



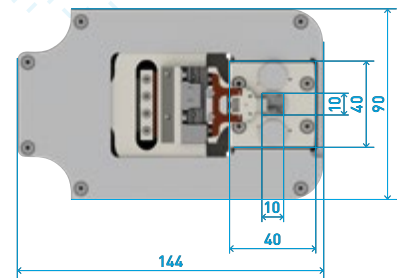
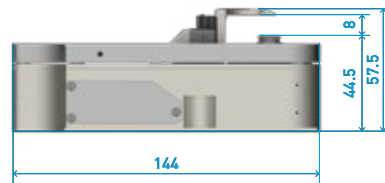
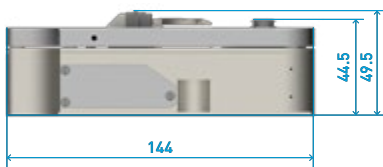
Technical Specification

Environmental

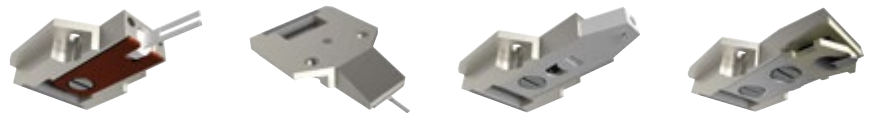
Operating temperature	+10 °C to +35 °C
Operating pressure	10 ⁻⁵ Pa to 10 ⁵ Pa
Dry environment only	

Mechanical

Overall dimensions	144 mm × 90 mm × 49 mm – 58 mm, depends on the sample height
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Weight	1 kg
Maximal sample size	10 mm × 10 mm × 8 mm
Coarse approach	True orthogonal positioning
	Calibrated, pre-stressed linear ball bearings
	Self locking
	Minimum incremental motion 50 nm
Scanning unit	Speed up to 0.5 mm/s
	X travel range 27 mm
	YZ travel range 12 mm
	Based on multi-layer, low-voltage piezoelectric transducer
Fast and easy probe exchange	Solid state flexure guide system
	Open-loop operation for maximal resolution
	XYZ-axis movement 100 µm
	Resolution 0.4 nm
Sample holder for standard SEM stubs (Ø12.7 mm with 3.2 mm pin)	Universal acceptor for different probes
	Four probe holder in basic configuratin



Sample holder for standard SEM stubs (Ø12.7 mm with 3.2 mm pin)	Two additional positions for SEM/ FIB imaging / machining (not to be measured by SPM)
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Operation and control system

Modes of operation, probes	Contact mode (PRSA probe)
	Dynamic mode (PRSA probe, Akiyama probe, tuning-fork based probes)
Maximal frequency of PLL for dynamic measurements 75 kHz (or higher using external PLL)	
2× 16 bit DAC per scan axis (scan range, offset) to reach maximal resolution everywhere within the viewfield	
User selectable piezo amplifier gain – viewfield (vs. resolution)	100 µm (< 2 nm)
	50 µm (< 1 nm)
	10 µm (< 0.4 nm)
	5 µm (< 0.4 nm)
6× 16 bit auxiliary inputs for simultaneous measurements of user signals (±10 V)	
Input channels could be used in feedback-loop mixer	
Probe signal output / monitor	
External probe excitation	
All necessary connections for using external PLL	
Ethernet connection to the control PC	
110 VAC / 230 VAC operation, 200 W	

Software

Web based user interface	
Easy for new users, flexible for experts	
User accounts	Every user has an account
	Accounts individually configurable – layout, parameters, complexity,...
Remote access to the user data, download of data from control PC to the local computer	
Remote experiment control via eg. tablet, smartphone	
Integrated data postprocessing, analyses, export, etc.	

