

Cascade

PA200

200 mm Semi-automated Probe Systems

000111100010

➤ Overview

The PA200 Probe Station was designed to be a highly precise and flexible semi-automated test solution for wafers and substrates up to 200 mm. The PA200 gives you reliable probing and precise measurements on decreasing pad and feature sizes down to the submicron range. It is ideal for failure analysis (FA), RF and mm-wave applications up to 500 GHz, as well as for opto-engineering and MEMS tests.

To ensure maximum stability and precision, the PA200 relies on precisely machined components. The use of ground slides and ball-screw drives in closed-loop positioning with glass scales produce excellent performance. Based on your application needs, you can choose between vacuum, magnetic or dedicated high-frequency probe platens. In order to provide maximum flexibility, our modular design concept allows us to mount microscopes based on your needs. This gives you the freedom to upgrade your PA200 from a simple manual microscope stage to a fully programmable microscope with high magnification.

The powerful Velox™ probe station control software features easy on-screen navigation, wafer mapping, automation and seamless integration with analyzers and measurement software. It enables simple operation of motorized positioners and thermal systems. For a wide range of applications, the PA200 probe station powered by Velox software achieves high test efficiency.



➤ Features / Benefits

Flexibility	<ul style="list-style-type: none">• Ideal for FA, RF, opto-engineering and MEMS tests• Large number of accessories available, e.g. laser cutters, probe card holders, ShieldEnclosure™, emission microscopes• RF tests supported by wide range of probes and calibration tools, such as calibration tools and WinCal XE™ calibration software
Precision	<ul style="list-style-type: none">• Highest positioning accuracy• Ideal for small structures even down to submicron probing• Highly stable mechanics
Ease of use	<ul style="list-style-type: none">• Unique and easy to operate Velox probe station control software• Joystick controller with color display for full prober control (option)• Intuitive and ergonomic layout of system controls

> Specifications

Chuck Stage X-Y Movement

Travel range	200 mm x 200 mm
Resolution	0.5 μm
Repeatability	$\pm 1.0 \mu\text{m}$
Accuracy	$\pm 1.5 \mu\text{m}$
Planarity	8 μm

Chuck Stage Z Movement

Travel range for non-thermal chuck	20 mm
Travel range for thermal chuck	8 mm
Resolution	0.25 μm
Repeatability	$\pm 1.0 \mu\text{m}$

Theta Movement

Travel range	$\pm 6.0^\circ$
Resolution	0.0001 $^\circ$

Programmable Microscope Movement

Travel range	50 mm x 50 mm
Resolution	0.25 μm
Repeatability	$\pm 1.0 \mu\text{m}$
Accuracy	$\pm 2.5 \mu\text{m}$
Access lift	130 mm

Manual Platen Movement (optional)

Drive type	Compound knob
Coarse adjustment for non-thermal chuck	20 mm
Coarse adjustment for thermal chuck	10 mm
Contact / separation stroke	0.4 mm linear with 1 μm repeatability
Graphical user interface	Windows based

Remote Interfaces

PC	RS232, LAN, GPIB
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Utilities

Power	115 / 230 V, 50 / 60 Hz, 600 W (maximum 150 VA)
Vacuum	Less than 200 mbar abs
Compressed air	4 bar minimum

> Platform

Velox Probe Station Control Software

The PA200 probe station is equipped with Velox probe station control software. The Velox software provides all features and benefits required for semi-automated operation of the probe system, such as:

