

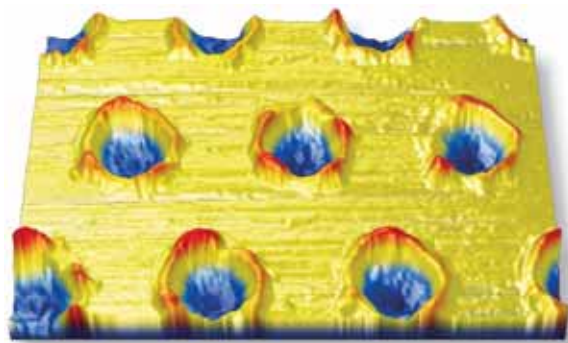
Wyko NT Series Optical Profilers

Unparalleled 3D Surface Metrology

- Best Vertical Resolution
- Industry-Leading Analysis Software
- Fast, Gauge-Capable, Production-Worthy Performance
- Proven Automation with Tip/Tilt Correction in Scanner

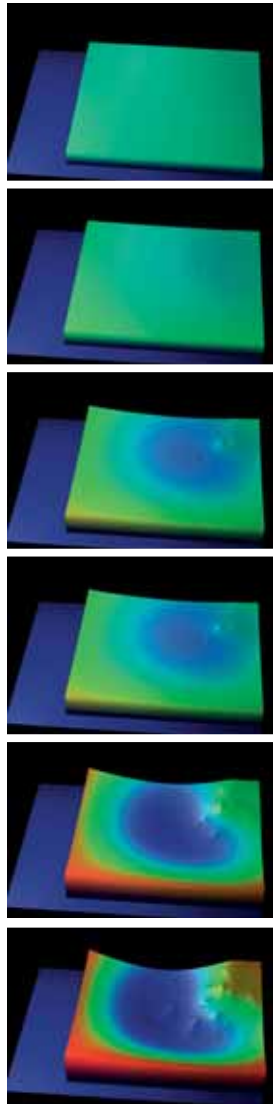
Veeco

Solutions for a nanoscale world.™



Laser textured steel, 0.9 mm x 1.2 mm FOV.

NT Series Optical Profilers



Micro-mirror sweeping through voltage. A hidden defect is revealed by actuating the mirror. (Courtesy Texas Tech University)

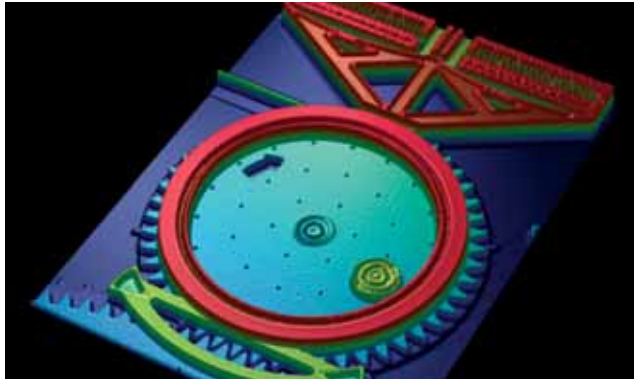
Wyko® NT Series Optical Profilers measure surface topography from nanometer-scale roughness through millimeter-scale steps, with an unmatched combination of sub-nanometer resolution, gauge-capable repeatability, and production-level speed. Incorporating ninth-generation innovations and product reliability, these interferometry systems provide the industry's most precise, 3D surface metrology for R&D, product development, process control, and failure analysis.

