attoCFM II

1008167

Technical Specifications

General Specifications	
type of instrument	fiber optics based confocal microscope for maximum stability
sensor head specifics	fiber-coupled low temperature compatible aspheric objectives for ultimate stability
Confocal Unit	
configuration	50/50 fiber coupler integrated into laser/detector module LDM600 (see SPM and electronics section)
key benefits	ultimate longterm stability & ease-of-use
pinhole configuration	pinhole provided by single mode fiber core
pinhole size	dependent on fibers, typically 3 .. 9 µm mode field diameter
compatible LT-objective	LT-IWDO, LT-LWDO (see accessory section for more information)
Illumination	
excitation wavelength range	limited to wavelength range of single mode fiber, default 650 nm (others on request)
Detection	
detection mode	e.g. reflection, luminescence, fluorescence
detection wavelength range	limited to wavelength range of single mode fiber, default: 650 nm (others on request)
Sample Positioning	
total travel range	5 x 5 x 4.8 mm^3 (open loop)
step size	0.05..3 µm @ 300 K, 10..500 nm @ 4 K
fine scan range	50 x 50 $µm^2$ @ 300 K, 30 x 30 $µm^2$ @ 4 K (optional, open loop)
sample holder	ASH/QE/0 quick exchange sample holder and integrated heater with calibrated temperature sensor
Suitable Operating Conditions	
temperature range	1.5 K..300 K (dependent on cryostat); mK compatible setup available on request
magnetic field range	0..15 T+ (dependent on magnet)
operating pressure	designed for He exchange gas (vacuum compatible version down to 1E-6 mbar on request)
Suitable Cooling Systems	
titanium housing diameter	48 mm
bore size requirement	designed for a 2" (50.8 mm) cryostat/magnet bore
compatible cryostats	attoDRY1000/1100/2100, attoLIQUID1000/2000 (attoLIQUID3000/5000 on request)
Compatibility with Electronics	
scan controller and software	ASC500 basic (optional; for detailed specifications please see attoCONTROL section)
laser	LDM600 laser/detector module (for detailed specifications please see attoCONTROL section)
Options and Upgrades	
closed loop scanning & global sample coordinates	interferometric encoders for scan linearization and closed loop sample navigation
ultra-large scan range upgrade	80 x 80 $µm^2$ @ 300 K, 125 x 125 $µm^2$ @ 4 K
closed loop upgrade for coarse positioners	resistive encoder, range 5 mm, sensor resolution approx. 200 nm, repeatability 1-2 µm
sample holder upgrade	ASH/QE/4CX quick-exchange sample holder (8 electrical contacts, integrated heater & T-sensor)