

Cantilever Data	Value	Range*
Resonance Frequency	75 kHz	58 - 97 kHz
Force Constant	2.8 N/m	1.4 - 5.8 N/m
Length	240 μm	235 - 245 μm
Mean Width	35 μm	30 - 40 μm
Thickness	3 μm	2.5 - 3.5 μm

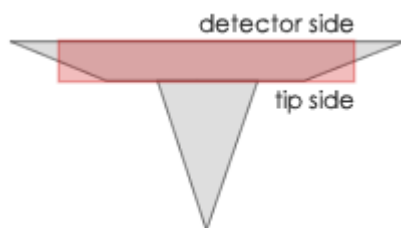
Optimized positioning through maximized AFM tip visibility

NanoWorld® Arrow™ EFM probes are designed for electrostatic force microscopy. The force constant and the special coating of the EFM type are optimised for this type of application. This type of probe yields very high force sensitivity, while simultaneously enabling tapping and lift mode operation.

All SPM and AFM probes of the Arrow™ 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. These probes feature a rectangular AFM cantilever with a triangular free end and a tetrahedral AFM tip with a typical height of 10 - 15 μm .

Additionally, this AFM probe offers an AFM tip radius of curvature of less than 25 nm.

The unique Arrow™ shape with the AFM tip position at the very end of the AFM cantilever allows easy positioning of the AFM tip on the area of interest.



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: Arrow
Coating: Electrically Conductive

PtIr5 Coating

The PtIr5 coating consists of a 23 nm thick platinum iridium5 layer deposited on both sides of the AFM cantilever. The tip side coating enhances the conductivity of the AFM tip and allows electrical contacts. The detector side coating enhances the reflectance of the laser beam by a factor of 2 and prevents light from interfering within the AFM cantilever.

The coating process is optimized for stress compensation and wear resistance. Wear at the AFM tip can occur if operating in contact-, friction- or force modulation mode. 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
ARROW-EFM-10	10	Nominal values
ARROW-EFM-20	20	Nominal values
ARROW-EFM-50	50	Nominal values
ARROW-EFM-W	380	Nominal values