

PAC200

200 mm Semi-automated Cryogenic Probe System



DATA SHEET

The PAC200 is the ideal solution for automatic testing of wafers and substrates up to 200 mm in a cryogenic environment down to 77 K with liquid nitrogen or below 20 K with liquid helium.

It supports a wide range of applications, including DC and RF measurements of the latest silicon, compound semiconductor and superconductor devices. The probe platen is designed to mount probe cards or up to eight vacuum-type positioners on magnetic feet. To reduce heat entrance, probes or probe cards are thermally anchored to the cryogenic shield. A high-resolution video microscope with 50 mm x 50 mm travel range is mounted either on a microscope mount with swivel or on a microscope bridge for vibration-sensitive test applications and additional test instruments.

The PAC200 is equipped with a stable vibration isolating frame. The chuck and the motorized chuck stage with 200 mm x 200 mm X-Y travel, theta and Z-axis are located inside the high-vacuum chamber. Up to eight vacuum-type positioners can be easily operated from outside of the chamber via vacuum-tight mechanical feedthrough drives and cardan shafts.

The PAC200 can be customized with a number of instruments, including various video microscopes, optical topology measurement tools and black bodies for exposure of the DUT with controlled IR radiation.

FEATURES / BENEFITS

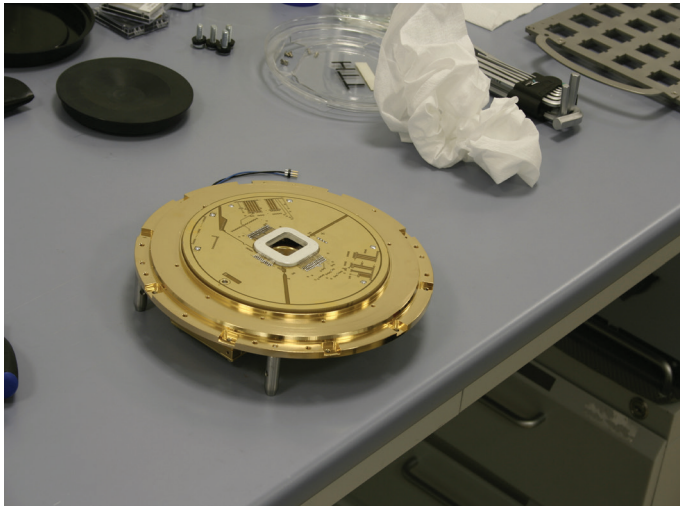
Flexibility	<ul style="list-style-type: none">System is customized to user's requirementsDifferent substrate carriers for wafers up to 200 mm or single diesVelox™ probe station control softwareWide range of measurements (I-V, C-V, two-port, multi-port and differential RF)RF tests supported by a wide range of probes and calibration tools, such as calibration substrates and WinCal XE™ calibration softwareOther test equipment can be implemented (e.g. infrared sources)
Stability	<ul style="list-style-type: none">Ice- and condensation-free probing down to 77K (liquid nitrogen) or below 20 K (liquid helium)High accuracy, ideal for small structuresHighly stable mechanics with a stable vibration isolation table
Ease of use	<ul style="list-style-type: none">Simple, straightforward design for easy and ergonomic operationEasy to use probe card holder for fast change of probe card

APPLICATIONS

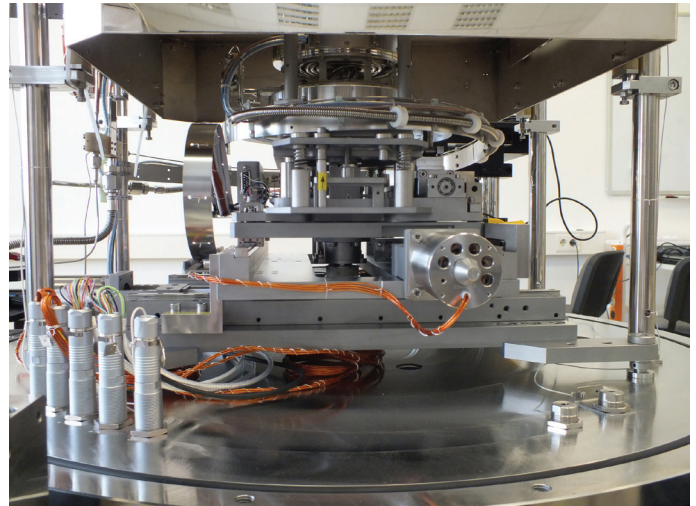
IR-imaging: detectors Focal-Plane-Arrays (IRFPA)
RF devices, e.g. HEMT electron mobility transistors
Submicron technology
Superconductors

CRYOGENIC PROBE CARD

Specially designed for use in high vacuum and cryogenic conditions
Customer electronics on board possible
Easy-to-use probecard holder for fast change of probecard
Integrated in radiation shield for cooling probe needles
Needle ring for up to 120 needles
Design depends on the required electrical measurement
Coax and / or twisted-pair cabling



Probe card shutter unit.

