

PA300PS-MA

300 mm Semi-Automatic Probe System



DATA SHEET

The PA300PS-MA is the world's only analytical probe system for fine-pitch probing of pads down to $30\ \mu\text{m} \times 30\ \mu\text{m}$, verification of ball grid arrays and the most universal tool for wafer-level reliability (WLR) tests with 220 mm or 320 mm Celadon tiles. The semi-automatic probe system employs the powerful ProbeShield® technology, enabling accurate low-noise measurements of atto amps and femto farads. QuietMode™ technology safely removes all motor power during critical measurements and is complemented by ProtecDrive™, which electrically shields all motors to provide ideal conditions for even the most sensitive applications such as $1/f$ noise measurements. The excellent performance of the PA300PS-MA is enhanced by the integrated probe card holder for simultaneous testing of probe cards and manipulators without requiring mechanical changeover. The wizard guides you through the 5-minute alignment procedure for the EMI/RFI-shielded environment.

The patented ContactView™ feature provides a convenient probe card and probe tip setup. Hence, the operator gets a side view to the substrate and tips for visual contact detection. The ReAlign™ function in combination with the integrated thermal management ensures positioning accuracy. Furthermore, this also compensates an automated drift of the probe card tips to the pads during unattended tests over multiple temperatures, using vertical and advanced probe cards. Operating temperatures range between -60°C and 300°C .

The handling of fragile and expensive wafers and/or load substrates has been simplified by the new loading mechanism, minimizing damage, contamination, as well as maintenance and repair costs.

FEATURES / BENEFITS

Flexibility	Ideal solution for probing, testing ball grid arrays and multi-site WLR tests Simultaneous use of positioners and a probe card in EMI/RFI shield
Accuracy	Perfect tool for aA- and fF-level measurements Ideal conditions for $1/f$ noise tests CeramPlate™ for excellent electrical and thermal performance MicroAlign technology for handling vertical probe cards ReAlign for unattended testing over multiple temperatures
Ease of use	Spacious top chambers for up to 10 positioners Easy to operate ProberBench™ Operating Environment Joystick controller with color display for full prober control Contact View for fast and safe wafer loading protects device and probes

SPECIFICATIONS*

General Features

Substrate sizes	Single chips to 300 mm wafers
Temperature range	-60° C to 300° C
Automated temperature test	ReAlign™ function, Automated Thermal Management

Chuck Stage

X-Y Movement	Closed-loop, DC servo with linear encoder feedback
Travel range in X and Y	505 mm x 305 mm
Resolution	0.5 µm
Repeatability	± 1 µm
Accuracy	± 2 µm
Planarity	± 15 µm
Maximum speed	50 mm / sec

Z Movement

Movement	DC servo with rotary encoder feedback
Travel range	12 mm
Resolution	0.25 µm
Repeatability	± 1 µm

Theta Movement

Movement	DC servo with rotary encoder feedback
Travel	± 7.5°
Resolution	0.0001°

Programmable Microscope Movement

Movement	Closed-loop, DC servo with rotary encoder feedback
Travel range	40 mm x 50 mm (with top chambers)
Resolution	0.25 µm
Access lift	130 mm motorized

Remote Interfaces

PC	LAN, GPIB
Electronics	GPIB

Utilities

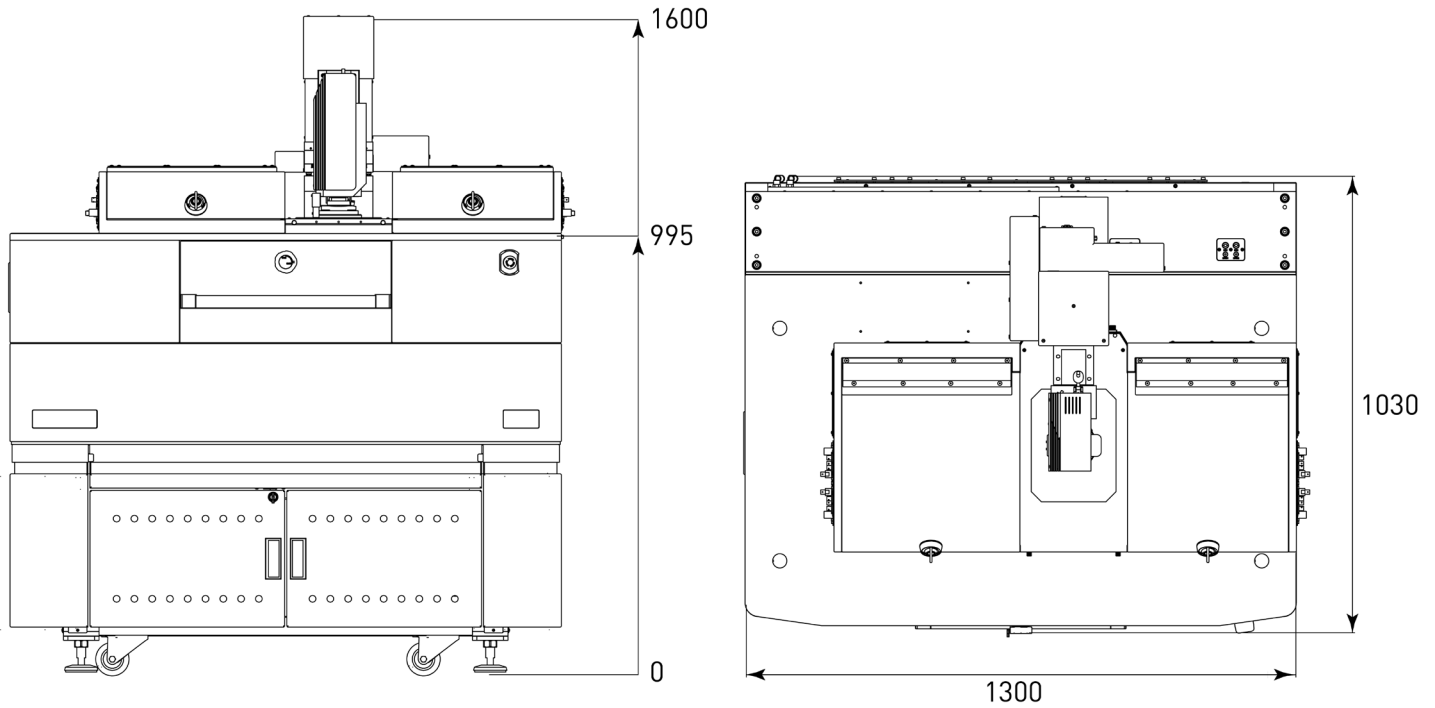
Power	100 / 240 V, 50 / 60 Hz, 600 W (maximum 1500 VA)
Vacuum	Less than 200 mbar abs
Dry air (depending on system configuration)	6 ⁻¹⁰ bar
Dew point temperature	C300 -40°C system = ≤ -50°C C300 -60°C system = ≤ -70°C Maximum flow rate 180 liters/min at SATP

