attoCFM Ixs: Free-beam based Confocal Microscope

1008035

Technical Specifications

General Specifications	
type of instrument	free-beam based room temperature optics head coupled to low temperature objective
sensor head specifics	unique low temperature compatible achromatic objectives with high numerical aperture, optimized for different wavelength ranges
Confocal Unit	
configuration	compact and modular design, two or more optical channels; standard configuration: one excitation and one detection channel
key benefits	quick and reliable alignment of each channel, steering mirror for combined beams long-term stability
quick-exchange of optical components	beamsplitters, filter mounts for up to 4 filters/polarizers, (1" diameter); optional piezoelectric rotator with filter mount
pinhole configuration	two pinholes (fiber apertures), different illumination and collection wavelength possible
pinhole size	dependent on fibers, typically 3 .. 9 µm mode field diameter
compatible LT-objective	LT-APO/VIS, LT-APO/VISIR, LT-APO/NIR (see accessory section for more information)
inspection unit	sample imaging with large field of view: ~25-30 µm (depending on insert length)
Illumination	
excitation wavelength range	400 .. 1000 nm, default 650 nm (others on request)
illumination port specification	FC/ APC-connector for single mode fibers or free-beam configuration
Detection	
detection mode	e.g. reflection, luminescence, fluorescence, Raman (optional)
detection wavelength range	detector upon user`s choice, typically Si detector (coupling of the light to other detectors)
detection port specification	FC/ APC-connector for single mode fibers or free-beam configuration
Sample Positioning	
total travel range	3 x 3 x 2.5 mm^3 (open loop)
step size	0.05 .. 3 µm @ 300 K, 10 .. 500 nm @ 4 K
fine scan range	15 x 15 $µm^2$ @ 4 K, 30 x 30 $µm^2$ @ 300 K (optional, open loop)
sample holder	Ti plate with integrated heater and 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..14 T (dependent on magnet)(16 T compatible version available on request)
operating pressure	designed for He exchange gas
Suitable Cooling Systems	
titanium housing diameter	23.9 mm
bore size requirement	designed for 1" (25.4 mm) cryostat/magnet bore size (e.g. PPMS)
compatible cryostats	see PPMS compatibility chart
Compatibility with Electronics	
scan controller and software	ASC500 basic (optional; for detailed specifications please see attoCONTROL section)
laser	LDM600 laser/detector module
Options and Upgrades	
in-situ inspection optics	incl. with CFM I external optics head

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