

## Product description

# Advanced Tip at the End of the Cantilever™ Force Modulation Mode

**NANOSENSORS™ AdvancedTEC™ FM AFM** tips are designed for force modulation mode imaging. They feature a tetrahedral AFM tip that protrudes from the very end of the AFM cantilever. This unique feature allows precise positioning and makes the **AdvancedTEC™** the only AFM scanning probe in the world that offers **REAL TIP VISIBILITY FROM TOP**, even when the AFM probe is tilted due to its mounting onto the AFM head. This feature makes them the premium choice for all applications where the AFM tip has to be placed exactly on the point of interest and/or has to be visible (e.g. Nanomanipulation).

Due to their very small half cone angles the AFM tips of the **AdvancedTEC™** Series show great performance on samples that have a small pattern size combined with steep sample features.

## The AFM probe offers unique features:

- real AFM tip visibility from top
- typical AFM tip radius of curvature better than 10 nm
- AFM tip height 15 - 20  $\mu\text{m}$
- monolithic silicon
- highly doped silicon to dissipate static charge
- chemically inert
- high mechanical Q-factor for high sensitivity

## Cantilever data:

Property	Nominal Value	Specified Range
Resonance Frequency [kHz]	85	50 - 130
Force Constant [N/m]	2.8	0.7 - 9
Length [ $\mu\text{m}$ ]	240	230 - 250
Mean Width [ $\mu\text{m}$ ]	35	30 - 40
Thickness [ $\mu\text{m}$ ]	3	2 - 4

## Order codes and shipping units:

Order Code	AFM probes per pack
ATEC-FM-10	10
ATEC-FM-20	20
ATEC-FM-50	50

### Special handling information for NANOSENSORS™ AdvancedTEC probes

Due to their unique geometry the tips of the AdvancedTEC probes 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™ AdvancedTEC probes 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.

