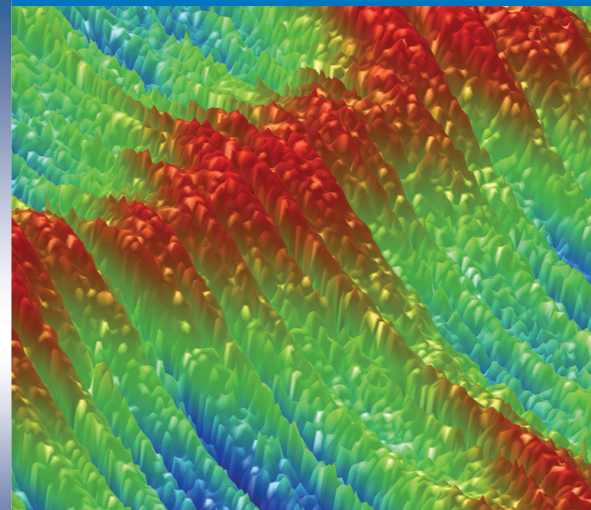
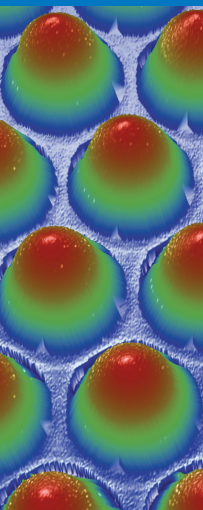




ContourGT 3D Optical Microscopes

- Unprecedented Resolution

ContourGT — 30 Years of Non-Contact Surface Metrology Innovation

The ContourGT® Family combines advanced 64-bit, multi-core operation and analysis software, patented white light interferometric (WLI) hardware, and unprecedented operator ease-of-use to deliver the most advanced 3D optical surface profilers ever developed. Bruker's tenth-generation surface profilers provide fast, sub-nanometer resolution metrology over large fields of view, with flexible sample setup and industry-leading repeatability. The ContourGT Family is the most comprehensive and intuitive 3D surface metrology platform available today for research, production and quality control applications.

Unmatched Measurement Capabilities with Best Lateral and Vertical Resolution over Industry's Largest Field of View

- Magnifications from 0.5X to 230X enable characterization of a wide range of surface shapes and textures
- Sub-nanometer to over 10mm vertical range at any magnification delivers unparalleled measurement flexibility
- R&D 100 Award-winning AcuityXR™ measurement capability provides unmatched lateral resolution

Robust Metrology Hardware for Enhanced Reliability and Repeatability in Production Environments

- Patented dual-source illumination with super high-brightness LEDs provides superior measurement quality and magnification flexibility
- Optimized hardware improves vibration tolerance and gauge R&R capability
- Patented self-calibration capability on select models ensures tool-to-tool correlation and measurement accuracy and repeatability

64-Bit, Multi-Core Processor with Vision64™ Software for Accelerated 3D Surface Measurement and Analyses

- Advanced architecture yields order of magnitude increase in data processing capacity
- Parallel processing using multi-core optimization and other techniques provides up to 10x higher throughput on critical metrology analyses
- Unmatched stitching capability seamlessly synthesizes thousands of individual datasets into one contiguous image

Highly Intuitive User Interface with Best-in-Class Ease of Use, Automation, and Analysis

- Streamlined user interface simplifies measurement and data acquisition to increase system and personnel efficiency
- Unique visual workflow provides intuitive access to an extensive library of filters and analysis options
- Customized reporting distills analysis data for customer-specific requirements

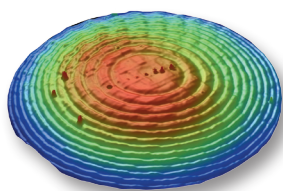


Maximum Surface Capability with Application-Specific Customization

The ContourGT Family features industry-leading measurement scope and flexibility to provide quantified 3D surface characterization for an extremely wide range of surfaces, from rough to smooth, hard to soft, adhesive, deflectable or otherwise difficult to measure. With its uniquely intuitive user interface and extensive automation features, the ContourGT 3D optical microscopes can be tailored to meet the needs of virtually any surface metrology application.

