

# ElectriAll-In-One

## AFM Tip

SHAPE	HEIGHT	SETBACK	RADIUS	HALF CONE ANGLE
Rotated	17 $\mu\text{m}$ (15 – 19 $\mu\text{m}$ )*	15 $\mu\text{m}$ (10 – 20 $\mu\text{m}$ )*	25 nm	20°–25° along cantilever axis, 25°–30° from side, 10° at the apex

## 4 AFM Cantilevers

Cantilever A – Contact Mode		Cantilever B – Force Modulation	
Shape	Beam	Shape	Beam
Force Constant	0.2 N/m (0.04 – 0.7 N/m)*	Force Constant	2.7 N/m (0.4 – 10 N/m)*
Resonance Frequency	15 kHz (10 – 20 kHz)*	Resonance Frequency	80 kHz (50 – 110 kHz)*
Length	500 $\mu\text{m}$ (490 – 510 $\mu\text{m}$ )*	Length	210 $\mu\text{m}$ (200 – 220 $\mu\text{m}$ )*
Width	30 $\mu\text{m}$ (25 – 35 $\mu\text{m}$ )*	Width	30 $\mu\text{m}$ (25 – 35 $\mu\text{m}$ )*
Thickness	2.7 $\mu\text{m}$ (1.7 – 3.7 $\mu\text{m}$ )*	Thickness	2.7 $\mu\text{m}$ (1.7 – 3.7 $\mu\text{m}$ )*
Cantilever C – Soft Tapping		Cantilever D – Tapping Mode	
Shape	Beam	Shape	Beam
Force Constant	7.4 N/m (1 – 29 N/m)*	Force Constant	40 N/m (7 – 160 N/m)*
Resonance Frequency	150 kHz (70 – 230 kHz)*	Resonance Frequency	350 kHz (200 – 500 kHz)*
Length	150 $\mu\text{m}$ (140 – 160 $\mu\text{m}$ )*	Length	100 $\mu\text{m}$ (90 – 110 $\mu\text{m}$ )*
Width	30 $\mu\text{m}$ (25 – 35 $\mu\text{m}$ )*	Width	50 $\mu\text{m}$ (45 – 55 $\mu\text{m}$ )*
Thickness	2.7 $\mu\text{m}$ (1.7 – 3.7 $\mu\text{m}$ )*	Thickness	2.7 $\mu\text{m}$ (1.7 – 3.7 $\mu\text{m}$ )*

\* typical range

## Coating

Electrically conductive coating of 5 nm Chromium and 25 nm Platinum on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever.

## Alignment Grooves

none

## Additional Info

Versatile monolithic silicon AFM probe with 4 different platinum coated AFM cantilevers on a single AFM holder chip for various applications: contact mode, force modulation mode, soft tapping mode and high frequency tapping / non-contact mode and electric modes such as:

- scanning capacitance microscopy (SCM)
- electrostatic force microscopy (EFM)
- Kelvin probe force microscopy (KFM)
- scanning probe lithography

The rotated AFM tips allow for more symmetric representation of high sample features. The consistent AFM tip radii ensure good resolution and reproducibility.

The AFM holder chip fits most commercial AFM systems as it is industry standard size.

The main advantage of this product compared to regular, single-cantilever AFM probes is the freedom to choose in the very last moment the right AFM cantilever for each application. You don't need to stock various AFM Probe types any more. Nevertheless, this product is not meant as a substitution to comparable single-cantilever AFM probes, because the geometry of each one of the ElectriAll-In-One AFM cantilevers differs from the geometry of comparable specialized single-cantilever AFM probes.