Cascade
PAP200LP
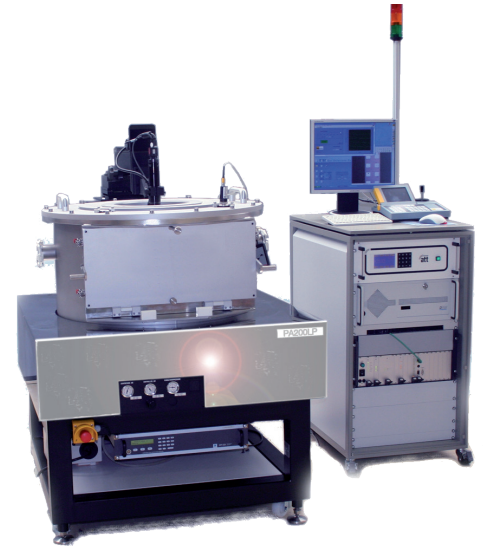## 200 mm Semi-automatic Pressure Probe System

❯ Overview

Cascade PAP200LP from FormFactor probe system from FormFactor is the ideal probing solution for testing MEMS pressure sensors with high accuracy at above/ below atmospheric air pressure. The entire 200 mm prober is integrated into a pressure chamber rated from 500 mbar to 1200 mbar absolute.

To meet the production test requirements, the PAP200LP is equipped with a high-speed 200 mm chuck stage, designed for use with standard 4.5" probe cards. The modular design of the PAP200LP enables a wide range of measurements, including I-V for piezo-resistive and C-V for capacitive pressure sensors.

The PAP200LP is equipped with a stable vibration isolating frame. The pressure chamber with topside viewport and an optical window made of quartz glass contains flanges for vacuum-tight electrical feedthroughs. The pressure control system consists of a powerful diaphragm vacuum pump, a remote controlled proportional valve for air dosage and a high-precision pressure sensor to monitor the environmental conditions.

All main functions, i.e. stage movement and pressure control, can be controlled by software. The large front door allows quick and ergonomic loading and unloading of the wafer, as well as easy probe card exchange. A swivel mechanism, which is part of the microscope station, allows convenient access to the topside lid.

The PAP200LP can be customized with a variety of instrumentation, such as video microscopes, laser cutters and Polytec's optical motion analysis tools. Specially designed thermal chucks, with electrical and coolant bulk feed throughs, are available for the use under vacuum conditions. The PAP200LP supports a wide temperature range from -60°C to 200°C , and a dew point sensor ensures condensation-free probing.

❯ Features / Benefits

High throughput	• Patented wafer-exchange mechanism for quick loading / unloading • High-speed stage with up to five dies/s without compromising accuracy
High accuracy	• Special pressure control system with ± 0.05 % accuracy
Ease of use	• Large front door for easy probe card exchange • All main functions controlled by software
Flexibility	• Several flanges for flexible configuration • Electronics rack providing space for test instruments

FormFactor™

❯ Specifications*

Chuck Stage

X-Y Movement	Closed-loop DC servo with linear encoder feedback
Travel	205 mm x 205 mm
Resolution	1.0 µm
Repeatability	± 2.0 µm
Accuracy	± 5.0 µm

Z Movement	DC servo with linear encoder feedback
Travel	15 mm
Resolution	0.25 µm
Repeatability	± 1.0 µm

Theta Movement	DC servo with linear encoder feedback
Travel	± 6.0°
Resolution	0.0001°

Pressure Supply System

Range	500 to 1200 mbar absolute (other on request)
Accuracy	± 0.05 % of full range (± 0.025 on request)

Electrical Data

System power (internal)	230 V, 50/60 Hz, 3800 VA

Utilities Required

Compressed air input	0.5 MPa to 0.6 MPa or 5 bar to 6 bar; hose of 8 mm outer diameter
N2 input	Class 4.6 or better; 4 bar; 8 mm outer diameter tube
Exhaust	50 mm hose

