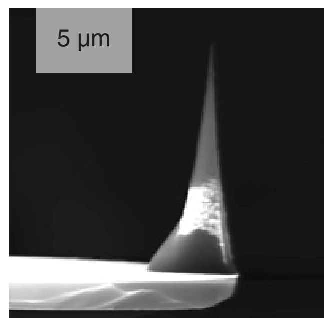
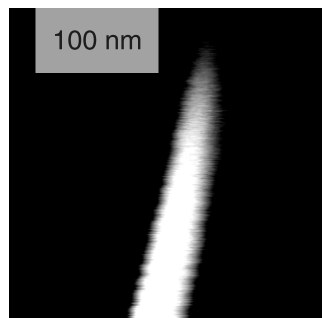
Diamond AFM Probe ART D300

ART™ tips are specially grown in CVD process and attached to silicon cantilevers for use in AFM. The probes have high aspect ratio and small tip radius.

The probe is highly resistant to wear, which is useful when fast scanning speed is needed, or when the surface contains sharp and rigid edges. Other applications are nanoindention, scratching and nanolithography experiments.



SEM image of the SCD probe tip.

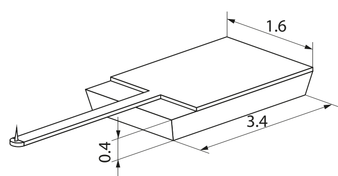


SEM image of the SCD tip end.

Tip material	Single Crystal Diamond (SCD)
Tip radius	5-10 nm
Tip aspect ratio*	about 5:1
Tip full cone angle*	about 10°
SCD orientation	<100> along the tip axis
Glue type	Non-conducting
Glue temperature stability	70°C (160°F)

*When measured at least on the last 200 nm of the tip end.

Cantilever



ART™ diamond probes are glued onto rectangular (diving-board) silicon etched cantilevers. The glue used to attach the tip to the cantilever is not conducting, so the probe is not applicable for conductive AFM measurements. Cantilever backside is coated by Aluminium.

The chip holder size is 1.6 mm x 3.4 mm x 0.4 mm.

Modes	Cantilever Length, l±5, µm	Cantilever Width, w±3, µm	Cantilever Thickness, µm			Resonant Frequency, kHz			Force Constant, N/m		
			min	Typical	max	min	Typical	max	min	Typical	max
Tapping. Contact. Non-contact. Nano-indentation. Force lithography.	125	35	3.5	4	4.5	265	300	400	20	40	75

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