

High resolution magnetic force microscopy

High resolution magnetic probe tip with Co-alloy hard magnetic coating.

Leading disk drive manufacturers use Team Nanotec HR-MFM probes.

Tip Apex Specifications

| | |
|---------------------|---------|
| Radius (uncoated) : | < 10 nm |
| Full cone angle: | ~ 12° |
| Tip height: | > 9 μm |

Available magnetic coatings:

| | Thickness | Tip Radius |
|------|----------------|---------------------|
| | 20 nm | 15 nm |
| ML 1 | Range: 15 - 25 | Guaranteed: < 25 nm |
| | 37 nm | 20 nm |
| ML 3 | Range: 35 - 40 | Guaranteed: < 40 nm |

Magnetic coating is applied to tip side only. Coating thickness is measured on flat surface.

Please contact us with special requests about magnetic coating thickness.

Available Cantilevers:

C = 3.0 N/m, fo = 75 kHz

C = 0.7 N/m, fo = 45 kHz

Standard coating on backside of cantilever is Aluminium.

Please contact us if you do not need reflex coating.

1 pack includes 5 probe-tips

Probe tips, cantilevers, and cantilever chips consist of single crystal silicon.

Details on the magnetic properties of Team Nanotec's Co-alloy MFM Coatings can be downloaded in the 'documents' section.

All cantilevers are shipped with Al-reflex coating (R).

The HR-MFM probes are also available with alignment grooves on the back side of the holder chip.

Shipments without reflex coating or with special coatings upon request.

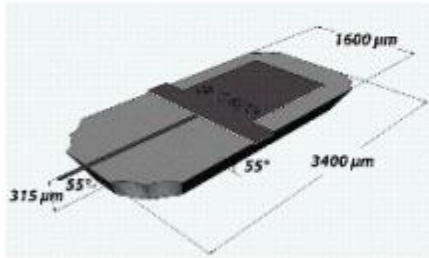
All probe tips are SEM quality inspected prior to shipment.

Cantilever Dimensions:

| Stiffness | Typical resonant frequency | Length | Width |
|-----------|----------------------------|---------------|-------------|
| 3.0 N/m | 75 kHz | 225 (± 15) µm | 35 (± 3) µm |
| 0.7 N/m | 45 kHz | 225 (± 15) µm | 35 (± 3) µm |

Holder chip dimensions:

| | |
|-----------|----------|
| Length | 3.40 mm |
| Width | 1.55 mm |
| Thickness | 0.315 mm |



Application examples:

Image of magnetic domains in AC - demagnetized [Co/Pd] multilayers on spherical SiO₂ nanoparticles of 4.5 μm diameter.

Tip used: HR-MFM (225C0.7 - ML1 - R)

Recorded by Fabian Göhler, Surface and Interface Physics,
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| | |
|-------------------|--------------------------|
| MFM Lever: | C = 3.0 N/m, C = 0.7 N/m |
| Magnetic Coating: | ML1, ML3 |

| | |
|----------------|-----------|
| ReflexCoating: | Al-reflex |
|----------------|-----------|