Ophthalmic Contact and Intraocular Lenses

Customized analyses and automation for optics maximize throughput and allow calculation of Zernikes, aspheric coefficients, point-spread function and more.

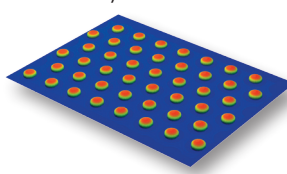


Stitched measurement of a bifocal contact lens showing form.



High-Brightness LEDs

ContourGT provides high-throughput, nondestructive measurements for PSS height, pitch and width, as well as wafer and Epi layer roughness, substrate bow, and film thickness to improve yield and ensure LED efficiency and color consistency.

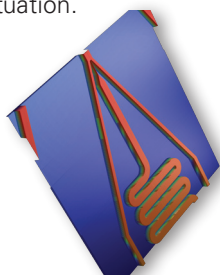


Topography of features on a patterned sapphire substrate wafer.

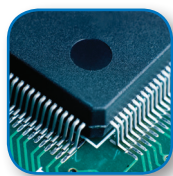


Micro-Electro Mechanical Systems (MEMS)

ContourGT measures microfluidics and MEMS devices throughout the manufacturing process, from wafer to final test, even through transparent packaging and during device actuation.

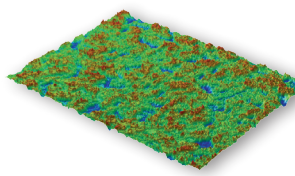


3D investigation of microfluidics features.



Solar

ContourGT calculates 3D surface texture parameters with proven correlation to photovoltaic efficiency to enhance yield and performance in solar cell manufacturing.

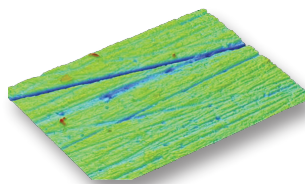


3D characterization of monocrystalline solar cell.



Precision Machined Components

ContourGT systems robustly determine surface finish, critical angles, spacing, radii, and other dimensions to improve manufacturing of high-tolerance components.

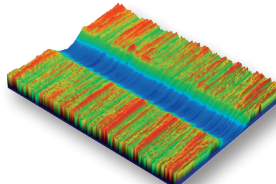


Topography map of machined surface shows scratches and defects.



Tribology and Corrosion

ContourGT topographic imaging provides quantitative surface data to facilitate understanding of friction, corrosion and other wear mechanisms for life-cycle and QA/QC.



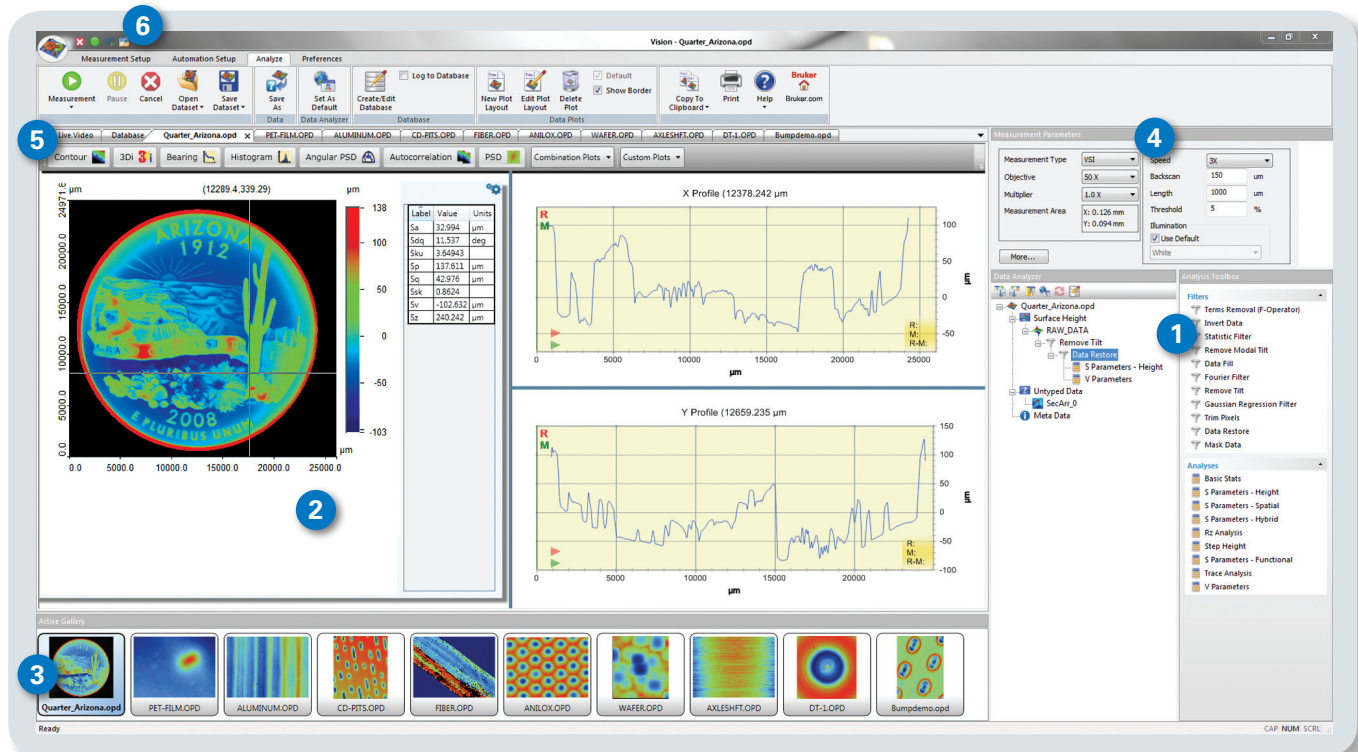
Wear scar in metal showing minor debris deposition on sidewall.



