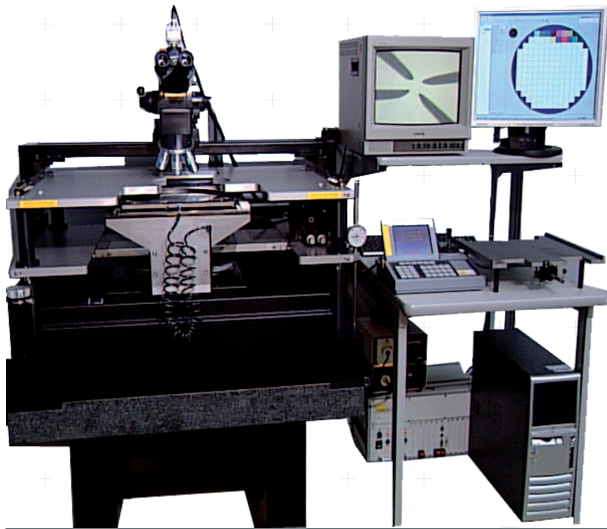


Cascade Microtech, Inc.

SPECIFICATION SHEET



For front- and
back-side probing

PA300DSP

300 mm Semi-automatic Probing System

The PA300DSP is the most precise and flexible semiautomatic double-side test solution for wafers and substrates up to 300 mm. It is ideal for all applications requiring access to both the top and back side of the wafer, such as failure analysis with emission microscopes, optoelectronic test (e.g. spectrum analysis), MEMS test (e.g. Si-microphones) and testing 3D stacks like through-silicon vias (TSVs).

The patented design of the probe station includes a unique chuck for handling fragile substrates and provides full access to the DUT from underneath or from the above. ProbeHeads™ and probe cards can be positioned separately or simultaneously on either side of the DUT. Thus, stimulus and the measurement of the output can be applied to the front and/or back side.

The PA300DSP can be equipped with a wide range of accessories, like laser-doppler vibrometers, integrating spheres, laser cutters or automated submicron PH600 ProbeHeads.

In combination with a high-resolution emission microscope such as those from Hamamatsu, the probe station becomes an integrated wafer-level emission microscopy system, offering highest-quality front and back side emission analysis.

The PA300DSP is controlled by the unique ProberBench™ Operating Environment. This system consists of an independent electronics rack, a color LCD joystick controller for full prober control with or without a PC, and an intuitive graphical user interface (GUI). ProberBench interfaces with test equipment and software from all leading vendors, and the specially-designed programmer tools allow you to write your own test application program. Our renowned ProberBench Operating Environment includes the Navigator, TableView, a graphical WaferMap, the SPECTRUM™ Vision System and the unique QuietMode™ technology which removes power from all motors to reduce electrical noise during measurement.

FEATURES AND BENEFITS

Flexibility	Patented design for front and backside inspection of the DUT
	Ideal for emission microscopy, opto, MEMS and TSV test
	Freedom to position ProbeHeads and probe cards (simultaneously)
	Large number of accessories available
Precision	Unique stability ensures highest positioning accuracy in the market
	Thermally stable granite base
	High-precision ball-screw drives
Ease of use	Simultaneous use of probe card and ProbeHeads
	Unique and easy to operate ProberBench Operating Environment
	Joystick controller with color display for full prober control - even without PC

SPECIFICATIONS*

Chuck Stage

Travel range in X and Y	300 mm x 300 mm
Resolution	0.5 μm
Repeatability / Accuracy	$< \pm 3 \mu\text{m}$ / $< \pm 5 \mu\text{m}$
Planarity	$< \pm 15 \mu\text{m}$

Z Movement

Travel range	15 mm
Resolution	0.25 μm
Repeatability	$\pm 1 \mu\text{m}$

Theta Movement

Travel	$\pm 4^\circ$
Resolution	0.0001 $^\circ$

Programmable Microscope Movement (recommended)

