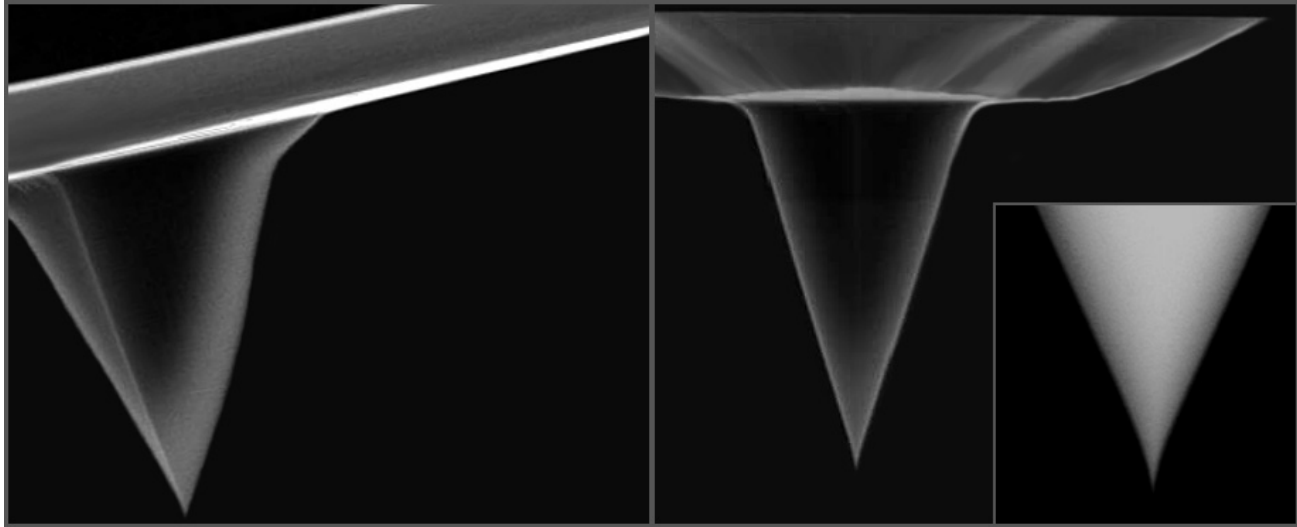
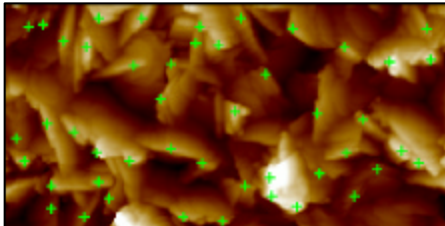


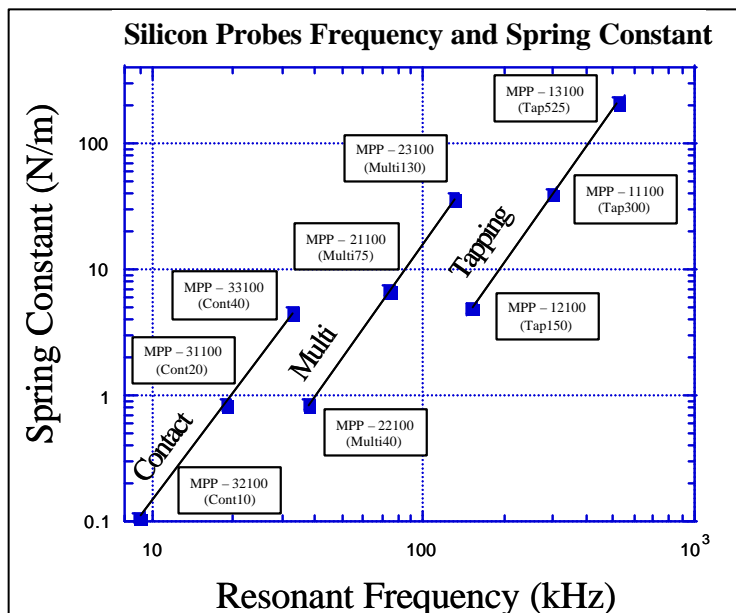
Silicon Metrology Probes for AFM Imaging



See reverse side for full tip, frequency, and spring constant specification.



Metrology probes are fabricated from monolithic p-type silicon. This process provides the sharpest tips, the cleanest laser spots, and the most uniform cantilevers. The image on the left is a scan of a titanium thin film. The green marks represent the points of maximum slope in the image. These points indicate that this NanoDevices' Metrology Probe has an 8 nm tip radius.