3D Surface Metrology

New Benchmark for Operation and Analysis

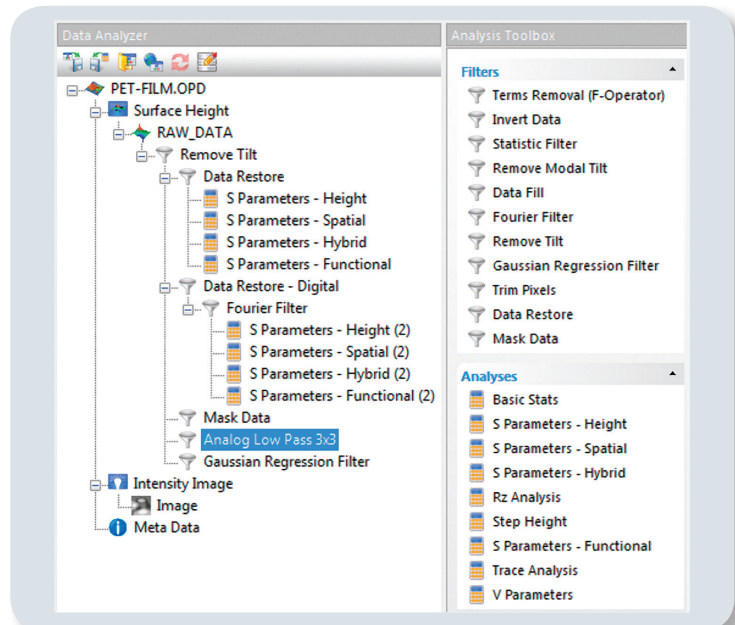
Today's sophisticated metrology technology requires advanced software that is powerful, user-friendly, and capable of addressing specific measurement requirements. The new Vision64™ Operation and Analysis Software provides the industry's most functional and streamlined graphical user interface, combining intelligent architecture with intuitive visual workflow and extensive user-defined automation capabilities for fast and comprehensive data collection and analysis.