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

Manual Platen Movement

Contact / separation stroke	0.4 mm
Travel	26 mm

Remote Interfaces

PC	RS232, IEEE488, LAN, TTL, GPIB
Electronics	IEEE488, TTL, GPIB

Utilities

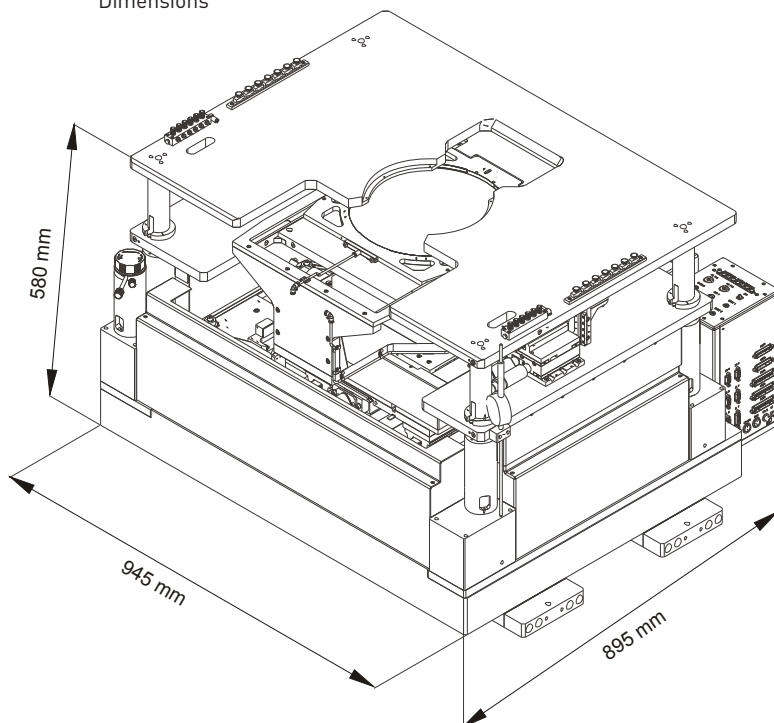
Power	115/230 V, 50/60 Hz, 600 W (maximum 1500 VA, depending on tool configuration)
Vacuum	Less than 200 mbar abs.
Compressed air	6^{-10} bar

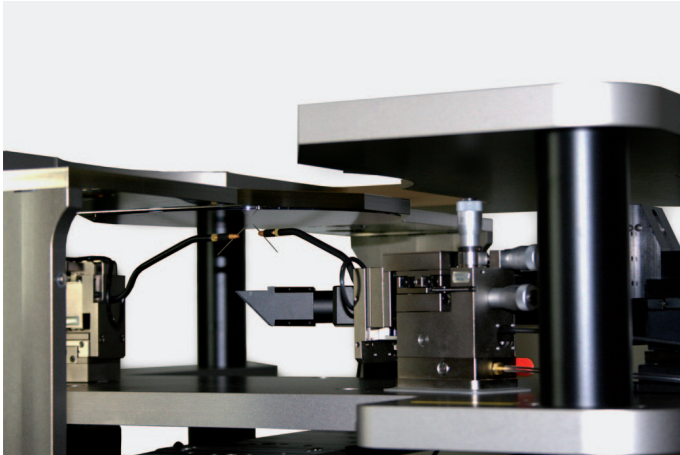
*Data, design and specification depend on individual process conditions and can vary according to equipment configurations.
Not all specifications may be valid simultaneously.

PHYSICAL DIMENSIONS

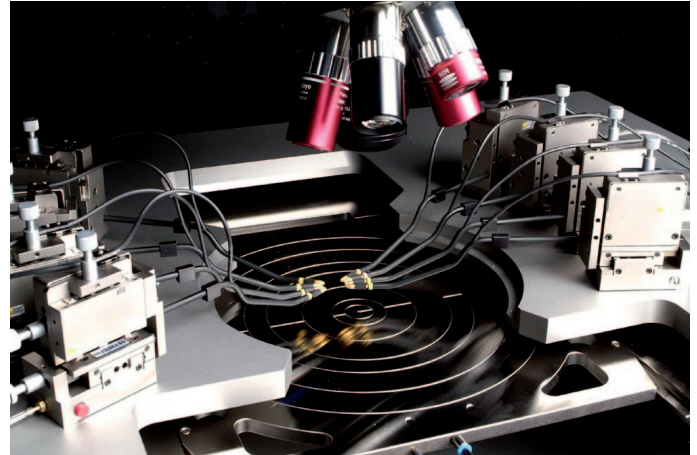
Weight ~ 825 kg (depending on tool configuration)

Dimensions

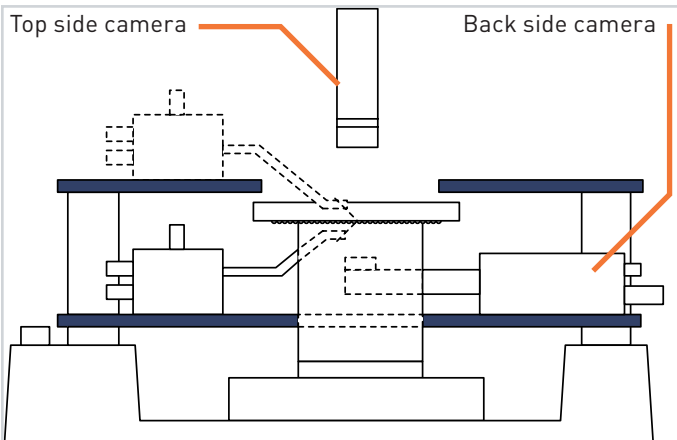




Electrical contact of the DUT from the back side: A back side camera is located beneath the chuck and views upward in order to position the probes.



Up to eight ProbeHeads can be placed on the PA300DSP.



Simultaneous electrical contact and observation of the DUT from the top and back side.

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Data subject to change without notice

PA300DSP-SS-0410

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