The Tip: NanoDevices Metrology Probes are the cantilever of choice for high resolution AFM measurement in all modes of imaging. The apex of the Metrology Probe tip is typically less than 10 nm. After the apex, the first micron of the tip is carefully sharpened to produce an exceptionally steep and smooth profile. This sharpening minimizes the tip's included angle, which in turn minimizes convolution effects, which in turn provides the highest resolution where you need it most. The bulk of tip stands 17 μm tall and is fabricated to be symmetric on the scan angle of the AFM.

Silicon Metrology Probe Full Specification

Sales: 800-715-8440, Tech. 805-696-9002

Coating:	None, Optional: Al, Co	Tip Side Angle: 18 deg.
Tip Radius:	10 nm	Tip Front Angle: 15 deg.
Tip Height:	17 μm	Tip Back Angle: 25 deg.
Width:	35 μm	Material: (100) Silicon, n-type

Parameter	Tap525 (MPP-13100)	Tap300 (MPP-11100)	Tap150 (MPP-12100)
Length	125 $\mu\text{m} \pm 10 \mu\text{m}$	125 $\mu\text{m} \pm 10 \mu\text{m}$	125 $\mu\text{m} \pm 10 \mu\text{m}$
Width	35 $\mu\text{m} \pm 5 \mu\text{m}$	35 $\mu\text{m} \pm 5 \mu\text{m}$	35 $\mu\text{m} \pm 5 \mu\text{m}$
Thickness	7 $\mu\text{m} \pm 1 \mu\text{m}$	4 $\mu\text{m} \pm 1 \mu\text{m}$	2 $\mu\text{m} \pm 1 \mu\text{m}$
Resonant Frequency	525 kHz ± 150 kHz	300 kHz ± 100 kHz	150 kHz ± 50 kHz
Spring Constant	200 N/m	40 N/m	5 N/m
Quality Factor	300 (typical)	300 (typical)	300 (typical)

Parameter	Multi130 (MPP-23100)	Multi75 (MPP-21100)	Multi40 (MPP-22100)
Length	225 $\mu\text{m} \pm 10 \mu\text{m}$	225 $\mu\text{m} \pm 10 \mu\text{m}$	225 $\mu\text{m} \pm 10 \mu\text{m}$
Width	35 $\mu\text{m} \pm 5 \mu\text{m}$	35 $\mu\text{m} \pm 5 \mu\text{m}$	35 $\mu\text{m} \pm 5 \mu\text{m}$
Thickness	7 $\mu\text{m} \pm 1 \mu\text{m}$	4 $\mu\text{m} \pm 1 \mu\text{m}$	2 $\mu\text{m} \pm 1 \mu\text{m}$
Resonant Frequency	130 kHz ± 50 kHz	75 kHz ± 25 kHz	40 kHz ± 20 kHz
Spring Constant	35 N/m	3 N/m	0.9 N/m
Quality Factor	300 (typical)	300 (typical)	300 (typical)

Parameter	Contact40 (MPP-33100)	Contact20 (MPP-31100)	Contact10 (MPP-32100)
Length	450 $\mu\text{m} \pm 10 \mu\text{m}$	450 $\mu\text{m} \pm 10 \mu\text{m}$	450 $\mu\text{m} \pm 10 \mu\text{m}$
Width	35 $\mu\text{m} \pm 5 \mu\text{m}$	35 $\mu\text{m} \pm 5 \mu\text{m}$	35 $\mu\text{m} \pm 5 \mu\text{m}$
Thickness	7 $\mu\text{m} \pm 1 \mu\text{m}$	4 $\mu\text{m} \pm 1 \mu\text{m}$	2 $\mu\text{m} \pm 1 \mu\text{m}$
Resonant Frequency	40 kHz ± 10 kHz	20 kHz ± 7 kHz	10 kHz ± 5 kHz
Spring Constant	5 N/m	0.9 N/m	0.1 N/m
Quality Factor	300 (typical)	300 (typical)	300 (typical)

Notes:

- 1: The columns of probes have the same thickness 7 μm , 4 μm , and 2 μm
- 2: The rows of probes have the same lengths 125 μm , 225 μm , 450 μm
- 3: The highlighted probes the most commonly used
- 4: All probes are available with backside Aluminum coating
- 5: All probes are available in 3 x 5 Matrix Arrays