

# HQ:XSC11/Hard/Al BS

## AFM Probe with 4 Different Long Scanning, DLC Hardened Cantilevers for Various Applications

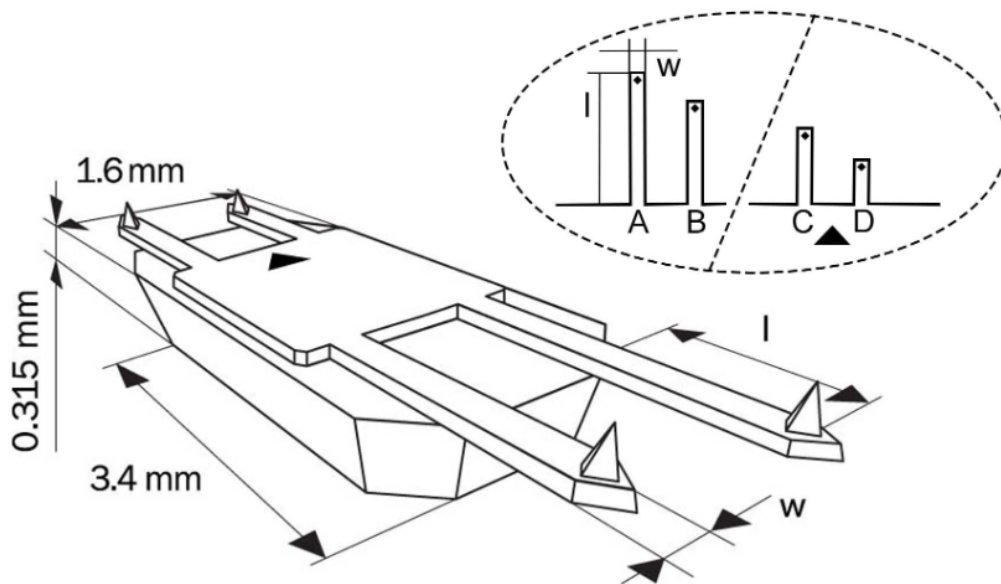
AFM probes of the HQ:XSC11 series have four different AFM cantilevers, two on each side of the holder chip. They can be used in various applications.

The HQ AFM probes offer high consistency of the AFM tip radius, the AFM cantilever reflectivity and the quality factor.

A 20 nm wear-resistant DLC coating is applied to the tip side of the AFM cantilevers. The coating is chemically inert and more hydrophobic than silicon with a natural oxide layer. The aluminum reflective coating enhances the laser reflectivity of the AFM cantilevers by approximately 2.5 times.

### Coating

Hard Diamond-Like-Carbon



## AFM Probe Specifications

### AFM Tip

SHAPE	HEIGHT	FULL CONE ANGLE	RADIUS
Rotated	15 $\mu\text{m}$ (12 – 18 $\mu\text{m}$ )*	40°	< 8 nm

### AFM Cantilever

CANTILEVER	SHAPE	FORCE CONST.	RES. FREQ.	LENGTH	WIDTH	THICKNESS
Cantilever A	Beam	0.2 N/m (0.1 – 0.4 N/m)*	15 kHz (12 – 18 kHz)*	500 $\mu\text{m}$ (1 – 505 $\mu\text{m}$ )*	30 $\mu\text{m}$ (27 – 33 $\mu\text{m}$ )*	2.7 $\mu\text{m}$ (2.2 – 3.2 $\mu\text{m}$ )*
Cantilever B	Beam	2.7 N/m (1.1 – 5.6 N/m)*	80 kHz (60 – 100 kHz)*	210 $\mu\text{m}$ (1 – 215 $\mu\text{m}$ )*	30 $\mu\text{m}$ (27 – 33 $\mu\text{m}$ )*	2.7 $\mu\text{m}$ (2.2 – 3.2 $\mu\text{m}$ )*
Cantilever C	Beam	7 N/m (3 – 16 N/m)*	155 kHz (115 – 200 kHz)*	150 $\mu\text{m}$ (1 – 155 $\mu\text{m}$ )*	30 $\mu\text{m}$ (27 – 33 $\mu\text{m}$ )*	2.7 $\mu\text{m}$ (2.2 – 3.2 $\mu\text{m}$ )*
Cantilever D	Beam	42 N/m (17 – 90 N/m)*	350 kHz (250 – 465 kHz)*	100 $\mu\text{m}$ (1 – 105 $\mu\text{m}$ )*	50 $\mu\text{m}$ (47 – 53 $\mu\text{m}$ )*	2.7 $\mu\text{m}$ (2.2 – 3.2 $\mu\text{m}$ )*

\* typical values