

# Cryogenic Photonic Probe Station

1009485

## 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: 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	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 $\mu\text{m}$ 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: $\sim 100 \mu\text{m}$
long-term stability	lateral drift of confocal spot typically $< 2 \text{ nm/h}$
Sample Positioning	
total travel range	fiber probes $3 \times 3 \times 2.5 \text{ mm}^3$ (closed loop) sample $6 \text{ mm} \times 6 \text{ mm}$ (closed loop)
step size	$0.05..3 \mu\text{m}$ @ 300 K, $10..500 \text{ nm}$ @ 4 K
sample holder	carefully thermalized, quick exchange mechanism, including calibrated temperature sensor and heater
Suitable Operating Conditions	
temperature range	$< 3\text{K}..300\text{K}$
operating pressure	$1\text{E}-6 \text{ mbar} .. 1 \text{ bar}$
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)

