enables full recipe transfer, result matching, features and fleet matching (tool-to-tool) between generations.

### Upgradability and Extendibility

The Nova T500 flexible design allows up to three metrology units to be installed on the same tool. This design allows easy and cost effective upgradability to future metrology and extendibility to different metrology capabilities as they become available.

### 3D and In-die Measurements

As process windows shrink the correlation between solid or 2D test structures and the actual device diminishes. The Nova T500 high accuracy and sensitivity to profile parameters, combined with NovaMARS, advanced application development software, provides the ability to measure complex 3D profile parameters on test structures as well as in the device.

### New Tool Operating Software

The Nova T500 operating software features modern Graphics User Interface (GUI) conforming to SEMI standard E-95 controlling all tool operations including recipe creation, measurement, results plotting and analysis, troubleshooting, Preventive Maintenance (PM) and more. An error logging, diagnostic, handling and recovery module constantly analyzes the tool's health, handling errors when they occur and increasing Mean Time Between Interrupts (MTBI). The new "rights management" module supports simple as well as complex viewing and editing rights management schemes preventing unwanted recipe change and information leak to unauthorized personnel.

With 250WPH 13 sites a single NOVA T500 covers all patterning



partnering for process control

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