**Product description**

# uniqprobe™ uniform quality SPM probe – Contact or dynamic mode for Biology with Triangular cantilevers

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 sensors of the uniqprobe series are especially adapted for molecular biology, biophysics and quantitative nano-mechanical studies.

The reflective gold coating deposited on the detector side of the AFM cantilever covers only the free end above where the AFM tip is located. Main advantages of the uniqprobe coating are considerably less AFM cantilever bending and reduced drift particularly for measurements in liquid environments.

NANOSENSORS™ **qp-BioT** AFM probes are designed for contact mode or dynamic mode AFM imaging in air or liquid environment. These AFM probes feature two different triangular AFM cantilevers on one side of the support chip. The uniqprobe BioT type offers an alternative to silicon nitride AFM probes, with the advantage of taller AFM tips with smaller opening angles and reduced drift.

**The AFM probe offers unique features:**

- small dispersion of force constant and resonance frequency
- typical AFM tip height 7µm
- typical AFM tip radius of curvature smaller than 10nm
- stress free AFM cantilevers with considerably less bending
- AFM tip and AFM cantilevers are made of a quartz-like material
- reduced drift for applications in liquid environments
- AFM tip repositioning accuracy of better than ± 8 µm (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:** 50<br>**CB2:** 20 | **CB1:** 42 - 58<br>**CB2:** 16 - 24 |
| **Force Constant [N/m]** | **CB1:** 0.3<br>**CB2:** 0.08 | **CB1:** 0.15 - 0.45<br>**CB2:** 0.06 - 0.12 |
| **Length [µm]** | **CB1:** 100<br>**CB2:** 200 | **CB1:** 95 - 105<br>**CB2:** 195 - 205 |
| **Mean Width [µm]** | **CB1:** 14<br>**CB2:** 28 | **CB1:** 13 - 15<br>**CB2:** 27 - 29 |
| **Thickness [nm]** | **CB1:** 900<br>**CB2:** 900 | **CB1:** 870 - 930<br>**CB2:** 870 - 930 |

## Order codes and shipping units:

| Order Code | AFM probes per pack |
|---|---|
| **qp-BioT-10** | 10 |
| **qp-BioT-20** | 20 |
| **qp-BioT-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.