



ContourX-500 3D Optical Profilometer

- Fully Automated Benchtop for 3D Metrology

The ContourX-500 Optical Profilometer is the world's most comprehensive automated benchtop system for fast, non-contact 3D surface metrology. Incorporating Bruker's proprietary tip/tilt optical head, the system is fully programmable to measure surface features over a range of angles while minimizing tracking errors. The gage-capable ContourX-500 boasts unmatched Z-axis resolution and accuracy, and provides all of the industry-recognized advantages of Bruker's white light interferometry (WLI) floor-standing models in a much smaller footprint. Utilizing the industry's most-advanced user interface, ContourX-500 provides intuitive access to an extensive library of pre-programmed filters and analyses. Along with its new USI universal scanning mode, the profiler is easily customized for the widest range of complex applications, from QA/QC metrology of precision machined surfaces and semiconductor processes to R&D characterization for ophthalmics and MEMS devices.

Most Advanced Benchtop Design for Unmatched 3D Metrology

- Industry-best Z resolution independent of magnification
- Advanced automation configured with encoded XY stage, auto tip/tilt head, and auto intensity
- Integrated air isolation in a space-efficient footprint

Superior Measurement and Analysis

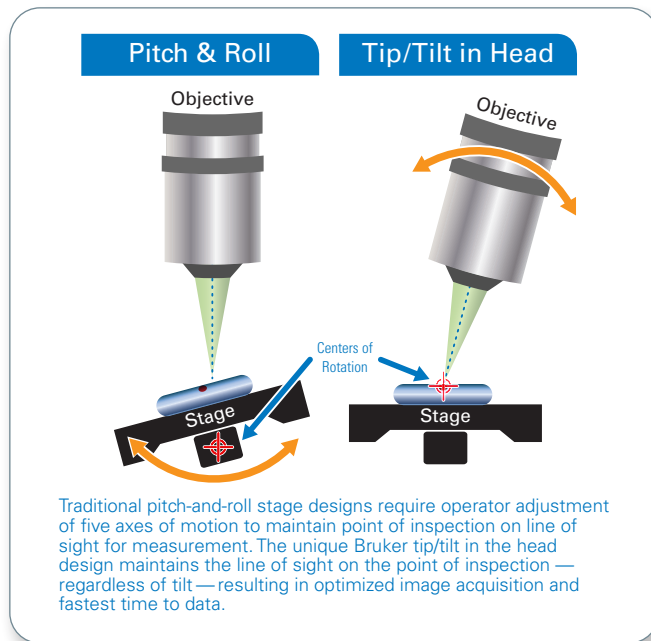
- Easy-to-use interface for quick and accurate results
- Wide range of automation features to tailor measurement and analysis routines
- Most extensive library of filters and analysis options
- Customized analysis reporting to industry standards, such as ISO 25178, ASME B46.1, ISO 4287)

Advanced Automation

Bruker's proprietary tip/tilt in the head provides unmatched user flexibility for production setup and inspection. By coupling the auto tip/tilt functionality with the optical path in the microscope head, Bruker has coupled the point of inspection to the line of sight independent of tilt. This results in less operator intervention provides the maximum reproducibility. The combination of this feature with automated staging and objectives makes the ContourX-500 ideally suited to "measure-on-demand" industrial requirements, all within a compact footprint.

Unmatched Value and Analysis

With thousands of customized analyses and Bruker's simple-to-use, yet powerful VisionXpress™ and Vision64® user interfaces, the ContourX-500 is optimized for productivity in the lab and on the factory floor. This unique hardware and software combination provide streamlined access to highly repeatable and high-throughput metrology measurement over-classing comparable metrology capabilities.



ContourX-500 Specifications

Max. Scan Range	≤10 mm
Vertical Resolution ¹	<0.01 nm
Lateral Resolution	0.38 μm min (Sparrow criterion); 0.13 μm (with AcuityXR®)
Step Height Accuracy ²	<0.75%
Step Height Repeatability	<0.1% 1 sigma repeatability
Max Scan	37 μm/sec (with standard camera)
Reflectivity Range	0.05% to 100%
Max. Sample Slope	≤40° (shiny surfaces); ≤87° (rough surfaces)
Sample Height	≤100 mm (4 in.)
XY Sample Stage	150 mm (6 in.) encoded automation stage
Z Focusing	Automated
Tip/Tilt Function	±5° automated in head
Optical Metrology Module	Patented dual-color LED illumination; Single-objective adapter; Optional automated or manual turret; Optional motorized or manual discrete modules
Objectives	Parfocal: 2.5X, 5X, 10X, 20X, 50X, 115X; LWD: 1X, 1.5X, 2X, 5X, 10X; TTM: 2X, 5X, 10X, 20X; Bright Field: 2.5X, w5X, 10X, 50X
Available Zoom Lenses	0.55, 0.75X, 1X 1.5X, 2X
Camera	Monochrome (standard) or color (optional); 5 MP with 1200x1000 data array
Software System	Vision64 and VisionXpress Analysis Software on Windows 10 OS; 64-bit
Software Packages	USI; Advanced PSI; Production Mode; VisionMAP; AcuityXR®; Optical Analysis; SureVision; Film; MATLAB; SDK, TCP/IP
Automation	Advanced automated stitching, scatter, and grid automation standard with encoded motorized XY stage; auto focus; auto intensity; auto saving; on-fly analysis; and recording into database
Calibration	Via NIST/PTB traceable step height and lateral ruler standards
System Footprint	480 mm (W) x 604 mm (D) x 700 mm (H)
Weight	70 kg
Warranty	12 months

¹ As demonstrated by taking the one sigma Sq value of 30 PSI repeatability measurements on an SIC reference mirror.

² Absolute accuracy for step heights 8 μm and higher.

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