Cascade

PA200DS BLUERAY

200 mm Semi/ Fully-automated Probe System

Overview

The PA200DS BlueRay from FormFactor was specifically designed for measurements requiring backside access to the wafer. The design allows you free access to both sides of the wafer, as well as high throughput due to a lightweight chuck design. The wafer itself can be fixed by vacuum or mechanically clamped to allow testing up to the substrate edge.

The system's precision ensures smooth probe landing with safe, repeatable electrical contact. In combination with the unique Z-profiling function, even extreme variations in height can be compensated. This reduces pad damage and easily allows devices to be bonded after testing, even with the thinnest of pads. At the same time, the systems's accuracy eliminates the need for a time-wasting probe mark inspection.

Flexibility and modularity are the keys for your production testing needs and has created a solution that allows adapting a wide range of instrumentation and accessories to the probe system. To further enhance productivity and ease-of-use, FormFactor has designed a communication between the hardware and software of the PA200DS-BR that accommodates high-speed communication using the Ethernet interface or an optional TTL interface.

Features / Benefits

High throughput	• Highest Z-axis resolution of any production probe system
Double-side probing	• Stable, Linux-based controller with optional TTL or GPIB interfaces • Manual or motorized holder for backside measurement equipment
Modularity	• Variety of wafer carriers, glass chucks, mechanical edge clamping solutions • Wafer handling robot can be docked onto probe system • Easy to integrate with ProberBench™ Operating Environmen • VisionModule™ available for automated testing processes
Cost effectiveness	• Interfaces to all major analysis instrumentation, optics software, and testers • Smallest footprint • Low cost of ownership • Fast return on investment • Grows with your requirements

Specifications*

Chuck Stage	
X-Y Movement	Closed-loop DC servo with linear encoder feedback
Travel / Resolution	205 mm x 205 mm / 1.0 µm
Repeatability / Accuracy	± 2.0 µm / ± 5.0 µm
Minimum cycle time	250 ms (1000 µm step size, 250 µm separation), depending on index and chuck configuration
Z Movement	DC servo with linear encoder feedback
Travel / Resolution	15 mm / 0.25 µm
Repeatability	± 1.0 µm
Theta Movement	DC servo with linear encoder feedback
Travel / Resolution	± 6.0° / 0.0001°
Utilities	
Power	115 / 230 V, 50 / 60 Hz, 600 W (maximum 1500 VA), depending on tool configuration
Vacuum	< 200 mbar abs., 8 mm
Compressed air	4 bar minimum, 8 mm
Microscope	Fits to video and stereo microscopes
Positioner Platen	Vacuum
Chucks	
Standard	200 mm stainless steel, RF capable with two integrated AUX sites
Thermal	200 mm, 25°C to 150°C (only PA200A BlueRay)
Optional Accessories	
BlueRay prober table	With optional shelf for measuring instrument, monitor and keyboard Optional VIT701 with vibration isolation
Wafer handling robot	One cassette for wafers from 50 mm to 100 mm or 75 mm to 200 mm, including cassette scanner and prealigner
Electronics interfaces	TTL, GPIB
Software	ProberBench CorePackage™ with WaferMap, VisionModule, VideoTracker™, Programmer Tools, ShapeTracker, Z-Profiling
Electronic/optical measuring	Fiber optic, integration sphere, large area detector
Backside equipment stage	Manual 10 mm x 10 mm x 10 mm or motorized 25 mm x 25 mm x 25 mm, for integrating sphere, fiber optics or customized equipment
CCD camera	B/W, color
Operating lamp	3 color
Light-tight enclosure	Local enclosure
Utility pumps	Vacuum, pressure or combinations

* *Data, design and specification depend on individual process conditions and can vary according to equipment configurations. Not all specifications may be valid simultaneously.*

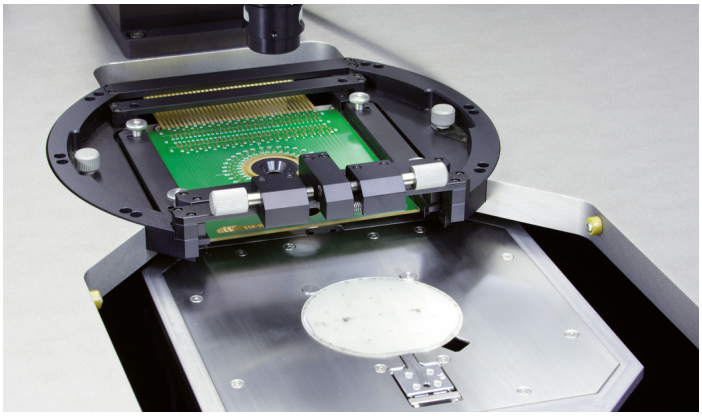
Physical Dimensions

Dimensions (WxDxH)	
X-Y Movement	700 mm x 880 mm x 750 mm
With wafer handling robot	1150 mm x 880 mm x 1500 mm (including table)
Electronics	450 mm x 400 mm x 230 mm
Joystick controller	280 mm x 250 mm x 140 mm

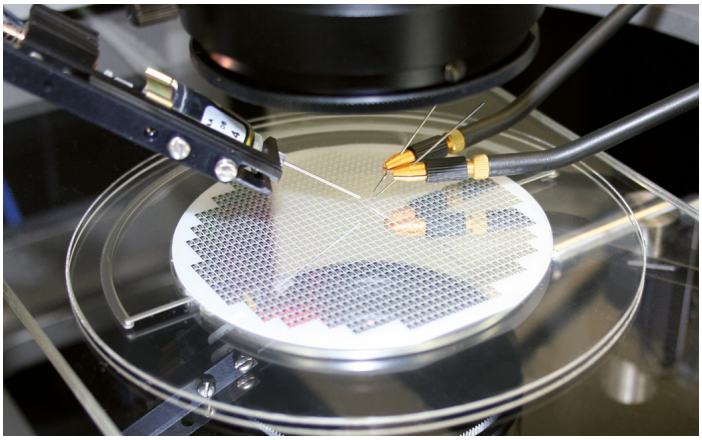
Weight	
Mechanics / Electronics	250 kg / 13 kg

Applications

AP200DS BlueRay, equipped with wafer handling robot and integrated alignment camera.



Mechanical wafer clamping for probing to the wafer's edge.



Vacuum wafer fixation on transparent glass chuck for fragile substrates.

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PA200DS-BR-DS-0419