Vision64 GUI — Unmatched Functionality and Ease of Use

1 The Data Analyzer and Analysis Toolbox

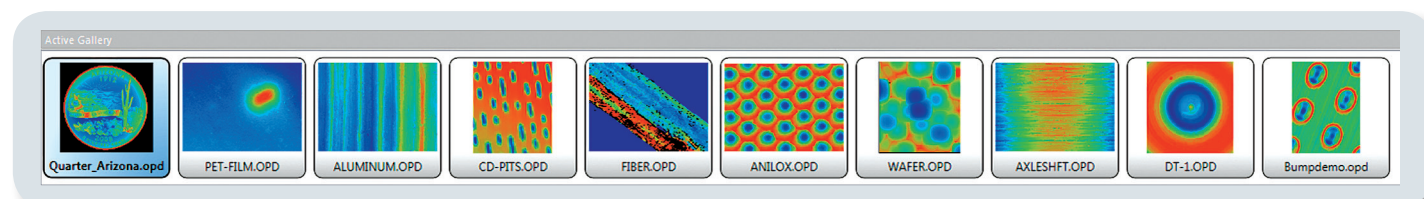
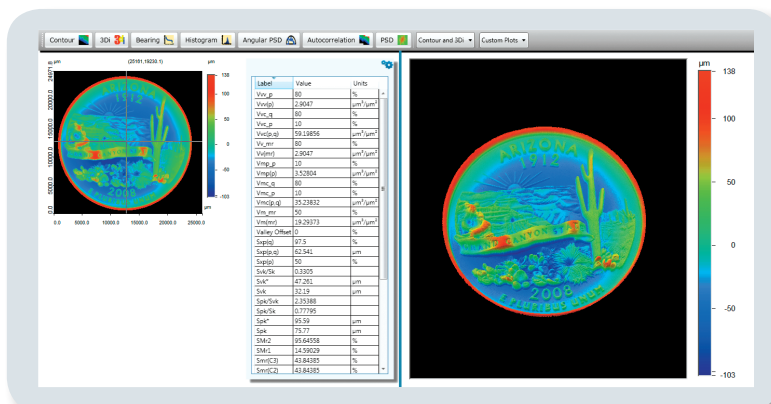
epitomizes the power and simplicity of Vision64's design. The Data Analyzer serves as a visual workflow tree, where each node either modifies the data output or performs a specific analysis. In the Analysis Toolbox, ISO-compliant filters, such as Robust Gaussian and Ball filters, combine with masking and shape removal to allow extraction of roughness, waviness or form. Comprehensive yet intuitive surface analyses make calculation of key attributes robust and accurate across a wide range of applications. Further customization and additional capabilities are provided through optional software packages, such as Optical Analysis, SureVision, and MATLAB scripting.



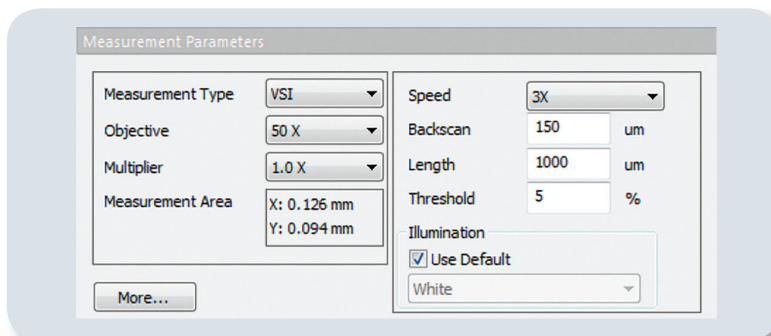
Powered by Vision64

2 The Data Visualization Window accesses the most common plot objects with push-button convenience, from 2D and 3D analyses to bearing ratio and power spectral density displays. Customizable plots allow the operator to combine plot types and perform reporting functions, such as adding text and graphics. Data parameter tables are completely configurable and sortable in seconds.

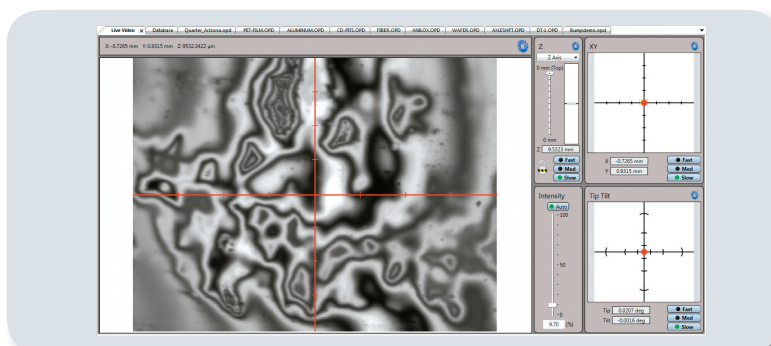
3 The Active Gallery displays all open datasets in Vision64. Selecting a dataset from the gallery activates its Data Visualization Window and corresponding Data Analysis workflow. The tabbed measurement management feature minimizes operator confusion and time to results.



