Product Description

Unique probes with single crystal diamond tip for topography and electrical measurements. Nominal values: force constant – 40 N/m, resonance frequency – 180 kHz.
Highly Conductive Long Lasting Sharp Diamond Probes formed by a unique patented process ensure the best possible wear and electrical performance. The tips are sharper and last longer than any other electrical AFM probe.
The probes are highly resistant to mechanical destructions and keep their sharpness during the whole working day and more!
These probes enable highly repeatable high resolution operation to ensure you consistently get the best possible data from your system.

The conductive diamond coating is highly doped with boron which leads to a macroscopic resistivity of 0.003 – 0.005 Ohm•cm. A sharp tip is formed from a single diamond crystal which yields an unsurpassed combination of resolution, mechanical properties and electrical performance. Contact resistance is between 10k and 100k ohms depending on contact radius measured on a silver coated surface. A gold reflex coating is deposited on the detector side of the cantilever to enhance the reflectance of the laser beam.
Upon customers' request the next options are available:
- super sharp probes with typical curvature radius 2nm;
- probes with another lever specification;
- probes with individually characterized spring constant and tip radius to enable fully quantitative nanomechanical measurements.

Cantilever specifications

Geometry:	Rectangular
Material:	Diamond coated Si
Cantilever bending:	< 3°

Bulk tip specifications

Si geometry:	Rotated (Symmetric)
Si tip height (h):	15 ± 2 µm
Front angle:	25 ± 2°
Back angle:	22 ± 2°
Side angle:	18 ± 2°
Tip offset:	10 - 20 µm

Single crystal diamond tip specifications

Geometry:	Cone
Tip radius:	Typical 7nm, guaranteed <10nm
Tip height (h):	300 nm ± 100 nm
Tilt angle:	0 ± 1°
Tip material:	Single crystal diamond Highly doped with boron
Cone ½ angle:	15 ± 2°

General Features

Chip size	3.4x1.6x0.3
Reflective side coating	Au
Tip coating	Single crystal diamond, Highly doped with boron
Tip curvature radius	typical 7nm, guaranteed <10nm

Special Features

Cantilever series	Cantilever length, L±10µm	Cantilever width, W±5µm	Cantilever thickness, T±0.5µm	Resonant frequency, kHz			Force constant, N/m		
				min	typical	max	min	typical	max
DEP30	225	28	3.0	140	180	220	20	40	60