Conductive Diamond Coated Tip - Non-Contact/Tapping Mode - High Resonance Frequency - Reflex Coating

NANOSENSORS™ CDT-NCHR AFM probes are designed for non-contact mode or tapping mode AFM (also known as: attractive or dynamic mode). This sensor type combines high operation stability with outstanding sensitivity and fast scanning ability. For applications that require a wear resistant and an electrically conductive AFM tip we recommend this type. Some applications are Tunneling AFM and Scanning Capacitance Microscopy (SCM). The CDT Diamond Coating is highly doped and the total resistance measured in contact to a platinium surface is < 10 kOhm. The typical macroscopic AFM tip radius of curvature is between 100 and 200 nm. Nanoroughness in the 10 nm regime improves the resolution on flat surfaces.

The AFM probe offers unique features:

- real diamond coating, highly doped
- AFM tip height 10 - 15 µm
- high mechanical Q-factor for high sensitivity

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]	400	225 - 610
Force Constant [N/m]	80	23 - 225
Length [µm]	125	115 - 135
Mean Width [µm]	30	22.5 - 37.5
Thickness [µm]	4	3 - 5

Order codes and shipping units:

Order Code	AFM probes per pack	Data sheet
CDT-NCHR-10	10	of all probes
CDT-NCHR-20	20	of all probes
CDT-NCHR-50	50	---------