

PointProbe® Plus Magnetic Force Microscopy - Low Momentum - Reflex Coating

The NANOSENSORS™ PPP-LM-MFMR AFM probe is designed for magnetic force microscopy with reduced disturbance of the magnetic sample by the AFM tip and enhanced lateral resolution - compared to the standard PPP-MFMR probe. The force constant of this AFM probe type is specially tailored for magnetic force microscopy yielding high force sensitivity while simultaneously enabling tapping mode and lift mode operation.

The hard magnetic coating on the AFM tip is characterized by a coercivity of app. 250 Oe and a remanence magnetization of app. 150 emu/cm³ (these values were determined on a flat surface).

The SPM probe offers unique features:

- hard magnetic coating on the tip side (coercivity of app. 250 Oe, remanence magnetization of app. 150 emu/cm³)
- effective magnetic moment 0.5x of standard AFM probes
- metallic electrical conductivity
- guaranteed AFM tip radius of curvature < 30 nm
- magnetic resolution better than 35 nm
- AFM tip height 10 - 15 µm
- Al coating on detector side of AFM cantilever enhancing the reflectivity of the laser beam by a factor of about 2.5
- alignment grooves on backside of silicon holder chip
- precise alignment of the AFM cantilever position (within +/- 2 µm) when used with the Alignment Chip
- compatible with **PointProbe® Plus XY-Alignment Series**

As both coatings are almost stress-free the bending of the AFM cantilever due to stress is less than 3.5% of the AFM cantilever length. For enhanced signal strength the magnetization of the AFM tip by means of a strong permanent magnet prior to the measurement is recommended.

This AFM probe features alignment grooves on the back side of the holder chip. These grooves fit to the NANOSENSORS Alignment Chip.

Cantilever data:

Property	Nominal Value	Specified Range
Resonance Frequency [kHz]	75	45 - 115
Force Constant [N/m]	2.8	0.5 - 9.5
Length [µm]	225	215 - 235
Mean Width [µm]	28	20 - 35
Thickness [µm]	3	2 - 4

Order codes and shipping units:

Order Code	AFM probes per pack	Data sheet
PPP-LM-MFMR-10	10	of all probes
PPP-LM-MFMR-20	20	of all probes
PPP-LM-MFMR-50	50