

# SMARPROBE LX

The High Precision Platform for Nanoprobing Tasks

SmarAct develops high-performance solutions for handling and positioning in the micro- and nanometer range. The broad product portfolio - from single stages to complex parallel kinematics, miniaturized robots and easy-to-use control systems - is completed by sophisticated measuring equipment based on powerful laser interferometers.

We serve high accuracy positioning and metrology applications in research and industry within such fields as optics, life sciences, micro-assembly, semiconductors and microscopy. Maintaining the complete production in house allows a high level of customization.

Thus, we always provide you with the optimal individual or OEM solution.

## Headquarters

SmarAct GmbH

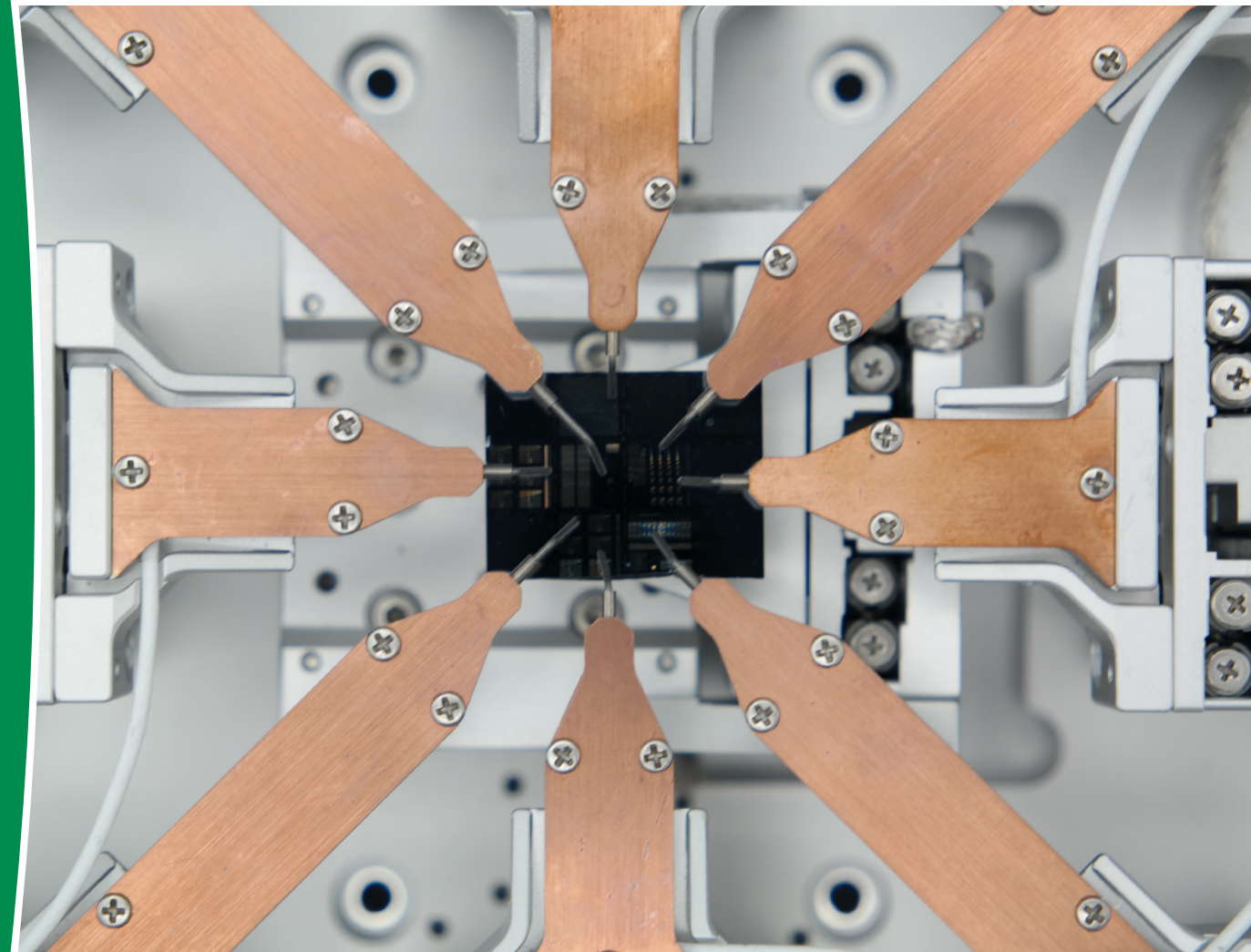
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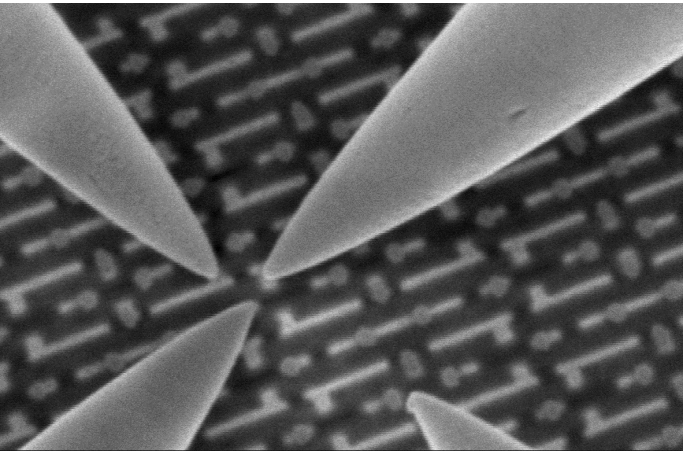
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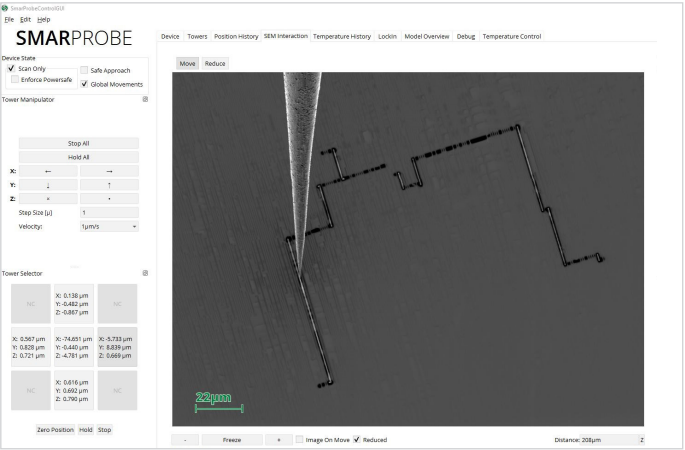


