



HD9800+ 3D Optical Microscope

- Automated, Gage-Capable Metrology for HD Industrial Production

The HD9800+ 3D Optical Microscope combines the most advanced optical metrology technology with advanced automation optimized for HD process control to enable the world's best PTR and flatness metrology performance. The system incorporates decades of industrial HD metrology experience using white light interferometry (WLI), self-calibration, LED high-intensity illumination, operator-friendly software, and a host of other features to provide the high-resolution, non-destructive, gage-capable measurements that data storage manufacturers need to improve process quality and increase yield.

Benchmark for accuracy and robustness

- World leading GR&R performance for PTR and flatness metrology
- Vibration-tolerant design with integrated air isolation for production floor use
- High-resolution camera option for ultimate in lateral resolution and accuracy

Fastest, most efficient production metrology

- Fastest fully-automated 3D microscope on the market for HD industry process metrology
- Patented tip/tilt head design for fast, automated metrology with highest repeatability
- Streamlined operator interface and dedicated data storage software for operator-to-operator ease of use

Optional features for flexible production implementation

- Optional advanced software analyses for additional functionality
- Optional light tower to highlight operational status to factory floor personnel
- Optional bar code scanner for streamlined material and workflow handling

World's Best PTR and Flatness Gage

Bruker's HD9800+ provides the fastest, most accurate 3D measurements for slider pole tip recession (PTR) and slider bearing surface flatness. Featuring a robust system design and production-friendly architecture driven by industry road maps, the system exhibits superior immunity to production floor vibration and noise. The HD9800+ also continuously calibrates to an internal, primary standard, eliminating the need for regular calibration to step heights. This self-calibration ensures long term stability and correlation, and significantly reduces qualification time. The ultimate result is the most accurate industrial metrology performance with the best reliability and serviceability on the market.

Specifications

Measurement Type	Non-contact, 3D surface
Optical Objectives	1.5X, 2.5X, 5X, 10X, 20X, 50X, 100X; Optional TTM objective
FOV Multipliers	0.55X, 0.75X, 1X, 1.5X, 2.0X
Measurement Array	640x480 standard; 1392x1040 high-resolution optional
Light Source	Long-life HB-LED (green and white)
Stages	Automated 100mm Z axis, 200mm XY stage; Optional 300mm XY stage
Optical Assembly	Integrated computer-controlled illumination; Closed-loop laser-referenced vertical scanner
Software	Vision 4.41 running under Windows 7, 32-bit platform
Vertical Measurement Range	0.1nm to 10mm
Vertical Resolution	<0.01nm
RMS Repeatability	0.004nm
Vertical Scan Speed	Up to 80µm/sec, user-selectable
Lateral Spatial Sampling	0.1 to 13.2µm
Optical Resolution	0.38µm/min (based on Sparrow criteria at 600nm wavelength)
FOV	8.45mm and optional stitching for larger FOV
Reflectivity	Range from 0.1 to 100%
Step Height Metrology	0.6% absolute accuracy on 2µm step
Footprint	1245mm (W) x 775mm (D) x 1550mm (H)

Optional Enhancements Enable Optimized Performance

Dual Accu Phase (DAP™) software delivers absolute PTR metrology correlation to baseline AFM benchmarks for variable material sliders.

FastTip/Tilt Mode provides easiest operational capability and best repeatability for 24x7 production runs.

SureVision Software enables etch depth and position measurements without operator intervention via automatic pattern recognition of features of interest.

World's only self-calibrating, fully automated solution for HD industrial production metrology

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