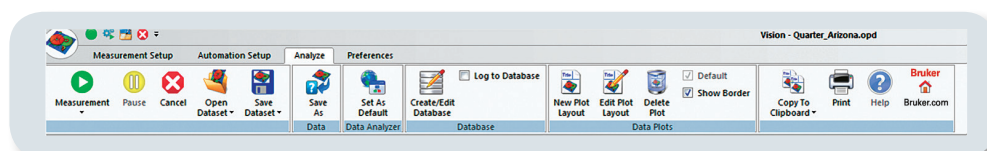
4 The Measurement Parameters Window conveniently keeps the most common measurement parameters always visible at the top right of the interface. Current measurement mode, relevant options, optics selections, and field of view size are all readily monitored and adjustable.



5 The Live Video Window puts X, Y and Z stages, tip-tilt, and intensity controls at the operator's fingertips. Pushbutton auto intensity properly sets light level in seconds while maintaining active adjustment. This ensures measurement consistency scan after scan, even among multiple operators.



6 The Toolbar incorporates Windows® 7 functionality and features, including a ribbon design with large intuitive icons and multifunction button controls. The most common system functions are always visible on the left side of the toolbar. Vision also utilizes custom, quick-access functionality to tailor the toolbar to your individual routines and analyses.



Advanced Features for High Throughput Automation and Quality Control

The ContourGT 64-bit, multi-core processor and Vision64 software deliver up to 10x greater throughput and capacity than other metrology platforms, enabling rapid in-line analysis capabilities and manufacturing reliability. The ContourGT-X3 and -X8 systems incorporate both standard and customized automation features for increasing capability and operator ease of use for a wide range of production floor applications.

Advanced Production Interface allows adaptation of ContourGT to almost any production environment and automated process. The interface provides tools to customize process workflow, automate mapping, and load measurement recipes. Software prompts and password-protected entries eliminate human error and provide robust measurement performance.

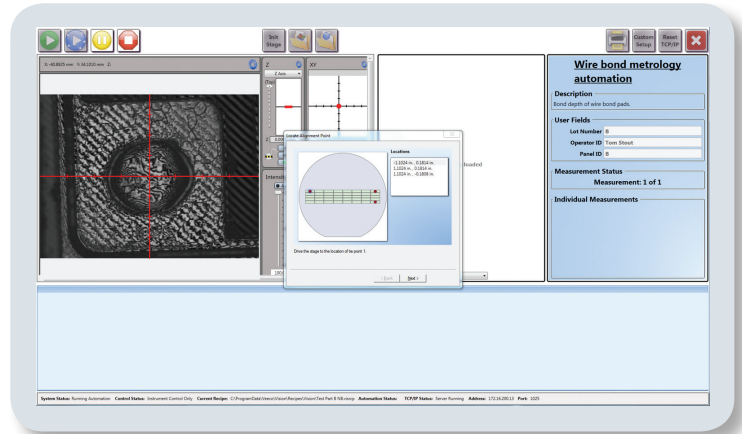
Automation Scripting has been designed with ease of use as the top priority. X-Y grid automation contains multiple improvements for wafer/die measurement scripting. X-Y scatter automation enables measurement on samples with non-regularly spaced areas of interest. A variety of automation routines and sample traversal patterns are available.

