

# 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

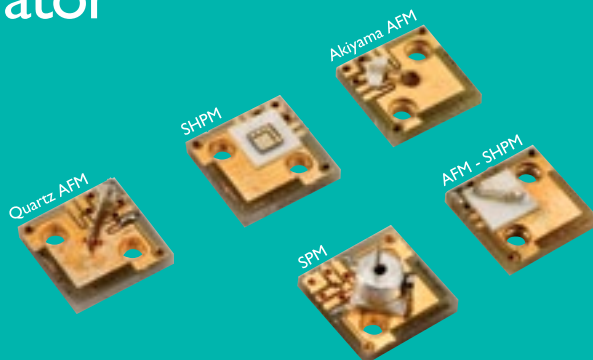
- > Fully integrated Cryofree magnets, up to 16 T
- > Base temperature:  $\leq 7$  mK expected
- > Cooling power  $\geq 200$  or  $400 \mu\text{W}$  at 100 mK
- > Automatic control of the dilution refrigerator from RT to base temperature

™ Triton is a registered trademark of Oxford Instruments.

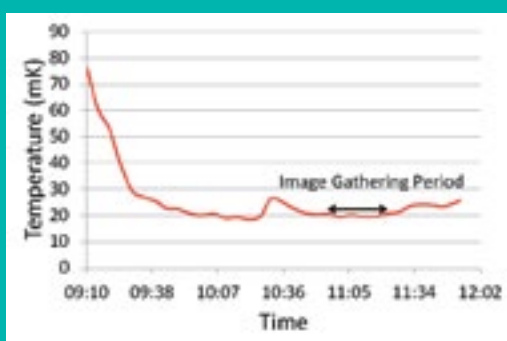


**NANOMAGNETICS**  
INSTRUMENTS

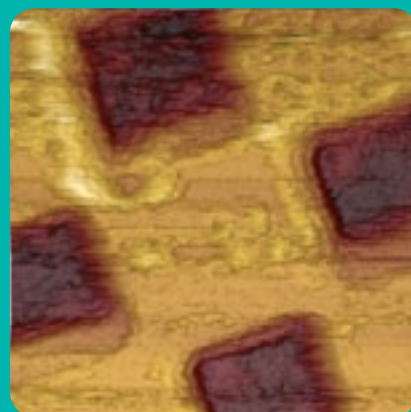
# mK - SPM System in Cryogen Free Dilution Refrigerator



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

<b>Imaging Modes</b>	: STM, AFM, contact AFM, non-contact AFM, MFM, Quartz/Akiyama AFM, EFM, SNOM		
<b>Scan Size</b>	: Large Area Scan Head	: Standart Scan Head	: Small Area Scan Head
	150 × 150 µm @ 300 K 36 × 36 µm @ 77 K 18 × 18 µm @ 4.2 K	52 × 52 µm @ 300K 14 × 14 µm @ 77 K 6 × 6 µm @ 4.2 K	8 × 8 µm @ 300 K 3.5 × 3.5 µm @ 77 K 1.5 × 1.5 µm @ 4.2 K
<b>Z Range</b>	: 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
<b>Head Dimensions</b>	: 23.6 mm OD × 125 mm or 25.4 mm OD × 100 mm		
<b>Sample Approach</b>	: Stick-slip type; 10 mm Z, Ø3 mm XY range with 50 - 800 nm step size		
<b>Sample Size</b>	: 15 × 15 × 5 mm maximum		
<b>Temperature Range</b>	: 10 mK - 300 K (Limited by the cryogenic system)		
<b>Magnetic Field</b>	: >16 T		
<b>Compatibility</b>	: Oxford Instruments' Dilution Refrigerators and He <sup>3</sup> 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.