materials test

129630 Micro Vacuum Probe Stations

Solartron Analytical and Nextron have joined forces to provide a wide range of temperature controlled micro vacuum probe systems for testing ceramics, polymers, sensors, and solid state materials.

As the “micro” name implies these probe stations are extremely small (140 mm / 5.5”) and portable so you can easily move the test station from one experiment to the next.

Systems can be configured to your specific requirements using reference grade system components including:

- Solartron Analytical’s range of high precision time domain / EIS electrical measurement instrumentation including:
  - ModuLab XM MTS
  - MaterialsLab XM
  - 1260A /1296A
- Nextron’s range of 4-probe micro vacuum probe stations built from the highest-quality aerospace materials, include cryostatic and high temperature variants for characterizing your materials over the temperature range -195 °C to 750 °C.

These reference grade test systems are perfectly suited to studying your materials (dielectric, ionic, semiconductor, electronic) and their interfaces (e.g. grain boundaries and electrodes).

Applications include:

- Development of advanced ceramic materials
- High temperature dielectrics and insulators
- Fuel cell and solid electrolyte materials
- Studies of bulk and interfaces; grain boundaries and electrodes
- Electroceramics
- Electronic and display materials
- Sensor materials

Micro Vacuum Probe Stations

Compare the following amazing facilities:

- Small, light, portable - convenient to move around your laboratory
- Small size allows fast / responsive temperature changes
- Four electrodes, can be used in 2, 3 or 4 terminal configurations
- Short working distance is optimized for light emission tests using microscopes
- Gas tight sample space - test samples in vacuum or atmosphere including humidity measurement

The following product variants are available:

Peltier 129630 PT/PTH
- -40°C to 200°C with light emission options

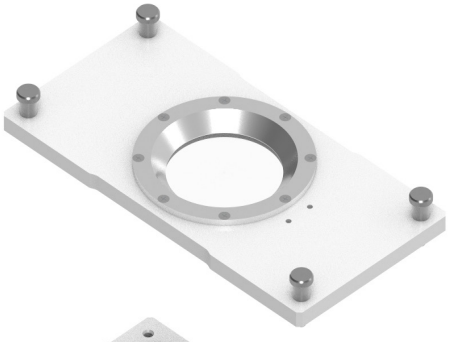
Ceramic 129630 CHL/CHH
- RT to 450° / 750°C

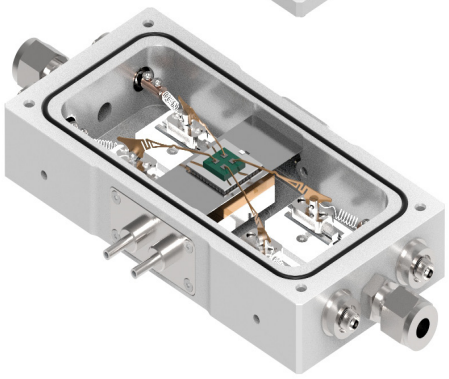
Liquid Nitrogen 129630 LN2
- 77K to 300K

Solartron materials test systems...

Solartron materials test systems provide a wide range of electrical measurements including I-V, Pulse, C-V, Impedance, and Mott-Schottky.

- PC software provides fully integrated electrical measurements with temperature control
- High and low impedance materials can be analyzed depending on the choice of instrumentation and sample holder configuration
- Wide frequency range from 10 µHz to 32 MHz enables full materials characterization





129630 Series Micro Vacuum Probe Stations

Electrical connections	Four spring loaded probes positioned on the sample surface - can be used in 2, 3, or 4 probe mode
4-point probing method	Free-stop
Probe stroke length (x-axis)	12 mm
Sample chamber volume	<100 cc
Vacuum sample chamber leak rate	1 x 10-7 L.Torr/s
View port (for microscope)	40 mm diameter (sapphire or fused-silica)
Vacuum/vent connections	2x 1/4" standard Swagelock
Electrical connections	4x SMA (female)
Controller Interface	RS485 (serial port)
Dimensions (w.d.h)	140 mm x 70 mm x 24.5 mm
Weight (probe station)	650 g
Control unit voltage	100-220 V, 50-60 Hz
Control unit power	76 W (PT/PTH/LN2), 150 W (CHL/CHH)

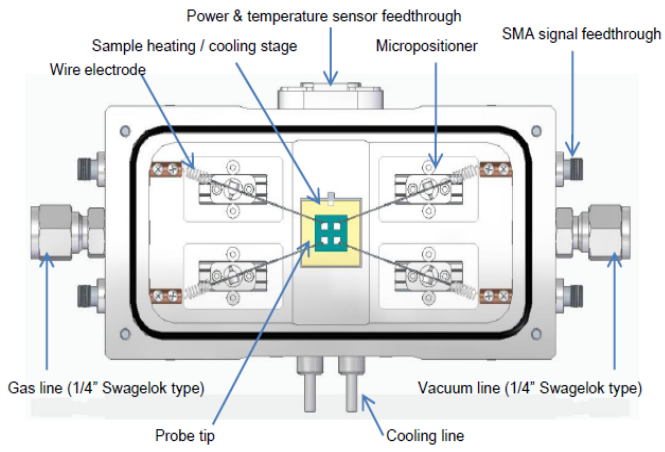
Options

Vacuum pump	129631A

System Compatibility

Nextron Micro Vacuum Probe Stations are fully compatible with Solartron Analytical materials test products, including:

- 1260A Impedance Analyzer
- 1296A Dielectric Interface (with 12xx FRA or 1260A)
- ModuLab XM MTS Materials Test System
- MaterialsLab XM Materials Test System
- XM-studio and SMaRT software



129630PT/PTH Micro Vacuum Probe Station (Peltier)

Temperature range	-40°C to +200°C (active cooling)
Heater type	Peltier
Probe material	Gold-coated inconel
Sample stage size	18 x 18 mm
Maximum cooling / heating rate	1°C/sec
Temperature accuracy	±0.1°C
PTH variant	Light irradiated from under sample

129630CHL/CHH Micro Vacuum Probe Station (Ceramic)

Temperature range	CHH - Room temperature to +750°C CHL - Room temperature to +450°C
Heater type	Ceramic Heater
Probe material	Bulk rhodium
Sample stage size	12.7 mm diameter
Maximum cooling / heating rate	1°C/sec
Temperature accuracy	±0.5°C

129630LN2 Micro Vacuum Probe Station (Liquid Nitrogen)

Temperature range	77K to 300K (includes LN dewar)
Heater type	Liquid nitrogen (Dewar)
Probe material	Gold-coated inconel
Sample stage size	18 mm diameter
Maximum cooling / heating rate	20K/sec
Temperature accuracy	±0.1K

Test Capability	129630 P/C/LN			Equip	
	P	C	LN	XM	12xx
I-V measurement (2, 3, 4 probe)	☑	☑	☑	☑	
EIS (Electrical Impedance Spectroscopy)	☑	☑	☑	☑	☑
Capacitance, Mott-Schottky, Dielectrics	☑	☑	☑	☑	☑
Electro/photoluminescence & photovoltaic	☑	☑	☑	☑	☑
Photocurrent mapping	☑			☑	
Semiconductor characterization	☑	☑	☑	☑	☑
Sensors and solid-state materials	☑	☑		☑	☑
Display materials characterization	☑	☑	☑	☑	☑
Thermal hysteresis and conductivity	☑	☑	☑		
Hall measurement			☑		
Raman, reflectivity	☑	☑	☑		
Ferroelectric materials	☑	☑		☑	☑

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