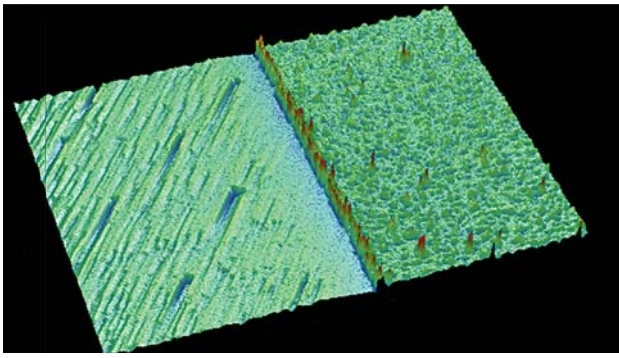
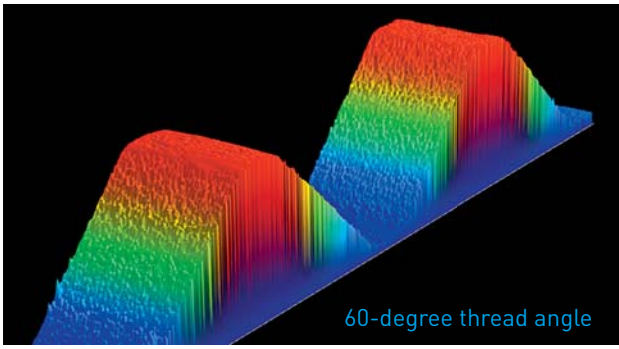
Wyko NT9100 Optical Profiling System

The Choice for Research and Low-Volume Production





The Wyko® NT9100 provides accurate and affordable non-contact surface metrology for advanced applications in MEMS, thick films, optics, ceramics, and advanced materials research

- Accurate surface topography in a small footprint
- Sub-nanometer vertical resolution at all magnifications
- Motorized, programmable stage for stitching large area measurements
- World-class, comprehensive Vision® analysis software

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Wyko NT9100 Optical Profiling System

The Wyko NT9100 Optical Profiling System embodies convenience, affordability, and performance in non-contact three-dimensional surface metrology. This ninth-generation system utilizes a patent-pending dual-LED illumination source to provide superior non-contact measurements on the widest variety of super-smooth or very rough samples, from sub-nanometer surface roughness to millimeter high steps. The NT9100 has been specifically designed to provide the industry's most reliable and repeatable tabletop characterization for R&D, wear, failure analysis, process control, and monitoring.

As the bench-top model of the NT9000 Series optical profilers, the NT9100 shares many of the performance attributes with the larger systems, including: easy measurement setup, fast data acquisition, comprehensible and extensible data analysis, and angstrom-level repeatability. An X-Y stage automation option brings programmability to the NT9100, a first for a Wyko tabletop profiler.

The NT9100 provides performance on par with the other profilers in the NT9000 series, yet its foot print and flexible configuration provides a convenient foundation to grow with your needs. The system comes complete with the industry-leading Wyko Vision software package for advanced 2D and 3D data analysis and visualization. Vision provides over 200 built-in analyses, as well as automated measurement sequences (recipes), data logging, and pass-fail criteria for real-time process feedback and SPC. An optional MATLAB® package enables end users to develop custom Vision analyses for other specialized applications as well.

COVER APPLICATION IMAGES:

(Top) Copper Indium Gallium Selenide (CIGS) boundary region with different grain structures on either side of the boundary, 640x480 array (Image courtesy A. Hall/A. Rockett, Dept. of Materials Science & Engineering, Univ. of Illinois).

(Bottom) 2.7mm stitched measurement of 60-degree slope on machined threads, 20x magnification.

SPECIFICATIONS

Measurement Capability	Non-contact, three-dimensional, topography and film thickness
Objectives	1.5X, 2.5X, 5X, 10X, 20X, 50X for magnifications from 0.75X to 100X; Long working distance objectives available; Optional motorized turret; Optional Through Transmissive Media objectives
Field-of-View Multipliers	0.55X, 0.75X, 1X, 1.5X, 2X
Measurement Array	640 x 480, non-interlaced; Optional 1392 x 1040 camera
Light Source	Long-lifetime green and white LEDs
Optical Assembly	Dual LED illuminator; Three-position FOV turret, closed-loop, 10mm scan
Stages	Automated 100mm Z-axis; ±6° tip/tilt stage; 100mm XY manual stage, standard; 150mm XY auto stage, optional
Computer System	Latest Dell® with 24/7 support line;
Software	Vision running under Microsoft® Windows XP® Professional; Production mode, built-in databasing with pass/fail for any parameter; Optional Stitching, MATLAB/TCPIP, Film Analysis, Optical Analysis, and SureVision
Vertical Measurement Range	0.1nm to 10mm std.
Vertical Resolution[1]	<0.1nm
RMS Repeatability[2]	0.05nm
Vertical Scan Speed	User-selectable up to 24µm/sec
Lateral Spatial Sampling	0.1 to 13.2µm (≤160nm with high resolution camera)
Optical Resolution[3]	0.49µm min.
Field-of-View	7.68 x 5.76mm max, 0.06 x 0.05mm min with std-resolution camera; 7.84 x 5.87mm max, 0.09 x 0.07 min with high-res camera;
Reflectivity	<1 to 100%
Step Height	0.8% accuracy; <0.1% at 1σ repeatability
Profiler Footprint	320mm W x 510mm D x 645mm H; 70kg (excluding peripheral electronics and air table)
Certification	CE, NRTL

1. As demonstrated by a PSI difference measurement on a SiC reference mirror with nulled fringes and 10 averages.
2. As demonstrated by taking the one sigma Rq value of 30 PSI repeatability measurements on a SiC reference mirror.
3. Based on Sparrow Criteria at 535nm.

Note: Performance specifcations are typical and subject to change without notice.

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