

attoAFM II

low temperature atomic force microscope, modular and flexible, interferometric sensor

Microscope Setup	
AFM sensor unit	highly flexible AFM head, upgrade to SNOM possible interferometric deflection detection
cantilever sensor adjustment	fine adjustment of cantilever sensor in situ possible
Operation Modes	
feedback	PI feedback loop with additional PLL
imaging modes	contact mode, non-contact mode, MFM, EFM, SGM
Sample Positioning	
positioners and scanners	2 sets coarse positioners ANPxyz101 with piezo scanner ANSxyz100
coarse range	5 x 5 x 5 mm ³
step size	0.05 .. 3 μm @ 300 K, 10 .. 500 nm @ 4 K
fine scan range	40 x 40 μm ² @ 300 K, 30 x 30 μm ² @ 4 K
sample monitoring	sample / tip monitoring via CCD camera and mirror
Operating Conditions	
temperature range	1 .. 300 K (dependent on cryostat)
magnetic field range	0 .. 15 T+ (dependent on magnet)
operating pressure range	1E-6 mbar .. 1 bar (designed for exchange gas atmosphere)
Cooling Specifications	
bore size	designed for a 2" (50.8 mm) cryostat/magnet bore
cryostat	LTSYS -He4
Probes	
probe design	compatible with standard commercial cantilevers
functional probes	compatible with coated and non-coated probes, magnetic probes, ...
Noise	
z bit resolution full range mode	7.6 pm
z bit resolution small range mode	0.12 pm
Scan Controller and Software	
ASC500 SPM controller	for detailed specifications please see the ASC500 section

