

# ■ PAC200

## 200 mm Semi-automatic Cryogenic Probe System



### DATA SHEET

The PAC200 provides unique wafer-level probing down to 4K. Building off of the experience from the vacuum probe system, Cascade Microtech designed a unique cryogenic wafer-level probe system using a similar chamber concept, available as laboratory (PLC), manual (PMC) or semi-automatic (PAC) probe systems for testing wafers and substrates up to 300 mm.

Using a patented design, the cryogenic probe system is able to achieve temperatures down to 4K. Furthermore, this cryogenic system can be built to function with a closed-loop cooling system. The process for cooling the chamber takes longer, but the system uses less liquid gas and therefore saves costs. A complete line of cryogenic-ready accessories, such as probes, calibration substrates, cables and positioners are available.

### FEATURES / BENEFITS

Customized to user requirements	System is customized to user's requirements Different substrate carriers for wafers up to 200 mm or single dies ProberBench™ Operating Environment Wide range of measurements (I-V, C-V, two-port, multi-port and differential RF) RF tests supported by wide range of probes and calibration tools, such as calibration substrates and WinCal XE™ calibration software Other test equipment can be implemented (e.g. infrared sources)
Stability	Ice- and condensation-free probing down to 77K (liquid nitrogen) or 4K (liquid helium) Ideal for small structures Highly stable mechanics, stable vibration isolation table
Ease-of-use	Comfortable and ergonomic operation, straightforward layout of controls Easy to use probe card holder for fast change of probe card
High measurement throughput	High measurement throughput

## APPLICATIONS

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

## CRYOGENIC PROBECARD

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



Cryogenic probe card



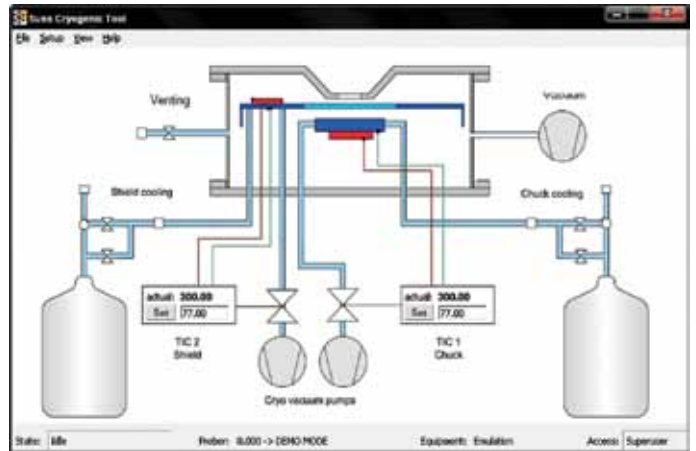
A look inside the chamber

## AUTOMATION

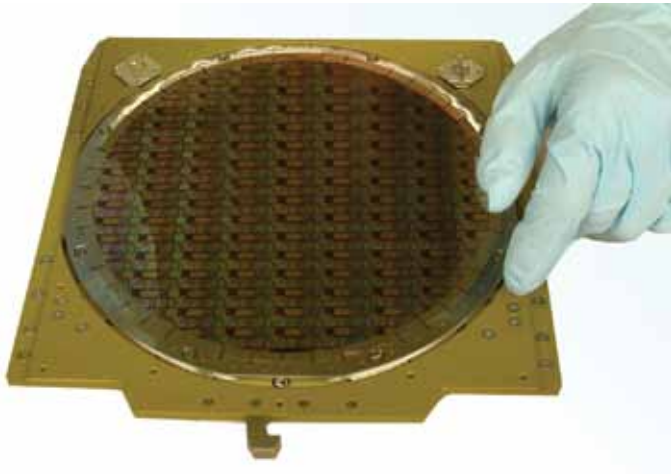
Two-line configuration with independent cooling of cold shield and chuck for short cool-down time  
LN<sub>2</sub> dewar with level detection and automatic refill  
Automatic warm-up after testing is completed  
Automatic alignment with SPECTRUM™ Vision System  
Interface to customer's main program  
Display and control of the whole system with Cascade Microtech's Cryogenic Tool  
Bridge with rails for programmable movement of mounted instruments



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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