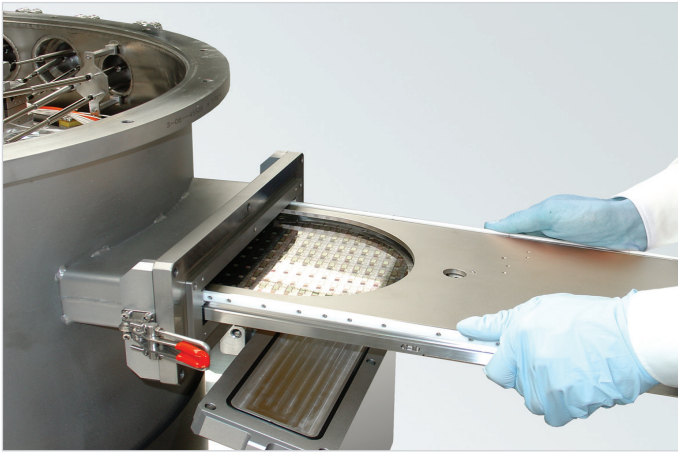


A look inside the chamber.

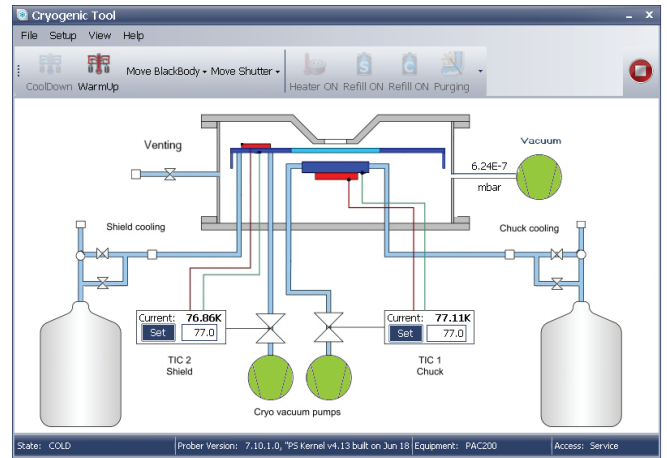
AUTOMATION

Two-line configuration with independent cooling of cold shield and chuck for short cool-down time
LN2 dewar with level detection and automatic refill
Automatic warm-up after testing is completed
Automatic alignment with Velox probe station control software
Interface to customer's main program
Display and control of the whole system with Cascade Microtech's Cryogenic Tool
Bridge with rails for programmable movement of mounted instruments

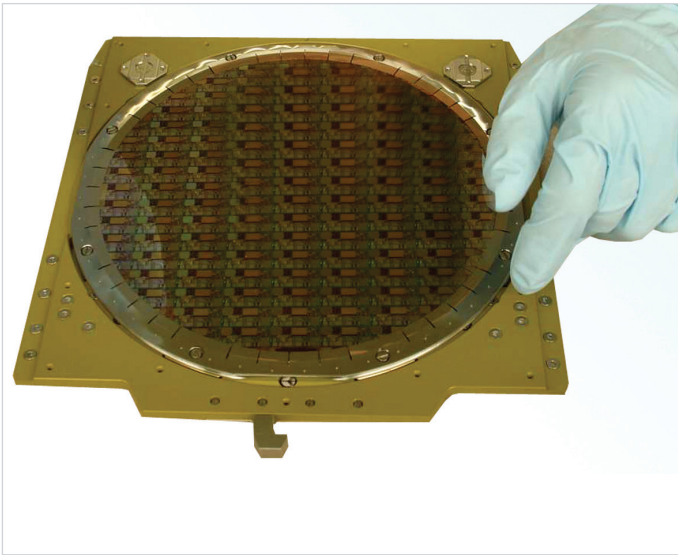
HANDLING



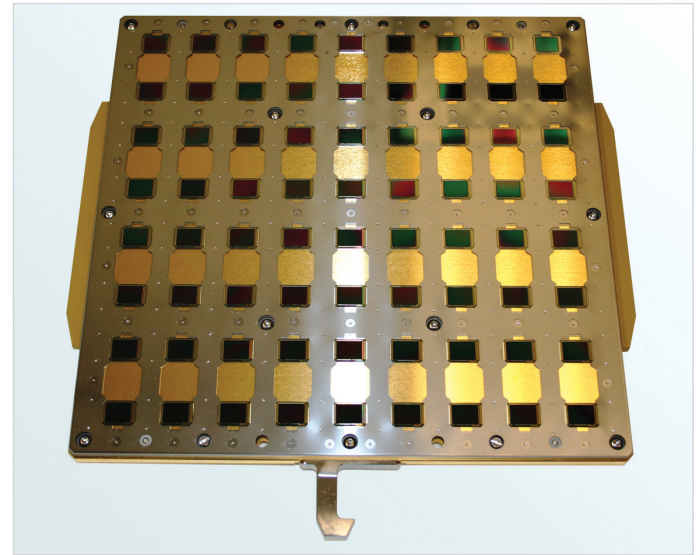
Loading of wafer / die carrier into the vacuum chamber.



Display and control of the whole system with Cascade Microtech's Cryogenic Tool.



Wafer carrier.



Diced chips fixed on special carrier.

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