

mK - SPM System in Cryogen Free Dilution Refrigerator



New

NanoMagnetics'
mK - SPM on
Oxford Instruments'
Triton™
Dilution Fridge



NanoMagnetics Instruments Ltd. presents
mK Scanning Probe Microscopes for
Cryogen Free Dilution Refrigerator Systems
from Oxford Instruments

Typical Specifications

mK - SPM

- > Robust design
- > Dedicated control electronics, acquisition and analyses software
- > Several operation modes, STM, QTF-AFM, SHPM etc.

Dilution Refrigerator

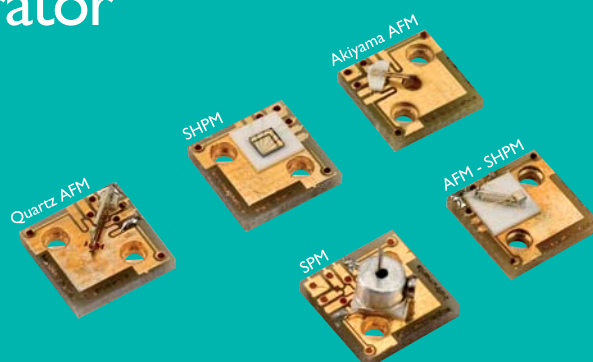
- > Fully integrated Cryofree magnets, up to 16 T
- > Base temperature: ≤ 7 mK expected
- > Cooling power ≥ 200 or $400 \mu\text{W}$ at 100 mK
- > Automatic control of the dilution refrigerator from RT to base temperature

™ Triton is a registered trademark of Oxford Instruments, Ltd.

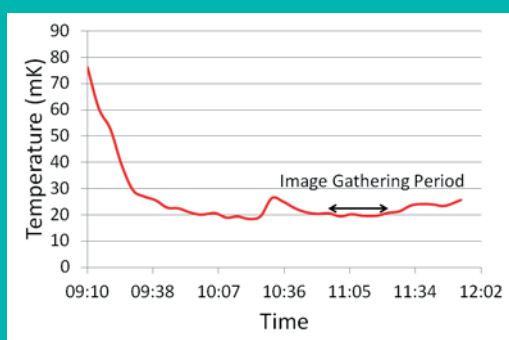


**NANOMAGNETICS
INSTRUMENTS**

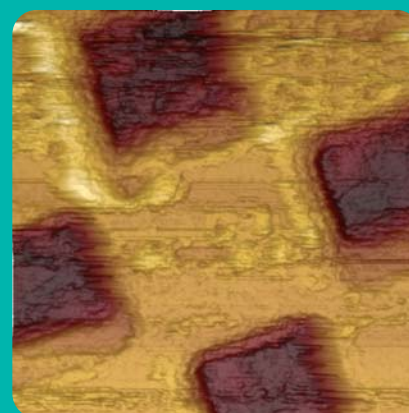
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STM Image of 6µm pitch calibration grating at 300K



Temperature reading through Nuclear Orientation (NO) crystal placed on the microscope body



STM Image of 6µm pitch calibration grating at 20mK

System Specifications

Imaging Modes	: STM, AFM, contact AFM, non-contact AFM, MFM, Quartz/Akiyama AFM, EFM, SNOM		
Scan Size	: Large Area Scan Head 150 × 150 µm @ 300 K 36 × 36 µm @ 77 K 18 × 18 µm @ 4.2 K	: Standart Scan Head 52 × 52 µm @ 300K 14 × 14 µm @ 77 K 6 × 6 µm @ 4.2 K	: Small Area Scan Head 8 × 8 µm @ 300 K 3.5 × 3.5 µm @ 77 K 1.5 × 1.5 µm @ 4.2 K
Z Range	: 7.0 µm @ 300 K 1.8 µm @ 77 K 0.8 µm @ 4.2 K	: 4.8 µm @ 300 K 1.2 µm @ 77 K 0.5 µm @ 4.2 K	: 2.4 µm @ 300 K 0.6 µm @ 77K 0.25 µm @ 4.2K
Head Dimensions	: 23.6 mm OD × 125 mm or 25.4 mm OD × 100 mm		
Sample Approach	: Stick-slip type; 10 mm Z, Ø3 mm XY range with 50 - 800 nm step size		
Sample Size	: 15 × 15 × 5 mm maximum		
Temperature Range	: 10 mK - 300 K (Limited by the cryogenic system)		
Magnetic Field	: > 16 T		
Compatibility	: Oxford Instruments' Dilution Refrigerators and He ³ systems. Can be customised to fit in to other mK systems if free space permits.		

Software upgrades are free for lifetime
Note: Specifications are subject to change without notice.

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