

attoDRY1000

cryogen free cryostats with optional superconducting magnets

Technical Specifications

| General Specifications | | Closed-cycle cooler | |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------|
| technology | ultra-low vibration, pulse-tube based closed-cycle cryostat designed for scanning probe microscopy applications | nominal cooling power (4.2 K) | > 900 mW |
| sample environment | He exchange gas | power consumption | max. 9.0 kW, 7.2 kW steady state |
| sample space | 49.7 mm diameter probe bore fitting all attocube inserts | cooling of compressor | water cooling (requires local infrastructure) |
| sample exchange | top loading system for quick access | Dimensions | |
| vibration & acoustic noise damping system | proprietary low vibration design | cryostat (width x depth x height) | 1120 x 640 x 1050 mm ³ (depending on magnet choice) |
| Performance Data | | required min. ceiling height | approx. 2.60 m (depending on magnet) |
| temperature range | 4 .. 300 K (optional temp. controller required) | optional electronics rack (width x depth x height) | 640 x 640 x 1050 mm ³ |
| cool down time of sample | approx. 2 h (depending on insert) | Options | |
| cool down time of system (without magnet) | approx. 5 .. 10 h (unattended) | superconducting magnet | solenoids: 7, 9, 12 T vector magnets: e.g.: 8/2 T, 9/3 T, 9/1/1 T, ... |
| cool down time of system (incl. 9 T magnet) | approx. 10 .. 15 h (unattended) | bipolar magnet power supply | included (with optional magnet) |
| temperature stability | < ± 10 mK expected (4 .. 50 K) < ± 25 mK guaranteed (4 .. 50 K) | temperature controller | 2 channel (magnet + sample temperature) |
| cooling power at sample location | > 5 mW @ 5 K | pumping kit | turbomolecular pump with suitable backing pump for sample space preparation |
| vibration level | RMS z-noise (measured with attoAFM I): < 0.10 nm (expected) < 0.15 nm (guaranteed) (contact mode @ 4 K, 5 ms pixel integration time) | Compatible Equipment | |
| | | confocal microscopes | attoCFM I, attoCFM II, attoCFM III |
| | | confocal Raman microscopes | attoRAMAN |
| | | atomic/magnetic force microscopes | attoAFM I, attoMFM I, attoAFM III (on request) |
| | | scanning Hall probe microscopes | attoSHPM |