Automation Ready Configuration includes everything necessary to bring the full measurement capabilities of the ContourGT-X8 to the production floor. The system comes complete with

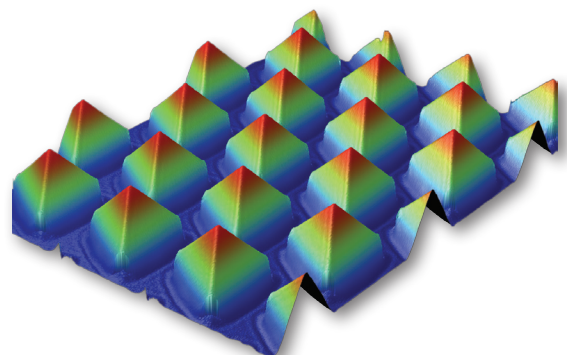
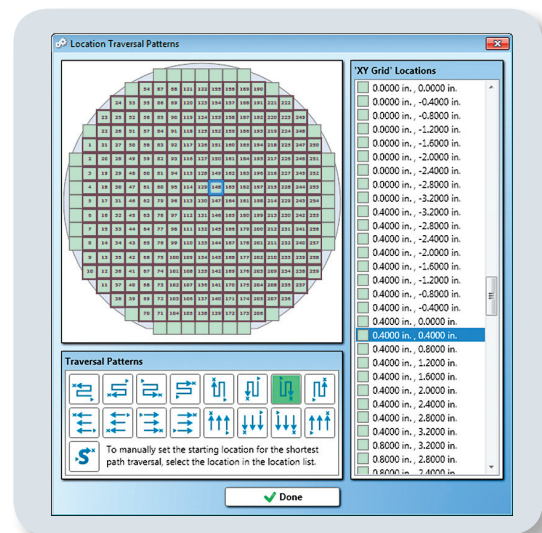
- Air table stabilizer kit for enhanced X,Y,Z wafer placement accuracy
- Optimization of PDU, EMO and vacuum systems for integration
- Modified system panels for autoloader integration
- Modified vacuum chucks for autoloader end-effector compatibility
- TCP/IP Run-time Control Server (V64-TCPIP-CONTROL)

Patterned Sapphire Substrate Package

enables precise measurement and analysis of PSS structures used in the manufacture of high-brightness LEDs. This ContourGT package incorporates Bruker's proprietary PSS measurement mode, as well as a 115X objective, 2X FOV, SOA, PSS dedicated software, and a reference 2-inch PSS wafer.



The fully customizable advanced production interface provides exceptional operator and automation ease of use.



Ten Generations of Technology Innovation

The ContourGT Family combines decades of industry-leading design functionality with dramatic advances in measurement hardware to deliver the most accurate and repeatable optical profiling performance available. Bruker's optical surface profiling systems have a proven track record of robust performance spanning three decades, with thousands of installations in settings ranging from research labs to manufacturing fabs.

- **AcuityXR™ Enhanced-Resolution Microscopy**

R&D 100 Award-winning AcuityXR combines patent-pending hardware and software to enable ContourGT systems to break the optical diffraction limit and deliver lateral resolutions that were previously considered impossible.

- **Ultra-Stable Platforms**

All ContourGT profilers employ extremely stable opto-mechanical designs to provide the highest data quality even in difficult environments. Several models additionally contain an integrated isolation system and specialized castings to prevent the environment from reducing measurement quality. The result is fast, accurate, gage-capable metrology.

- **Industry-Leading Opto-Mechanical Design**

Bruker's systems incorporate patented dual-LED illumination to provide excellent intensity and uniformity on all sample types at all magnifications. The systems deliver uncompromised accuracy and repeatability over the entire 10mm scan range. Interchangeable, fixed-zoom lenses provide maximum magnification stability and resolution.

- **Automatic Self-Calibration***

Select models of the ContourGT Family include Bruker's patented automatic self-calibration capability with an internal primary standard that provides the ultimate in closed-loop scanner performance. This subsystem includes a laser interferometer that self-calibrates the system upon start-up, and then continuously monitors and corrects each measurement for absolute accuracy and superior repeatability.

- **Tip-Tilt Cradle***

Bruker's tip-tilt cradle design tilts the optics, not the sample. By doing this, the measurement sample always stays in focus and within the measurement field of view, ensuring consistent operator ease of use.



- **Automated Stages**

The ContourGT-X series offers standard 200-millimeter (8-inch) staging capability with an optional 300-millimeter (12-inch) stage, both with 0.5-micrometer encoders. The ContourGT bench-top systems offer the option of either 150mm (6-inch) manual or automated stages. Stages are controlled via an intuitive graphical user interface or via an available XY joystick and Z focus wheel.

