

Cantilever Data	Value	Range*
Resonance Frequency	75 kHz	60 - 90 kHz
Force Constant	2.8 N/m	1.2 - 5.5 N/m
Length	225 μm	220 - 230 μm
Mean Width	28 μm	22.5 - 32.5 μm
Thickness	3 μm	2.5 - 3.5 μm

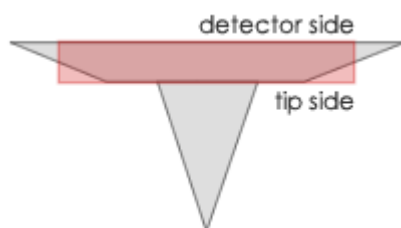
NanoWorld® Pointprobe® MFM probes are designed for magnetic force microscopy. The force constant and the special hard magnetic tip-side coating of the MFM type are optimised for this type of application. This type of AFM probe yields a very high force sensitivity, while simultaneously enabling tapping and lift mode operation.

All SPM and AFM probes of the Pointprobe® series are made from monolithic silicon which is highly doped to dissipate static charge. They are chemically inert and offer a high mechanical Q-factor for high sensitivity. The AFM tip is shaped like a polygon based pyramid with a typical height of 10-15 μm .

Additionally, this AFM probe offers unique features:

- typical AFM tip radius of curvature <50nm
- high magnetic contrast and lateral resolution <100nm
- electrically conductive coating

Soft magnetic samples may be influenced by the AFM tip magnetization!



A trapezoidal cross section of the AFM cantilever and therefore 30% wider (e.g. NCH) AFM cantilever

detector side result in easier and faster laser adjustment. Additionally, because there is simply more space to place and reflect the laser beam, a higher SUM signal is reached.

Tip shape: Standard

Coating: Magnetic

Hard Magnetic Coating / Aluminum Reflex Coating

The hard magnetic coating consists of a 40 nm thick cobalt alloy layer deposited on the tip side of the AFM cantilever which leads to a permanent magnetization of the AFM tip with the direction usually along the AFM tip axis. We recommend magnetizing the AFM tip by means of a strong magnet (e.g. a NdFeB magnet, a few millimeters in size) prior to the measurement.

The aluminum reflex coating deposited on the detector side of the AFM cantilever enhances the reflectance of the laser beam and prevents light from interfering within the AFM cantilever.

As the coating is almost stress-free the bending of the AFM cantilever due to stress is less than 2 degrees.

Order Code	Quantity	Data Sheet
MFMR-10	10	yes
MFMR-20	20	yes
MFMR-50	50	no
MFMR-W	380	yes