

## Dektak XTL Stylus Profiler System

- Gage-Capable QA/QC Profiling for Optimal 300mm Performance

# Dektak XTL Stylus Profiler System

Bruker's new Dektak XTL™ stylus profiler accommodates samples up to 350mm x 350mm, bringing legendary Dektak® repeatability and reproducibility to large-format wafer and panel manufacturing. The Dektak XTL features a small footprint with pneumatic passive isolation and a fully enclosed workstation with a wide, easily accessible interlocking door, making it ideal for today's demanding production floor environments. Its dual-camera architecture enables enhanced spatial awareness, and its high level of automation maximizes manufacturing throughput. Bruker's exclusive Vision64® Production Interface with pattern recognition can be scaled to meet your needs and makes data collection an intuitive and repeatable process, minimizing operator-to-operator variability.



Though fully optimized for constant production-floor use and maximum throughput in process development and QA/QC applications, the Dektak XTL is also specifically designed to be the industry's easiest to use stylus profiler.

## Dektak XTL Delivers

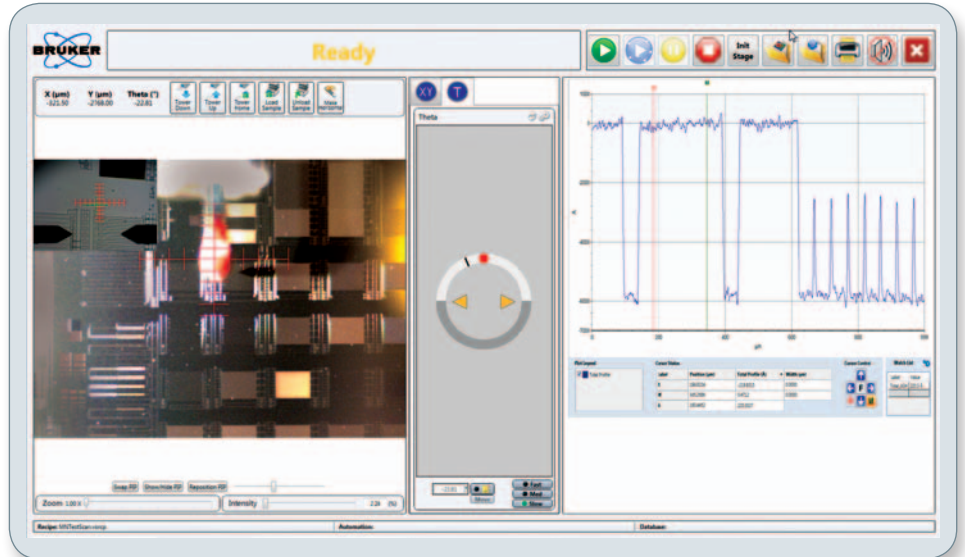
- Bruker-Exclusive Dual Camera Control™
  - Navigate to points of interest faster by clicking in live video
  - Quickly orient sample to be measured by selecting two points in the live video (Make Horizontal)
  - Simplify measurement setup by point-and-click scan start and end positions in live video (Teach)
- Robust Automation Setup and Operation
  - Accurately program fiducials and unlimited measurement sites via 300mm, automated encoded XY stage and 360-degree theta
  - Minimize errors utilizing Vision64 Production Interface with pattern recognition
  - Program custom user prompts as well as other meta data into your recipe and store to the database
- Easy Analysis and Data Collection
  - Easily automate analysis routines using Quick Analyzer, which supports most frequently used analyses
  - Focus your analysis to report only the features needed on complex samples using Step Detection
  - Simplify data analysis by giving each measurement site unique name and automatically log to database



# • Legendary Dektak Performance for Large-Sample Manufacturing

## Industry's Best Automation and Analysis Software

New software features make the Dektak XTL the most powerful, easiest to use stylus profiler available. The system utilizes Vision64 software that is fully compatible with Bruker's optical profiler line. The Vision64 software enables unlimited measurement sites, 3D mapping, and highly customized characterization with hundreds of built-in analysis tools. Also use Vision Microform software to measure shapes such as radius of curvature. Use pattern recognition to minimize operator error and enhance measurement location accuracy. Data collection and 2D and 3D analysis are in one software package with an intuitive flow. Each system comes with a Vision software license which can be installed on a separate PC with Windows 7 OS so data analysis and reports can be created at your desk.



Vision64 Production Interface.

