

PA200DSP

200 mm Semi-automated Double-sided Probe System



DATA SHEET

The PA200DSP is the most precise and flexible semi-automatic double-sided test solution for wafers and substrates up to 200 mm. It is ideal for all applications requiring access from both the front 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 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 top. Probe positioners and probe cards can be positioned separately or simultaneously on either side of the DUT. As a result, stimulus and the measurement of the output can be applied to the front and/or back side.

The PA200DSP can be equipped with a wide range of accessories, such as laser-doppler vibrometers, integrating spheres or laser cutters. In combination with a high-resolution emission microscope, the probe station becomes an integrated wafer-level emission microscopy system, offering excellent quality for both front-side and back-side emission analysis.

FEATURES / BENEFITS

| | |
|-------------|--|
| Flexibility | Patented design for front-side and back-side inspection of the DUT Ideal for emission microscopy, optoelectronic, MEMS and TSV test Accommodates probe positioners and probe cards (simultaneously) Large number of accessories available |
| Stability | Best position accuracy available on the market Ideal for small structures even down to submicron probing Highly-stable mechanics |
| Ease of use | QuietMode™ technology for sensitive measurements Unique and easy to operate Velox™ probe station control software Joystick controller with color display for full prober control Intuitive and ergonomic layout of system controls |

SPECIFICATIONS*

X-Y Movement

| | |
|--------------------------|---|
| Travel range | 200 mm x 200 mm |
| Resolution | 0.5 μm |
| Repeatability / Accuracy | $\pm 1.0 \mu\text{m}$ / $\pm 2.5 \mu\text{m}$ |
| Planarity | 8 μm |

Z Movement

| | |
|---------------|-----------------------|
| Travel range | 30 mm |
| Resolution | 0.25 μm |
| Repeatability | $\pm 1.0 \mu\text{m}$ |

Theta Movement

| | |
|--------------|-----------------|
| Travel range | $\pm 6^\circ$ |
| Resolution | 0.0001 $^\circ$ |

Programmable Microscope Movement

| | |
|--------------------------|---|
| 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 (Optional)

| | |
|-------------------------------|--|
| Drive type/ Coarse adjustment | Compound knob / 20 mm |
| Contact / Separation stroke | 0.4 mm linear with 1 μm repeatability |

Remote Interfaces

| | |
|--------------------------------|------------------|
| PC | RS232, LAN, GPIB |
| Graphical User Interface (GUI) | Windows based |

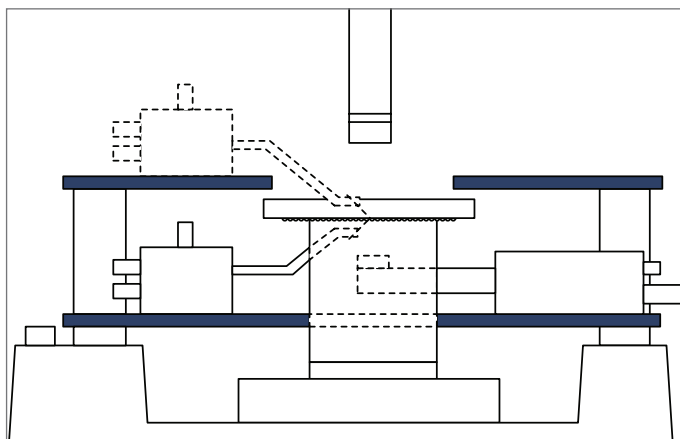
Utilities

| | |
|-------------------------|---|
| Vacuum / Compressed air | Less than 200 mbar abs / 4 bar min |
| Power | 115/230 V, 50/60 Hz, 600 W (150 VA maximum**) |

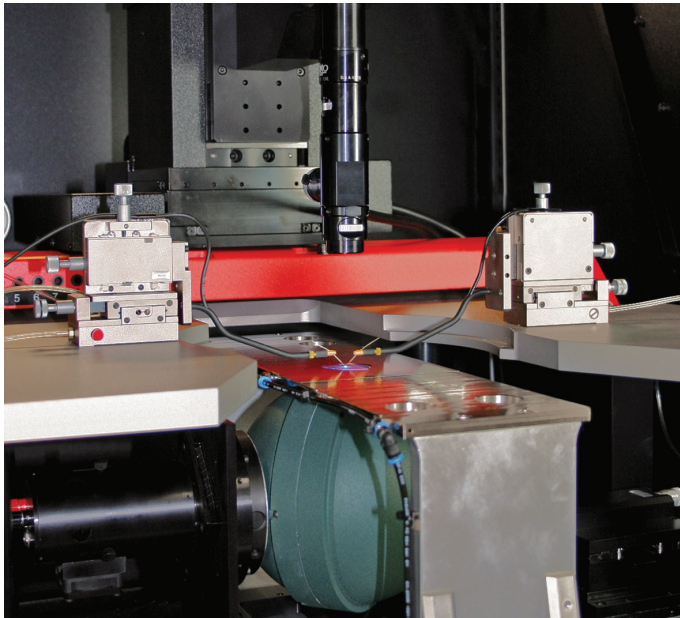
* Data, design and specification depend on individual process conditions and can vary according to equipment configurations.

Not all specifications may be valid simultaneously.

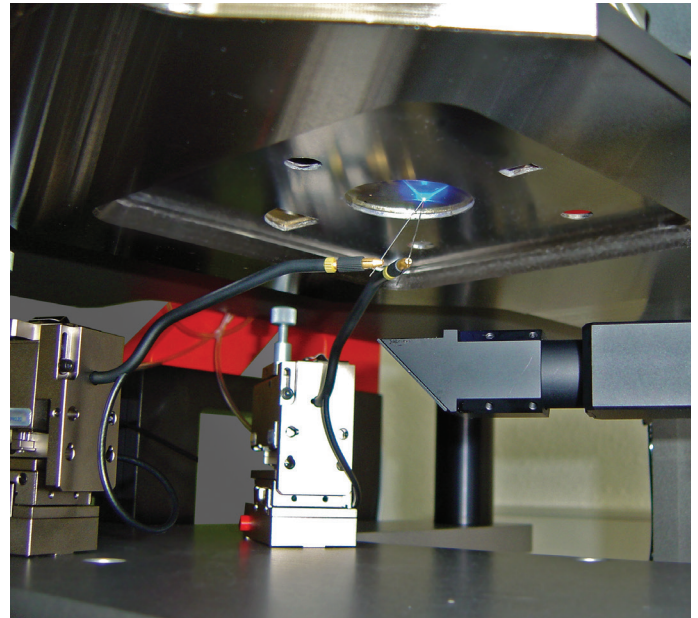
**Depending on tool configuration.



Simultaneous electrical contact of the DUT from the front side and the back side.



Spectrum analysis of optoelectronic devices with an integrating sphere.



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.

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Data subject to change without notice

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