Microscope

Type	Fits to video and stereo microscopes

Probe Platen

Type	4.5" probe card adapter

Chucks

Standard	150 mm or 200 mm; stainless steel
Thermal	200 mm; -60°C to 200°C

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

❋ FORMFACTOR™
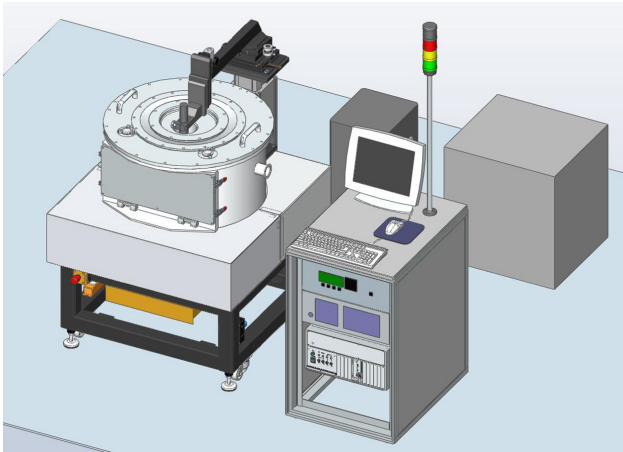
Physical Dimensions

Dimensions (WxDxH)

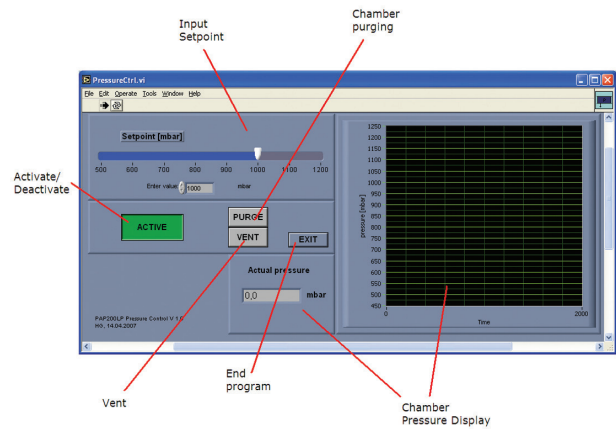|	
Probe station	1100 mm x 1100 mm x 1500 mm
Rack	600 mm x 800 mm x 1000 mm

Weight

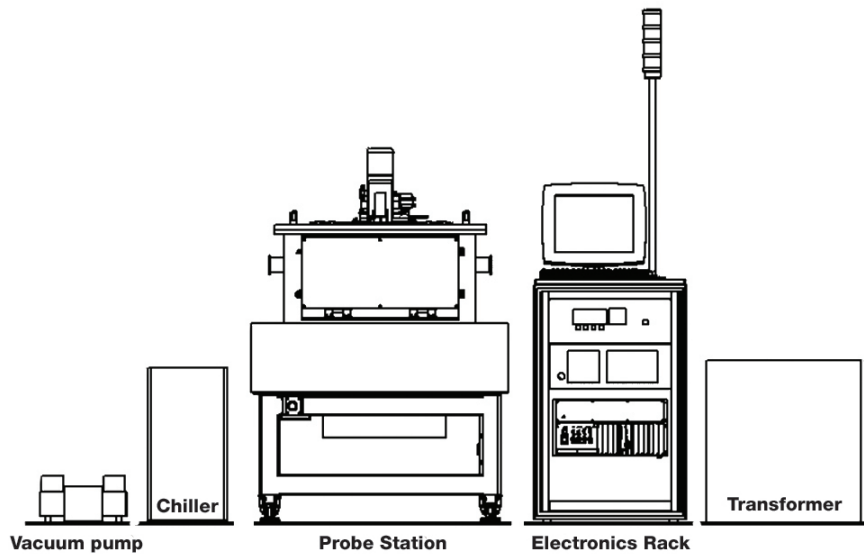|	
Chamber unit with frame work	400 kg
Vibration isolating table	150 kg
Rack	50 kg

Applications

Probe station with electronic rack and thermal chuck controller.

Pressure Control Software.

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PAP200LP-DS-0418

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