## Unmatched Stylus Technology

The Dektak XTL also incorporates over 40 years of stylus expertise and application customization for production applications to meet the stringent industry roadmaps of both today and tomorrow.

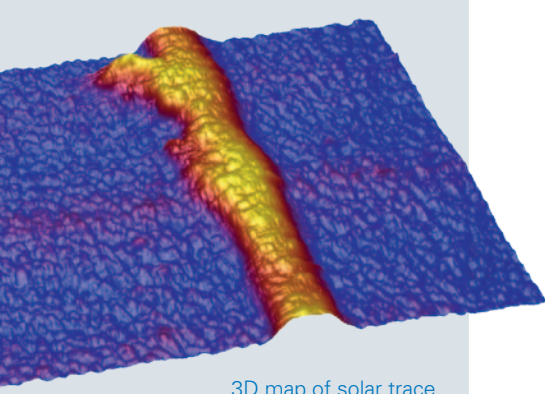
The 300-millimeter, high accuracy encoded XY stage gives manufacturers a reliable tool to meet stringent gage R&R requirements. Dektak Dual Camera Control with top and high-magnification side-view cameras offers enhanced spatial awareness, and point-and-click positioning in the live video allows operators to quickly place samples at the right location for quick and easy measurement setup and automation programming. The system's highly accessible interlocked door provides safe and easy loading/unloading. Other hardware features include:

- Single-arch architecture and integrated isolation for extremely low noise floor
- Quick-change self-aligning stylus
- High-accuracy encoded XY stage for faster automated data collection
- N-Lite low force with Soft Touch technology and 1mm measurement range can be used simultaneously to measure delicate and high-vertical range samples

Operator loading 300mm wafer onto Dektak XTL.







3D map of solar trace.

## Dektak XTL Specifications

Measurement Technique	Stylus profilometry (contact measurement)
Measurement Capability	2D surface profile measurements; 3D measurements
Sampling Viewing	Side view camera: 2.5mm x 4.25mm; Top down camera: 11.5mm x 15.5mm
Stylus Sensor	Low Inertia Sensor (LIS 3) with N-Lite+ low force technology
Stylus Force	0.03mg to 15mg
Stylus Options	Stylus radius options from 50nm to 25µm; Custom tips available upon request
Sample XY Stage	Motorized, high-accuracy encoded 300mm XY stage
Sample R-Theta Stage	Motorized, continuous 360°
Computer System	64-bit multi-core parallel processor; Windows 7 OS; Optional 23in. flat panel display
Software Included	Vision64 operation and analysis software: Stress Measurement; Stitching; 3D Mapping; Microform; Step Detection; Radial Mapping; Production Interface; Manual Pattern Recognition
Software Options	Automated Pattern Recognition; Advanced Production Interface
Vibration Isolation	High-performance vibration isolation, passive pneumatic air isolators
Scan Length Range	300mm
Data Points Per Scan	120,000 maximum
Maximum Sample Thickness	50mm
Maximum Wafer Size	300mm
Maximum Sample Size	350mm
Step Height Repeatability	<5Å, 1 sigma on 0.1µm step
Vertical Range	1mm
Vertical Resolution	1Å max. (@6.55µm range)
Input Power	100 to 240VAC, 50 to 60Hz
Temperature Range	20° to 25°C (68° to 77° F) operational range
Humidity Range	≤80%, non-condensing
System Dimensions and Weight	978mm (38.5in.) W x 954mm (37.6in.) D x 1714mm (67.5in.) H; 272kg (600lbs)
Ergonomic Workstation	Optional Ergotron mobile workstation
Safety Compliance	CE, NRTL, S2, S8

### Critical Results for Large-Format Applications

With its unique combination of superior performance and ease of use, the Dektak XTL is the new QA/QC and research standard for industrial thin film deposition monitoring in touch-panel, solar, flat panel display, and semiconductor industries.

#### Wafer Applications:

- Step height for deposited thin films (metals, organics)
- Step height for resists (soft film materials)
- Etching rate determinations
- Chemical mechanical polishing (erosion, dishing, bow)

#### Large Substrate Applications:

- Printed circuit boards (bumps, step heights)
- Window coatings
- Wafer masks
- Wafer chuck coatings
- Polishing pads

#### Glass Substrate and Display Applications:

- AMOLEDs
- Step height measurements for LCD R&D
- Film thickness measurements for touch panels
- Thin film measurements for solar coatings

#### Flexible Electronic Films:

- Organic photodetectors
- Organic films printed on films and glass
- Copper traces for touch screens

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