

Type: Hybrid-Nitride™ Probe

Leading edge in sharpness and durability

NanoWorld Hybrid-Nitride™ probes are designed for contact mode operation in a wide range of applications, for example imaging of biological samples in liquids.

The Hybrid-Nitride™ probes have silicon nitride cantilevers with very low force constants and integrated oxide sharpened, pyramidal tips with a height of 3.5 μm (see Fig.2). This probe series features two triangular cantilevers on one side and two rectangular cantilevers on the other side of a support chip that is made of SU-8 epoxy material. All cantilevers are stress compensated and have a 80nm chromium / titanium / gold backside coating for high laser reflectivity. The tip is located 4μm behind the free end of the cantilever. The support chips (no glass strips!) have beveled corners and integrated notches for easy handling and indication of the triangular cantilever side (see Fig.1).

The typical tip radius of curvature of the oxide sharpened tips is below 15nm.
The bending of the cantilevers is below 3°.

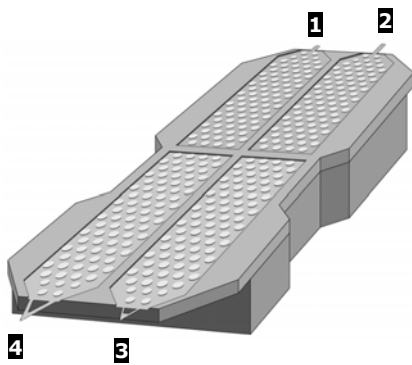


Fig. 1: Probe chip with cantilevers 1 - 4

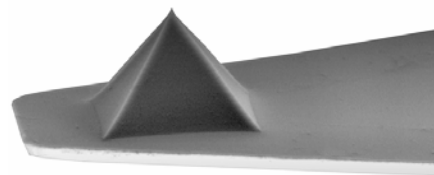


Fig. 2: Cantilever with oxide sharpened, pyramidal tip

Cantilever #	1	2	3	4
Shape	Rectangular		Triangular	
Overall Thickness	500nm	500nm	500nm	500nm
Length	100μm	200μm	100μm	200μm
Width (single beam)	40μm	40μm	14μm	28μm
Force Constant	0.26 N/m	0.03 N/m	0.17 N/m	0.05 N/m
Resonance Frequency	48 kHz	12 kHz	48 kHz	12 kHz

Please note: The above given mechanical properties are typical values.

Order Code	Quantity	Data Sheet
HNP-20	20	Nominal values
HNP-50	50	Nominal values

For more information contact: info@nanoworld.com

Product claims of licensed US Patent Nos. 5221415, 5399232 and 5580827.
All data are subject to change without notice.

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