VERSATILITY TO PERFORM

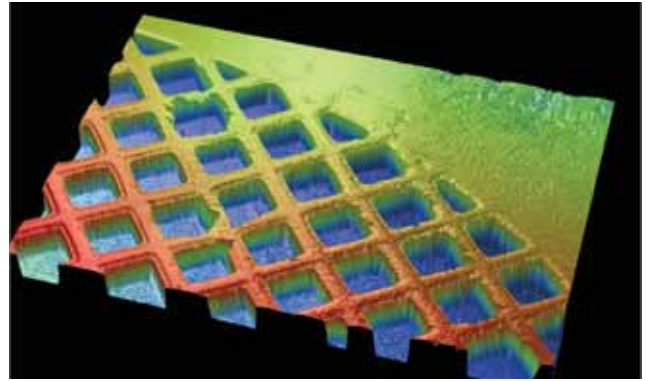
- Sub-nanometer resolution for roughness analysis of super-smooth surfaces
- Large Z-range of up to 10mm for extremely high step measurements
- Fast measurement acquisition over large lateral areas standard, with optional stitching to extend even further
- Range of automation routines for ease of use and maximum throughput

OPTIONS FOR INCREASED APPLICATION FLEXIBILITY

- TTM module for measuring through micro-device packaging and other transparent media
- *In-Motion™* capability for characterizing micro-devices as they actuate
- Fast measurement acquisition over large lateral areas
- Analysis packages for thin and thick film, SureVision automation, and custom MATLAB® algorithms



Micro-gear in mid-rotation. [Courtesy Sandia National Laboratories SUMMIT™ Technologies]



Grating imaged through 0.5mm of water with TTM module. [Courtesy J. Reed and J. Gimzewski, UCLA]

Optional Capabilities for Enhanced Performance

COMPLETE MEMS METROLOGY

The *In-Motion* Solution: MEMS Package for NT Series profilers enables detailed characterization of MEMS and other micro-devices during operation, including optical switches, micro-mirrors, and accelerometers. This option integrates a proprietary stroboscopic illuminator, drive electronics, data acquisition and data analysis software to capture real-time measurement data of a sample as it cycles through its range of motion, at frequencies up to 2.4 megahertz. Slow-motion video provides a visual display of sample movement in three dimensions, providing fast static and dynamic surface metrology on a single system.

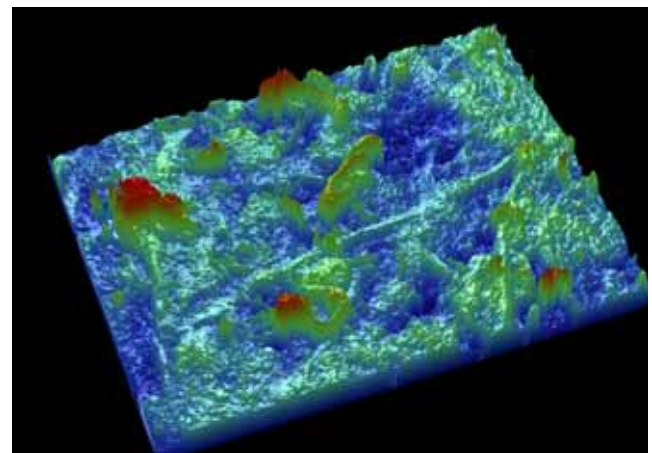
MEASURE THROUGH PACKAGING

The Through Transmissive Media (TTM) Module expands the capabilities of the NT Series profilers, enabling high-resolution measurements of samples through dispersive materials up to 5 millimeters thick with 2X, 10X, and 20X objectives, for 1X–40X effective magnifications. This R&D 100 Award-winning accessory includes a universal housing that allows easy switching between varying transmissive coverings. With applications in MEMS, materials science, and life sciences, the TTM module opens the door for micro- and nanoscale research into novel devices and phenomena.

