Product description

uniqprobe™ for Soft- , Standard- , Fast Tapping/Dynamic AFM Imaging

NANOSENSORS™ **qp-fast** AFM probes with its 3 AFM cantilevers are designed for soft-, standard- and fast- Non-Contact or Tapping Mode AFM imaging (also known as attractive or dynamic mode). This AFM probe combines high operation stability with outstanding sensitivity and fast scanning ability in air and liquid environments.
A metallic layer (Au) is coated on the detector side of the AFM cantilever. The AFM cantilever bending is less than 2º.

The NANOSENSORS™ uniqprobe 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 uniqprobe 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.

The AFM probe offers unique features:

- 3 AFM cantilevers design for soft-, standard- and fast- Tapping/Dynamic Mode operation
- small dispersion of force constant and resonance frequency
- circular symmetric AFM tip shape with a hyperbolic profile
- typical AFM tip height 6µm
- typical AFM tip radius of curvature smaller than 10nm
- Au 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 ± 8µm (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]	**CB1:** 800 **CB2:** 420 **CB3:** 250	**CB1:** 600 - 1000 **CB2:** 340 - 500 **CB3:** 200 - 300
Force Constant [N/m]	**CB1:** 80 **CB2:** 30 **CB3:** 15	**CB1:** 50 - 140 **CB2:** 20 - 45 **CB3:** 10 - 20
Length [µm]	**CB1:** 40 **CB2:** 60 **CB3:** 80	**CB1:** 35 - 45 **CB2:** 55 - 65 **CB3:** 75 - 85
Mean Width [µm]	**CB1:** 22 **CB2:** 27 **CB3:** 32	**CB1:** 20 - 24 **CB2:** 25 - 29 **CB3:** 30 - 34
Thickness [nm]	**CB1:** 2500 **CB2:** 2500 **CB3:** 2500	**CB1:** 2470 - 2530 **CB2:** 2470 - 2530 **CB3:** 2470 - 2530

Order codes and shipping units:

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

Special handling information for NANOSENSORS™ uniqprobes

Due to their unique geometry the tips of the uniqprobes 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™ uniqprobes 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.