Cryogenic Photonic Probe Station

Technical Specifications

General Specifications	
type of instrument	combined side injection into planar waveguide structures and perpendicular confocal optics on top of the sample. Perpendicular injection is possible
sensor head specifics	two independent lensed fiber probes with 3 individual degrees of freedom, low temperature compatible apochromatic objective and external confocal optics head
Confocal Unit	
configuration	compact and modular design, two or more optical channels standard configuration
key benefits	quick and reliable alignment of each channel, steering mirror for the combined beams exceptional 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
LT- compatible 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
long-term stability	lateral drift of confocal spot typically <2 nm/h
Sample Positioning	
total travel range	sample 6 mm x 6 mm (closed loop), fiber probes 3 x 3 x 2.5 mm³ (closed loop)
step size	0.05..3 µm @ 300 K, 10..500 nm @ 4 K
sample holder	carefully thermalized, quick exchange mechanism, including calibrated temperature sensor and heater
Suitable Operating Conditions	
temperature range	< 3K..300K
operating pressure	1E-6 mbar .. 1 bar
Suitable Cooling Systems	
compatible cryostats	attoDRY800(flow cryostats on request)
Compatibility with Electronics	
laser	LDM600 laser/detector module (for detailed specifications please see attoCONTROL section)