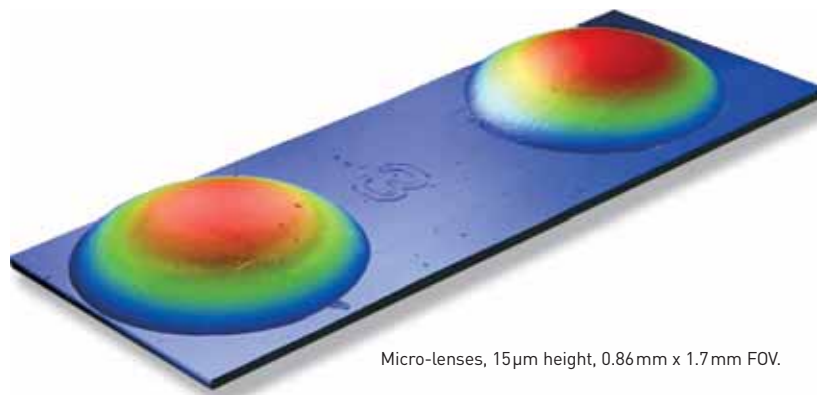
WIDE RANGE OF APPLICATIONS

Today's research, fabrication, quality assurance, and failure analysis applications demand ever-finer detail and tighter tolerances. NT Series profilers provide ideal solutions for characterizing surfaces that are rough or smooth, hard or soft, adhesive, deflectable, or otherwise difficult to measure. Optical profilers supply the precise surface information required to gain a competitive edge in a vast array of applications:

- Photovoltaic Cells
- Machined Metals
- Plastics and Polymers
- Optics
- Automotive Components
- Medical Devices
- Fibrous Materials
- MEMS/BioMEMS
- Glass and Ceramics
- Coatings
- Printed Electronics
- and More...



Brake pad composed of sintered metal, ceramics, and carbon fibers, 640µm x 480µm FOV.



Micro-lenses, 15µm height, 0.86mm x 1.7mm FOV.

WYKO NT SERIES OPTICAL PROFILERS

Model	NT9100	NT9300	NT9800
Form Factor	Bench top	Integrated air table	Integrated air table
Z Range	10mm standard	10mm standard	10mm standard
Max. Scan Speed	24µm/sec	24µm/sec	80µm/sec
Sample Stage	100 mm (4 in) manual; optional 150 mm (6 in) motorized, programmable	Computer-controlled with encoders; 200mm (8in) std.; optional 300mm (12in); optional 200mm (8in) R-theta	Computer-controlled with encoders; 200mm (8in) std.; optional 300mm (12in); optional 200mm (8in) R-theta
Z Stage	Computer-controlled	Computer-controlled	Computer-controlled
Optics	Single objective; motorized turret; automated field-of-view multipliers	Single objective; motorized turret; automated field-of-view multipliers	Single objective; motorized turret; automated field-of-view multipliers
Other Automation	Stitching optional; XY automation options	Focus, intensity; high-speed autofocus, tip/tilt, stitching optional	Focus, intensity; high-speed autofocus, tip/tilt, stitching optional
Calibration	Secondary standards	Secondary standards	Continuous calibrating to internal primary standard

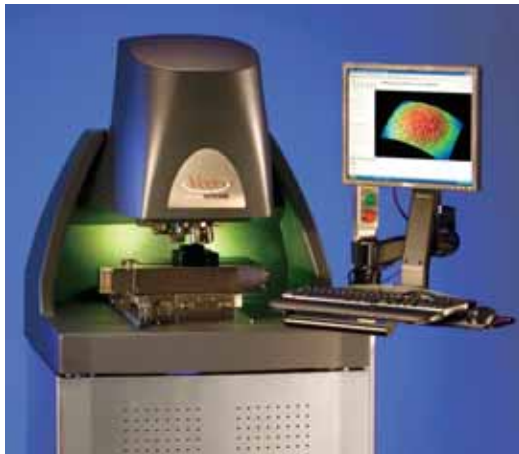
Accurate, Repeatable, Fast 3D Performance



WYKO NT9100

Big Performance in a Small Footprint

The cost-effective NT9100 brings to the bench top many of the performance features of the larger ninth-generation NT profilers, including easy setup, fast data acquisition, comprehensive analyses, and angstrom-level repeatability. The system provides sub-nanometer vertical resolution at all magnifications, and a data stitching option permits scans of larger surface areas. In addition, an X-Y stage automation option delivers programmability to a Wyko tabletop profiler for the first time.