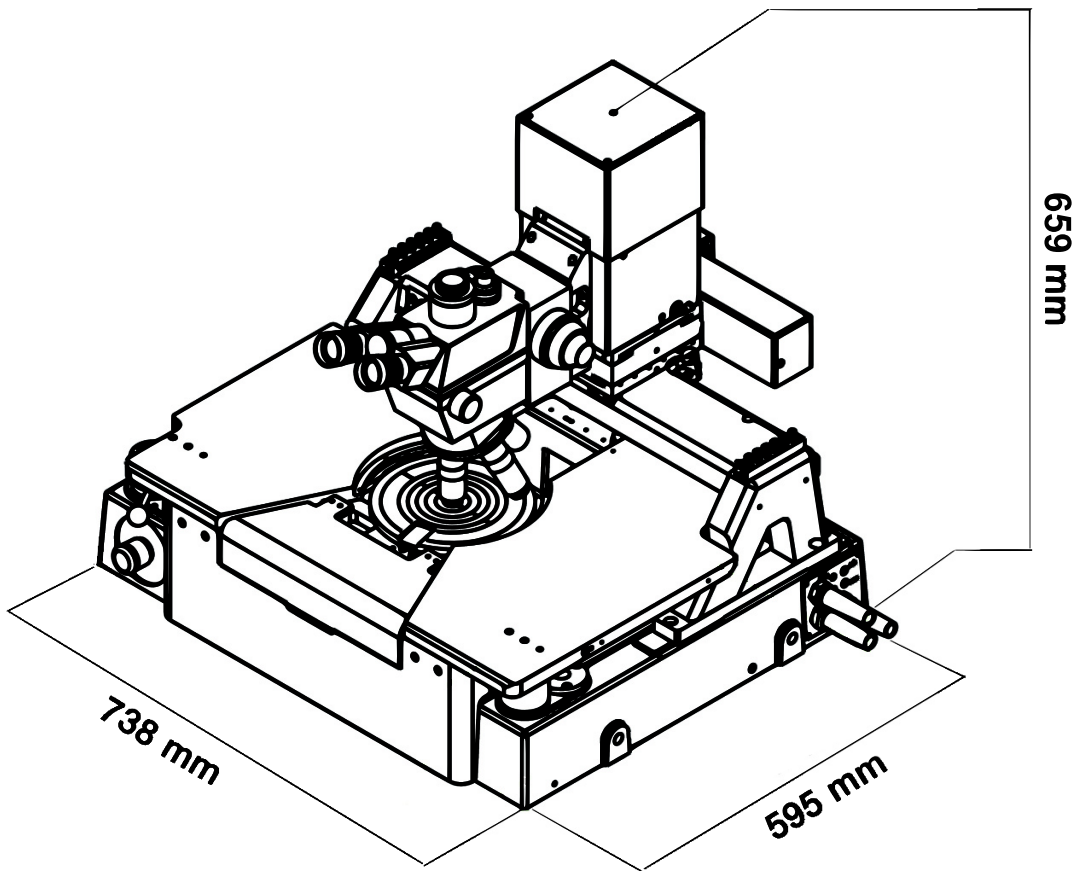
- WaferMap with Z-profiling, sub-die stepping, binning and other useful features
- Integrated thermal control
- CellView using stitched image of the full device to enable on-screen navigation within the die layout when using eVue
- Configurable user interface and programmable buttons

> Physical Dimensions

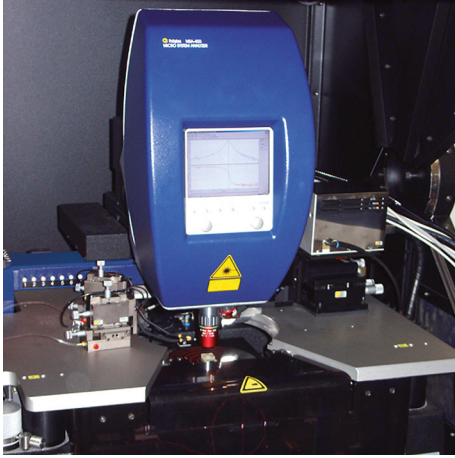
Weight

133 kg (mechanics) / 13 kg (electronics)

Dimensions



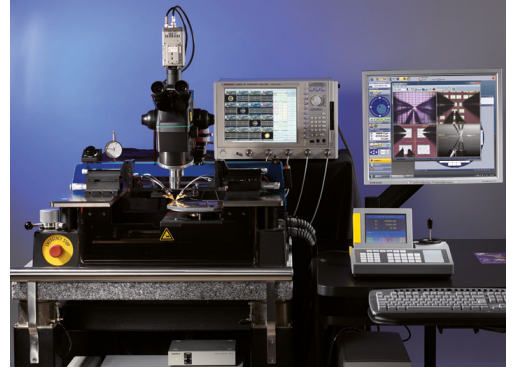
➤ Applications



Testing MEMS with the PA200 in a light-tight environment.



Failure analysis with the PA200 and a laser cutter.



Automated multiport on-wafer measurements with the PA200 and VNA.

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