PointProbe® Plus - High Quality-Factor - Force Modulation Mode - Reflex Coating

The **P**oint**P**robe® **P**lus **Q30K-Plus** combines the well-known features of the proven **PointProbe® Plus** series such as a further reduced and more reproducible AFM tip radius (typical AFM tip radius less than 7 nm) as well as a more defined AFM tip shape with a high mechanical quality factor (Q-factor) under ultra high vacuum (UHV) conditions. The typical Q-factor of over 35000 under UHV conditions and the aluminum coating on the detector side provide excellent resolution and an enhanced signal to noise ratio.

The FM type is offered for force modulation microscopy. The force constant of this AFM probe spans the gap between contact and non-contact mode and is specially tailored for the force modulation mode under UHV conditions. Due to its high Q-factor and the typical features of the PPP series this AFM probe combines high operation stability with outstanding sensitivity and fast scanning ability.

The AFM probe offers unique features:

- guaranteed AFM tip radius of curvature < 10 nm
- AFM tip height 10 - 15 µm
- highly doped silicon to dissipate static charge
- Al coating on detector side of AFM cantilever
- excellent mechanical Q-factor under UHV conditions for high sensitivity
- alignment grooves on backside of silicon holder chip
- precise alignment of the AFM cantilever position (within +/- 2 µm) when used with the Alignment Chip
- compatible with **PointProbe® Plus XY-Alignment Series**

The reflective coating is an approximately 30 nm thick aluminum coating on the detector side of the AFM cantilever which enhances the reflectivity of the laser beam by a factor of about 2.5. Furthermore it prevents light from interfering within the AFM cantilever. As the coating is nearly stress-free the bending of the AFM cantilever due to stress is less than 2 degrees.

This AFM probe features alignment grooves on the back side of the holder chip. These grooves fit to the NANOSENSORS Alignment Chip.

Cantilever data:

Property	Nominal Value	Specified Range
Resonance Frequency [kHz]	75	45 - 115
Force Constant [N/m]	2.8	0.5 - 9.5
Length [µm]	225	215 - 235
Mean Width [µm]	28	20 - 35
Thickness [µm]	3	2 - 4
Quality Factor	30000	30000 - 50000

Order codes and shipping units:

Order Code	AFM probes per pack	Data sheet
PPP-QFMR-10	10	of all probes