Physical Characteristics

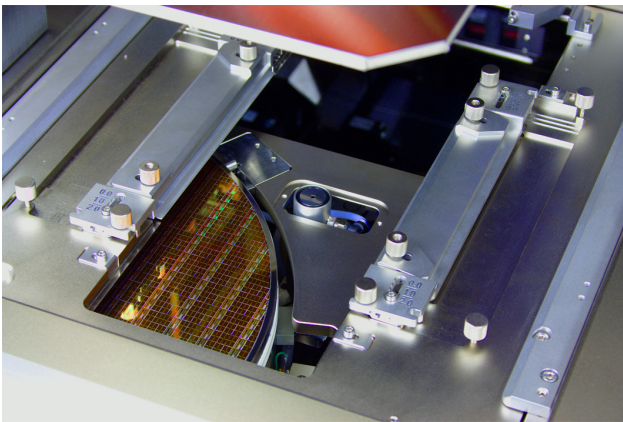
Weight	1200 kg (depending on system configuration)
Dimensions	1600mm (W) x 1300 mm (D) x 1030 mm (H)

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

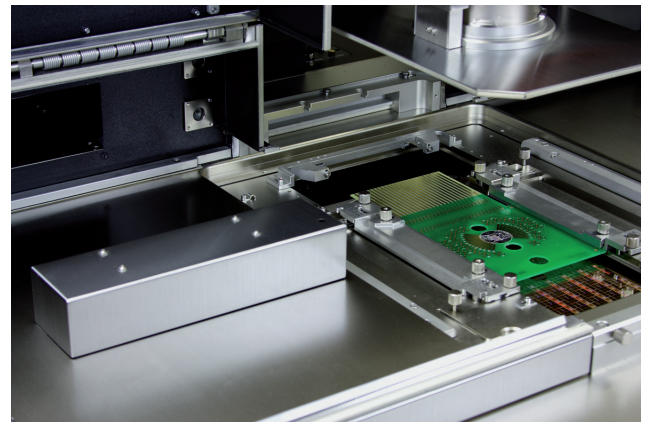
PHYSICAL DIMENSIONS



APPLICATIONS



Chuck camera of the PA300PS-MA.



Platen camera of the PA300PS-MA.

© Copyright 2012 Cascade Microtech, Inc.
All rights reserved. Cascade Microtech and ProbeShield are registered trademarks, and QuietMode, ProtecDrive, MicroAlign, ContactView, ReAlign, CeramPlate and ProberBench are trademarks of Cascade Microtech, Inc. All other trademarks are the property of their respective owners.

Data subject to change without notice

PA300PS-MA-DS-1012

Cascade Microtech, Inc.
Corporate Headquarters
toll free: +1-800-550-3279
phone: +1-503-601-1000
email: cmi_sales@cmicro.com

Germany
phone: +49-89-9090195-0
email: cmg_sales@cmicro.com

Japan
phone: +81-3-5615-5150
email: cmj_sales@cmicro.com

China
phone: +86-21-3330-3188
email: cmc_sales@cmicro.com

Singapore
phone: +65-6873-7482
email: cms_sales@cmicro.com

Taiwan
phone: +886-3-5722810
email: cmt_sales@cmicro.com

PA300PS-MA

www.cascademicrotech.com

