

## Technical Specifications

<b>General Specifications</b>	
type of instrument	confocal microscope for transmission experiments with one free-beam and one fiber based channel
sensor head specifics	one channel with unique LT compatible achromatic objectives with high numerical aperture, optimized for different wavelength ranges, and one channel with fiber-coupled LT compatible aspheric objective
<b>Confocal Unit</b>	
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	beam splitters, 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 $\mu\text{m}$ 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: $\sim 54 \mu\text{m}$ (attoDRY)
<b>Illumination</b>	
illumination port specification	FC/ APC-connector for single mode fibers or free-beam configuration
<b>Detection</b>	
detection mode	e.g. transmission, reflection, luminescence, fluorescence, Raman (optional)
detection wavelength range	free-beam channel 400 .. 1000 nm, default 650 nm (others on request), fiber channel limited to wavelength range of single mode fiber, default 650 nm (others on request)
detection port specification	free-beam configuration or FC/ APC-connector for single mode fibers
<b>Sample Positioning</b>	
total travel range	sample $3 \times 3 \times 2.5 \text{ mm}^3$ (closed loop), fiber-based objective $5 \times 5 \times 4.8 \text{ mm}^3$ (closed loop)
step size	$0.05..3 \mu\text{m}$ @ 300 K, $10..500 \text{ nm}$ @ 4 K
fine scan range	sample $30 \times 30 \mu\text{m}^2$ @ 300 K, $12 \times 12 \mu\text{m}^2$ @ 4 K (open loop)
sample holder	Ti plate with aperture of 8 mm in diameter with integrated heater and calibrated temperature sensor
<b>Suitable Operating Conditions</b>	
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
<b>Suitable Cooling Systems</b>	
titanium housing diameter	48 mm
bore size requirement	designed for a 2" (50.8 mm) cryostat/magnet bore
compatible cryostats	attoDRY1000/1100/2100
<b>Compatibility with Electronics</b>	
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)

