

PM300WLR

300 mm Manual Probe System



DATA SHEET

The PM300WLR is the world's only dedicated probe system for wafer-level reliability (WLR) test of substrates up to 300 mm. The PM300WLR delivers accurate measurement results before the device is packaged, minimizing the time and cost to collect critical reliability information for design and process improvement.

The PM300WLR ensures reliable contacts over the long test times and over high temperatures up to 400°C. To handle multi-site, high-temperature probe cards with up to 5,000 contact needles, the PM300WLR provides a heavy-duty chuck stage that endures high forces and high temperatures.

The ergonomic design allows easy wafer loading and unloading, simple cable management for large triaxial cable harnesses, and easy changeover of probe cards and tiles. Fine contact and overtravel control and fast, accurate motorized microscope movement enable easy and accurate probe card alignment to the wafer. Large (300 mm x 300 mm), motorized microscope movement enables you to view more than 60 openings that a multi-site probe card may have.

For electro-migration test of devices that use copper technologies an inert gas environment is required to prevent oxidation on the device under test. The PM300WLR features a small, gas-tight chuck chamber to minimize the consumption of inert gas.

FEATURES / BENEFITS

| | |
|-------------|---|
| Flexibility | High-throughput EM, TDDB, HCI and NBTI measurements with 200 mm or 300 mm multi-site probe cards Special designed chuck chamber: <ul style="list-style-type: none">- Minimizes nitrogen consumption- Keeps out ice and oxygen- Provides optional EMI shield- Shields the machine control units from high temperatures |
| Ease of use | 300 mm x 300 mm programmable microscope movement Pull-out chuck for easy loading and unloading Simple management of large cable harnesses Easy fine leveling and theta adjustment of multi-site probe cards Oxygen sensors for safety and automated nitrogen control |
| Stability | 100 mm x 100 mm high-resolution chuck stage Extremely rigid and stable Z-chuck axis for high temperature and long-term testing |

SPECIFICATIONS*

General Features

| | |
|-------------------|---|
| Substrate sizes | Up to 300 mm wafers |
| Temperature range | -60°C to 350°C (400°C available upon request) |

Chuck Stage

| | |
|----------------------------|------------------------------|
| X-Y movement | Manual |
| Travel | 105 mm x 105 mm |
| Resolution (coarse / fine) | 3 mm / 0.5 mm per revolution |
| Planarity | ± 5 µm |
| Z movement | Manual, load / unload |
| Travel | 10 mm |
| Repeatability | ± 1 µm |
| Theta movement | Manual |
| Travel | ± 4° |
| Resolution | 0.136° |

Programmable Microscope Movement

DC servo

| | |
|-------------|-----------------|
| Travel | 300 mm x 300 mm |
| Resolution | 1 µm |
| Access lift | 20 mm manual |

Manual Platen Movement

| | |
|-----------------------------|---------------------|
| Drive type | Manual control knob |
| Contact / Separation stroke | 0.4 mm |
| Travel | 12 mm |
| Repeatability | ± 1 µm |

Utilities

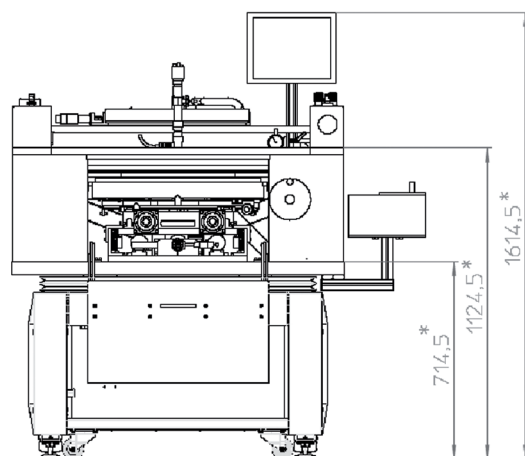
| | |
|---------|--|
| Vacuum | Less than 200 mbar abs |
| Dry air | 7 bar |
| | Dewpoint lower than -65°C |
| | Maximum flow rate 185 liters / min at SATP |
| Power | 230 / 400 V, 50 Hz, maximum 500 VA |

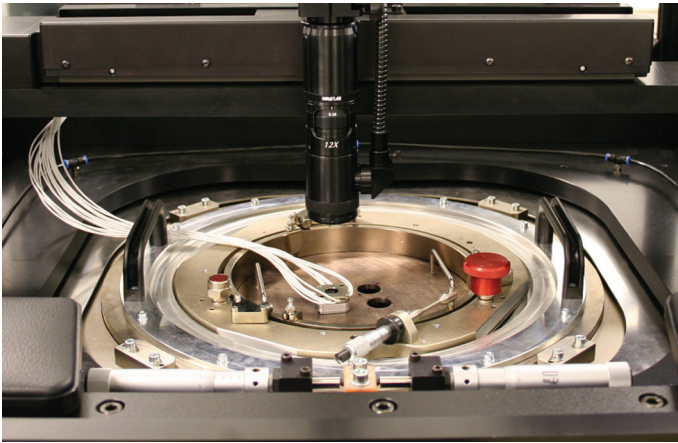
*Data, design and specification depend on individual process conditions and can vary according to equipment configurations.
Not all specifications may be valid simultaneously.

PHYSICAL DIMENSIONS

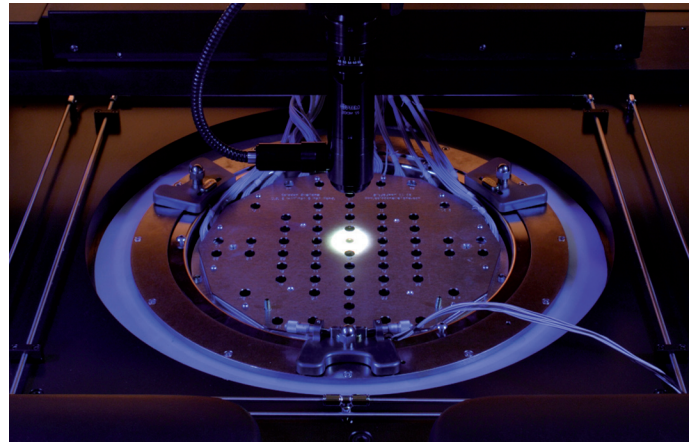
Weight 1700 kg

Dimensions (mm)





Modular adapter with high Z force planarity adjustment for 200 mm or 300 mm multi-site probe cards.



Multi-site testing of an entire 200 mm or 300 mm wafer.

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**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

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