

SuperSharpSilicon™ - Non-Contact / Tapping Mode - Long Cantilever - Reflex Coating

NANOSENSORS™ SSS-NCLR probes are designed for non-contact mode or tapping mode AFM. They are offered as an alternative to the NANOSENSORS™ high frequency non contact type (NCH). The SSS-NCLR is recommended if the feedback loop of the microscope does not accept high frequencies (400 kHz) or if the detection system needs a minimum AFM cantilever length > 125 µm. Compared to the high frequency non-contact type NCH the maximum scanning speed is slightly reduced. This AFM probe combines high operation stability with outstanding sensitivity and fast scanning ability.

For enhanced resolution of nanostructures and microroughness we offer our Super SharpSilicon™ AFM tip with unrivalled sharpness.

The AFM probe offers unique features:

- guaranteed AFM tip radius of curvature < 5 nm
- typical AFM tip radius of curvature of 2 nm
- typical aspect ratio at 200 nm from AFM tip apex in the order of 4:1
- half cone angle at 200 nm from apex < 10°
- highly doped silicon to dissipate static charge
- high mechanical Q-factor for high sensitivity
- alignment grooves on backside of silicon holder chip
- precise alignment of the AFM cantilever position (within +/- 2 µm) when used with the Alignment Chip
- compatible with PointProbe® Plus XY-Alignment Series

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]	190	146 - 236
Force Constant [N/m]	48	21 - 98
Length [µm]	225	215 - 235
Mean Width [µm]	38	30 - 45
Thickness [µm]	7	6 - 8

Order codes and shipping units:

Order Code	AFM probes per pack	Data sheet
SSS-NCLR-10	10	of all probes
SSS-NCLR-20	20	of all probes
SSS-NCLR-50	50