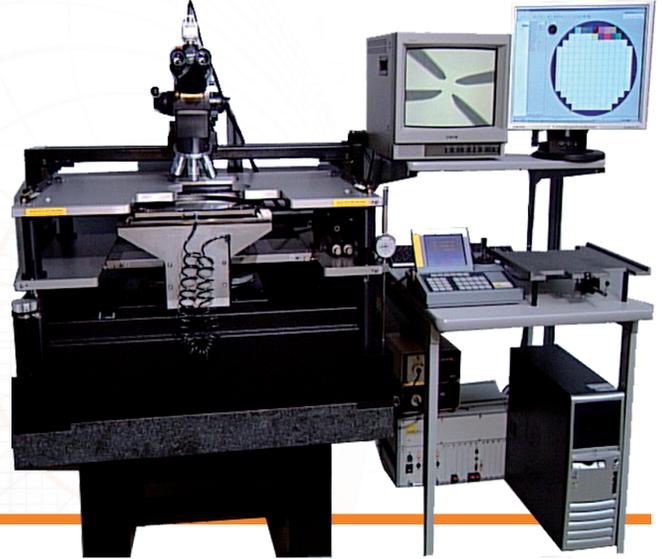


# PA300DSP

## 300 mm Semi-automated Double-sided Probe System



### DATA SHEET

The PA300DSP is the most precise and flexible semi-automatic double-sided test solution for wafers and substrates up to 300 mm. It is ideal for all applications requiring access to both the top and back sides 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 such as 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 device under test (DUT) from underneath or from above. Probe positioners and probe cards can be positioned separately or simultaneously on either side of the DUT. Stimulus and measurement of the output can then be applied to the front and/or back sides.

The PA300DSP can be equipped with a wide range of accessories such as laser-doppler vibrometers, integrating spheres, laser cutters or automated submicron positioners.

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

## FEATURES / BENEFITS

|             |   |
|-------------|---|
| Flexibility | Patented design for front-side and back-side inspection of the DUT<br>Ideal for emission microscopy, optoelectronics, MEMS and TSV test<br>Accommodates probe positioners and probe cards (simultaneously)<br>Large number of accessories available |
| Stability   | Unique stability ensures highest positioning accuracy in the market<br>Thermally-stable granite base<br>High-precision ball-screw drives  |
| Ease of use | Simultaneous use of probe card and positioners<br>Unique and easy-to-operate Velox™ probe station control software<br>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 $\mu\text{m}$                           |
| 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 $\mu\text{m}$  |
| 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 $\mu\text{m}$                          |
| 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, LAN, GPIB |
|----|------------------|

### Utilities

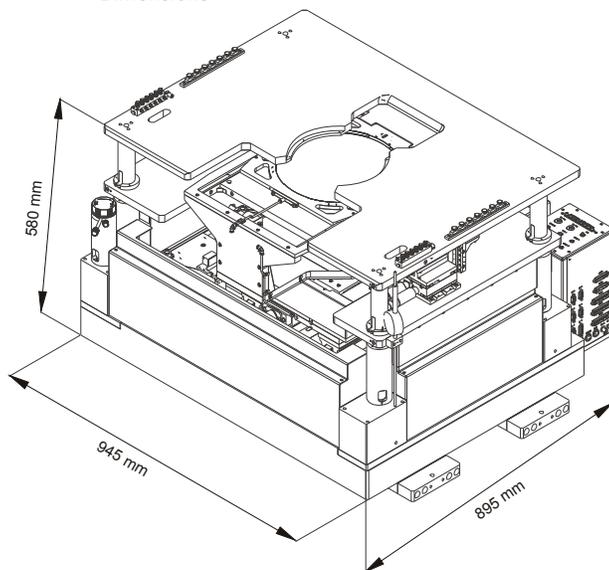
|                |   |
|----------------|---|
| Power          | 115/230 V, 50/60 Hz, 600 W (maximum 1500 VA, depending on tool configuration) |
| Vacuum         | Less than 200 mbar abs.   |
| Compressed air | 6 to 10 bar   |

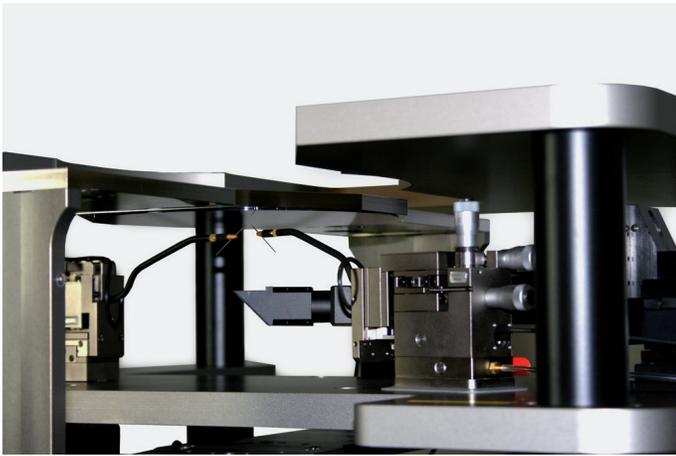
\*Data, design and specification depend on individual process conditions and can vary according to equipment configurations.  
Not all specifications may be valid simultaneously.

## PHYSICAL DIMENSIONS

Weight ~ 825 kg (depending on tool configuration)

Dimensions

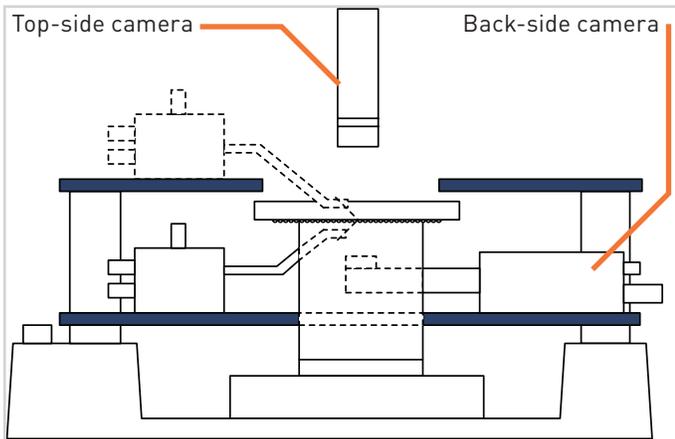




Electrical contact of the DUT from the back side: A back-side camera is located beneath the chuck and views upward in order to position the probes.



Up to eight positioners can be placed on the PA300DSP.



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

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Data subject to change without notice

**Cascade Microtech, Inc.**  
**Corporate Headquarters**  
 toll free: +1-800-550-3279  
 phone: +1-503-601-1000  
 email: [cmi\\_sales@cmicro.com](mailto:cmi_sales@cmicro.com)

**Germany**  
 phone: +49-89-9090195-0  
 email: [cmg\\_sales@cmicro.com](mailto:cmg_sales@cmicro.com)

**Japan**  
 phone: +81-3-5615-5150  
 email: [cmj\\_sales@cmicro.com](mailto:cmj_sales@cmicro.com)

**China**  
 phone: +86-21-3330-3188  
 email: [cmc\\_sales@cmicro.com](mailto:cmc_sales@cmicro.com)

**Singapore**  
 phone: +65-6873-7482  
 email: [cms\\_sales@cmicro.com](mailto:cms_sales@cmicro.com)

**Taiwan**  
 phone: +886-3-5722810  
 email: [cmt\\_sales@cmicro.com](mailto:cmt_sales@cmicro.com)

PA300DSP-DS-0115