WYKO NT9300

Production-Ready Excellence

The ninth-generation NT9300 offers the flexibility, gauge capability and rock-solid reliability to support 24/7 production. With push-button simplicity and fast data acquisition, the NT9300 enables process development and quality control for demanding high-throughput manufacturing. Veeco's patented dual-LED source enables a broad array of measurements. A white LED provides stable vertical scanning interferometry (VSI) mode measurements, while a dedicated green LED powers ultra-high precision phase shifting interferometry (PSI) mode measurements. Together, these provide an optimal range for a vast array of materials and applications.

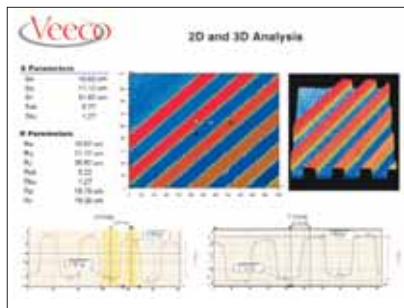


WYKO NT9800

World's Most Capable Optical Profiler

The ninth-generation NT9800 is simply the most powerful profiler available today, combining 80 microns per second scan speed, a 10 millimeter vertical scan range, and full automation for demanding research and production applications. Sharing the basic attributes of the NT9300, the NT9800 adds a unique-to-Veeco internal reference signal that enables real-time, continuous calibrating feedback over the entire scan range. This feature minimizes dependence on operator skill while reducing the effects of environmental and/or mechanical instability for truly unmatched accuracy.

Quantify and Visualize with Comprehensive Analysis Software



Customizable output screen includes 2D plot, X and Y cross-sections, 3D plot, and R and S surface parameters.

Top cover image: Experimental clutch plate design, 1 mm x 1.2 mm FOV. (Courtesy Steel Parts, Inc.)

Middle cover image: Syringe tip roughness, 230 μ m x 300 μ m FOV.

Bottom cover image: Salient type micro-motor, 230 μ m x 304 μ m FOV. (Courtesy CNRI MEMS Exchange)

Note: Specifications are subject to change without notice.

WYKO VISION

Veeco's Vision[®] analysis software provides thorough computational analyses, furnishing hundreds of parameters and analysis tools—an extensive software toolkit for lab and production. Windows[®]-based Vision includes Wizards, On-Line Help, and customization functions that speed operation and reduce the learning curve.

STATISTICAL DATABASE

Define databases from the extensive list of analysis parameters. Automatic data logging and pass/fail criteria give real-time feedback. Results can be easily exported for data management and SPC.

CUSTOMIZABLE RESULTS

Utilize an intuitive, easy-to-use editor to design custom output screens. User-configurable menus and toolbars let you match Vision to the way you work.

PRODUCTION-READY

Execute single measurements and production runs from a simple toolbar. Password capability allows operators to perform assigned tasks while protecting data and the operating system.

FLEXIBLE OPTIONS

Optional analysis and communication packages extend the functionality of NT Series instruments, letting you remotely control measurements and automation, generate custom parameters, and more:

- Stitching for large area measurements
- Film Analysis for thick and thin film characterization
- SureVision for template-based region identification and tracking
- Optical Package for characterizing optical grade surfaces
- Data Storage Package for measuring hard disk components
- MATLAB for creating custom analyses and parameters
- TCP/IP for remote system control.



For more information visit www.veeco.com
or call 800-366-9956

B506, Rev A7

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Worldwide Customer Support from the Industry Leader

Veeco Instruments Inc. manufactures enabling solutions for customers in the HB-LED, solar, data storage, semiconductor, scientific research and industrial markets. We have leading technology positions in our three businesses: LED & Solar Process Equipment, Data Storage Process Equipment, and Metrology Instruments. Veeco's manufacturing and engineering facilities are located in New York, New Jersey, California, Colorado, Arizona, Minnesota and Massachusetts. Global sales and service offices are located throughout the U.S., Europe, Japan and APAC.