

Product description

uniqprobe - HeartBeatCantilever – for ScanAsyst** and Peak Force Tapping**

NANOSENSORS™ qp-HBC AFM probes are designed for use in ScanAsyst® or PeakForce Tapping™** in air. The qp-HBC probes are also compatible for contact and non-contact or soft tapping mode AFM imaging. The combination of soft AFM cantilever and fairly high resonance frequency enables stable and fast measurements with reduced AFM tip-sample interaction.

The NANOSENSORS™ uniprobe combines the well-known features of the other NANOSENSORS™ AFM probe series such as high application versatility and compatibility with most commercial SPMs with the additional advantage of a strongly reduced dispersion of force constant and resonance frequency.

The unsurpassed uniformity of the mechanical characteristics of the uniprobe series is particularly important for applications, where a large number of AFM probes with known and near identical force constants or resonance frequencies are needed.

**PeakForce Tapping™ and ScanAsyst® are registered trademarks of Bruker Corporation.

The AFM probe offers unique features:

- compatible for use in ScanAsyst® or PeakForceTapping™** in air
- small dispersion of force constant and resonance frequency
- circular symmetric AFM tip shape with a hyperbolic profile
- typical AFM tip height 7µm
- typical AFM tip radius of curvature smaller than 10nm
- Al coating on detector side of AFM cantilever
- AFM tip and AFM cantilevers are made of a quartz-like material
- alignment grooves on backside of silicon holder chip
- AFM tip repositioning accuracy of better than $\pm 8\mu\text{m}$ (in combination with [Alignment Chip](#))
- chemically inert

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]	60	45 - 75
Force Constant [N/m]	0.5	0.35 - 0.8
Length [μm]	115	110 - 120
Mean Width [μm]	25	24 - 26
Thickness [nm]	1000	970 - 1030

Order codes and shipping units:

Order Code	AFM probes per pack
qp-HBC-10	10
qp-HBC-20	20
qp-HBC-50	50

Special handling information for NANOSENSORS™ uniprbes

Due to their unique geometry the tips of the uniprbes are more susceptible to tip damage by electrostatic discharge (ESD) than other Silicon-SPM-Probes.

Electric fields near the probe chip may lead to field evaporation which can blunt the tip apex of the probe tip. Therefore the NANOSENSORS™ uniprbes are shipped in specially designed ESD-safe chip carriers.

NANOSENSORS™ recommends to their customers to take appropriate precautions to avoid tip damage due to electrostatic discharge when handling the probes. This can for example be done by using anti-electrostatic mats, wrist bands and tweezers.

