

VISION 300

INTEGRATED WAFER METROLOGY PLATFORM

One Platform.

Five Integrated Measurement Domains.

One Seamless Workflow.

A unique integrated platform combining wafer geometry, nano-topography, film thickness, bonding metrology and surface inspection within a seamless, intrinsically co-registered measurement workflow.



INTEGRATED PERFORMANCE

120+

WPH



High-Volume
Manufacturing

<1 nm

Vertical
Resolution



Nanometer
Precision

50 μ m

Lateral
Resolution



Full-field wafer
mapping

>2 mm

Warp Range



Measures Highly
Warped Wafers

ENGINEERED FOR NEXT-GENERATION SEMICONDUCTOR MANUFACTURING



One
Machine



One
Coordinate
System



One
Software



One
Unified
Dataset

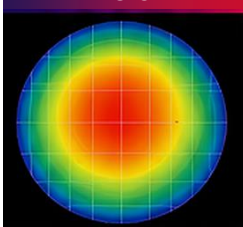


One
Seamless
Workflow

All measurements are acquired on the same platform, intrinsically co-registered and analyzed within a unified software environment. By eliminating data correlation across multiple tools, VISION 300 accelerates process development, improves process control and enables faster, more confident manufacturing decisions.

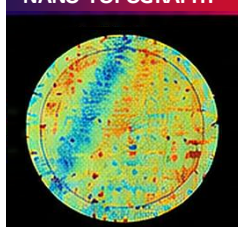
FIVE INTEGRATED MEASUREMENT DOMAINS

WAFER GEOMETRY



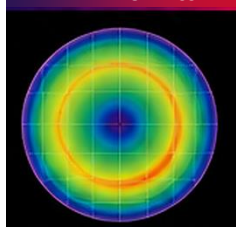
- Bow/warp/TTV
- SFQR
- Edge-Roll-Off
- Global shape

NANO-TOPOGRAPHY



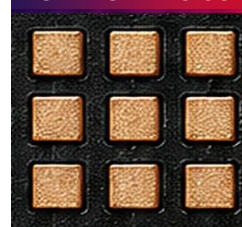
- Local flatness
- CMP monitoring
- Surface texture
- Roughness

FILM THICKNESS



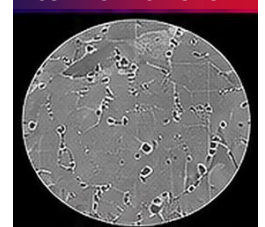
- Thin transparent films
- Thickness mapping
- Uniformity
- Stress induced

BONDING METROLOGY



- Pre-bonding shape
- Void Risk assessment
- Chip tilt / warpage
- Edge delaminations

SURFACE INSPECTION



- Surface Macro-defect
- Particles
- Scratches
- Pattern Breaks

KEY APPLICATIONS



Hybrid
Bonding



Advanced
Packaging



HBM



CoWoS



Wafer
Manufacturing



CMP



Silicon
Photonics



Image
Sensors



MEMS



3D
Integration



One Platform
All key measurements
on one tool



One Unified Dataset
Intrinsically co-registered
and correlated



Faster Decisions
Accelerate process development
and improve yield



**Built for
Manufacturing**
High throughput, robust, and
factory ready

One Platform. Five Domains. One Workflow.

Accelerating Yield Learning and High-Volume Manufacturing.

1. PLATFORM ARCHITECTURE



Optical Engine

Proprietary deflectometry core technology with phase-sensitive detection for nm-level vertical resolution and full-field measurement.



Precision Mechanics

High-rigidity structure and static operation ensure sub-nanometer stability and accurate co-registration across all measurements.



Integrated Software

Unified software platform for acquisition, visualization, analysis and reporting of all metrology domains.



Scalable EFEM & Automation

Scalable EFEM for high-throughput operation with full SECS/GEM communication and factory integration.

Integrated Measurement Workflow



Load Wafer

Multiple FOUP EFEM



Single Acquisition

All measurements acquired in one shot on the full surface

Five Measurement Domains



Geometry



Nano-Topography



Thickness



Bonding Metrology



Surface Inspection



One Unified Dataset

Intrinsically co-registered and correlated



Faster Process Decisions

Accelerate yield learning and enable confident manufacturing integration

2. MEASUREMENT PERFORMANCE

Vertical Resolution (Z)	< 1 nm (RMS)
Lateral Resolution (XY)	50 μ m
Repeatability (Z)	< 0.5 nm
Reproducibility (Z)	< 1.0 nm
Warp Measurement Range	> 2 mm
Throughput	120+ WPH
Wafer Size	200 / 300 mm
Edge Exclusion	< 0.5 mm

3. PRODUCTION READY

- ✓ SECS/GEM (E30/E37/E40)
- ✓ FOUP / SMIF / Open Cassette
- ✓ Recipe Management
- ✓ User Management & Traceability
- ✓ Data Export (SECS/GEM, CSV, HDF5)
- ✓ Factory Automation Ready
- ✓ Remote Monitoring & Diagnostics
- ✓ Multi-language Support

4. CONFIGURATIONS & OPTIONS

VISION 300 – Standard Configuration

- Wafer Geometry
- Nano-Topography

Options

- Film Thickness Module
- Stress / Curvature Module
- Bonding Metrology Module
- AI-based Defect Classification Module

5. TECHNICAL SPECIFICATIONS

Parameter	Specification	Notes
Measurement Principles	Deflectometry (phase-sensitive), Reflectometry	Multi-wavelength optical technology
Vertical Resolution (Z)	< 1 nm (RMS)	On flat, high-reflective surface
Lateral Resolution (XY)	50 μ m	Full-field mapping
Field of View	Up to 310 mm x 310 mm	Per acquisition
Warp Measurement Range	More than 2 mm	Full wafer
Thickness Measurement Range	1 nm – 1 μ m	Material dependent
Thickness Resolution	< 1 nm	On SiO ₂ , 100 nm
Throughput	120+ WPH	For measurement without wafer flip
Dimensions (W x D x H)	1600 mm x 1400 mm x 2100 mm	For 1 Load Port Configuration
Weight	Approx. 2,200 kg	For 1 Load Port Configuration

KEY APPLICATIONS



Hybrid Bonding



Advanced Packaging



HBM



CoWoS



Wafer Manufacturing



CMP



Silicon Photonics



Image Sensors



MEMS



3D Integration



One Platform
All key measurements on one tool



One Unified Dataset
Intrinsically co-registered and correlated



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Accelerate process development and improve yield



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