- **Turret**

An optional motorized turret can accommodate up to 5 interferometric objectives, from 1x to 115x. The turret design ensures that your measurement feature stays in focus and centered, even when switching objective magnifications.

- **Operator-Assist Lamp***

The back of the vibration isolation casting is equipped with an LED light source to help with sample focus and operator visibility.

*These options are available on the ContourGT-X Series only.

ContourGT Specifications

			
	ContourGT-K0 Series	ContourGT-K Series	ContourGT-X Series
Form Factor	Bench top; Vibration isolation optional	Bench top; Vibration isolation optional	Integrated air table optimized for vibration isolation; Optional Ergotron® arm for keyboard and monitor
XY Sample Stages	150mm (6in) manual; ±6° manual tip-tilt in system base Optional programmable 150mm (6in) motorized	150mm (6in) manual; ±6° manual tip-tilt in system base Optional programmable 150mm (6in) motorized	200mm (8in) programmable with encoders; Optional 300mm (12in) programmable with encoders; ±6° tip-tilt in system scanning head
Z Focusing Stage	100mm manual Z axis	Motorized, computer controlled; Optional joystick controller	Motorized, computer controlled; Optional joystick controller
Optical Assembly Module	Latest generation dual-LED illumination source; Single fixed FOV	Latest generation dual-LED illumination source; Motorized FOV carousel; Automated illumination selection	Latest generation dual-LED illumination source; Motorized FOV carousel; Automated illumination selection
Objectives	Parfocal: 2.5x, 5x, 10x, 20x, 50x; LWD: 2x, 5x, 10x	Parfocal: 2.5x, 5x, 10x, 20x, 50x, 115x; LWD: 1x, 1.5x, 2x, 5x, 10x; Through Transmissive Media: 2x, 5x, 10x, 20x	Parfocal: 2.5x, 5x, 10x, 20x, 50x, 115x; LWD: 1x, 1.5x, 2x, 5x, 10x; Through Transmissive Media: 2x, 5x, 10x, 20x
Objective Mounts	Single objective adapter or 4-position manual turret	Single objective adapter or 4- or 5-position motorized turret	Single objective adapter or 4- or 5-position motorized turret
Processor	Multi-core, Windows® 7.0	Multi-core, Windows® 7.0	Multi-core, Windows® 7.0
System Software	Vision64 Operation and Analysis Software	Vision64 Operation and Analysis Software	Vision64 Operation and Analysis Software
Optional Software Analysis	Production Interface	AcuityXR, Production Interface, MATLAB®, SureVision, TCP/IP Control, ThickFilm, Annular, Optical	AcuityXR, Production Interface, MATLAB®, SureVision, TCP/IP Control, ThickFilm, Annular, Optical
Other Automation	Auto intensity; Camera autofocus	Auto intensity; Camera autofocus; Optional high-speed autofocus; Optional stitching; Optional X-Y automation	Auto intensity; Camera autofocus; X-Y automation; Optional high-speed autofocus; Optional stitching
Calibration	Via traceable step standards	Via traceable step standards	Via traceable step standards; X8: automatic, continuous calibration via internal laser standard
Z Scan Range	0.1nm to 10mm	0.1nm to 10mm	0.1nm to 10mm
Max. Scan Speed	28.1µm/sec	28.1µm/sec	X3: 28.1µm/sec; X8: 92.5µm/sec
Max. Sample Weight	4.5kg (10lbs)	4.5kg (10lbs)	45kg (100lbs)
Warranty	18 months parts and labor	18 months parts and labor	18 months parts and labor

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

Cover Images:

Foreground: ContourGT 3D Optical Microscopes. Background: (left) 3D optical surface profile of HB-LED PSS features and (right) cam chatter.

Brüker Nano Surfaces Division is continually improving its products and reserves the right to change specifications without notice. AcuityXR, ContourGT, and Vision 64 are trademarks of Brüker Corporation. All other trademarks are the property of their respective companies.

Brüker Nano Surfaces Division

Tucson, AZ USA

Phone +1.520.741.1044/800.366.9956

productinfo@brüker-nano.com

www.brüker-axs.com



Get the free mobile app for your phone
<http://gettag.mobi>