For high precision matters.

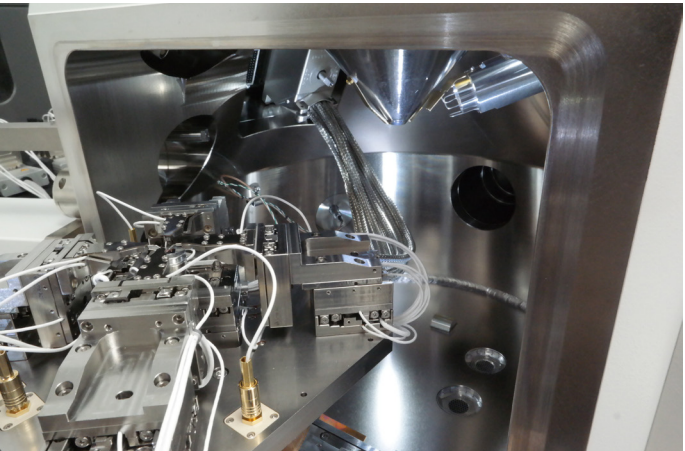
KEY FEATURES



Exceptional performance
Closed-loop control with 1 nm resolution
Full area probing on 25 mm x 25 mm
Low thermal drift and large scan range
Low noise in-situ current (EBAC) amplifier
Autotouch function



Easy to use
„Point&Click“ and joystick control
Group movements and “Step&Repeat”
CAD navigation possible
Automatic landing of all probes
Stable contact even on 7nm transistors



Fully configurable
Retrofit to most SEMs
Use with an optical microscope
Customizable to application
Optional heating/cooling sample stage
Etching station for probe production

SYSTEM DESCRIPTION

The probe-station **SMARPROBE** allows the positioning of up to eight probes to analyze or manipulate samples fixed onto its sample stage. The closed-loop control of the probes and the sample allows well defined and stable positioning as well as assistance from CAD navigation. The system integrates into an electron microscope for nano-probing of i.e. 7nm transistors or into an optical microscope set-up for atmospheric probing of large samples.

In case the intended use is nano-probing the perfect choice is the **SMARPROBE LX** with an

active temperature control for low thermal drift (L) and/or with an extended scan range for smooth fine-positioning (X). Further, it is possible to choose between the standard and the advanced probe holder with autotouch functionality and in-situ current (EBAC) amplifier.

Together with partners, we can offer complete nanoprobeing solutions, including microscope, necessary electronics and the **SMARPROBE** system. Please do not hesitate to contact us for further information.

General Specifications	
Size SP8, W x L x H [mm]	187 x 187 x 56
Size SP4, W x L x H [mm]	156 x 156 x 56
Motion System	XYZ Closed-loop, Sample Stage and Manipulators
Operating Environment	HV (10–7 mbar), Ambient Conditions
Cleaning	Plasma Cleaning Compatible
Relative Drift between Probe and Sample [nm/min]	< 1
Thermalization Time in Vacuum [h]	< 1
Manipulators	
Number of Manipulators	Up to 8
Probe Mount	0.25 or 0.5 mm Diameter Tungsten Probes
Maximum Measurement Frequency [MHz]	100
Scan-Range in XYZ [µm]	> 10
Leakage Current at 10 V [pA]	< 1 (with Coax, optionally with Triax available)
Min. SEM Working Distance [mm]	2
Sample Stage	
Scan-Range in XYZ [µm]	> 3
Sample Mounting	SEM Stub Holder (optionally up to 4)

VISIT [WWW.SMARACT.COM/NANO-PROBING](http://WWW.SMARACT.COM/NANO-PROBING) TO GET MORE INFORMATION.