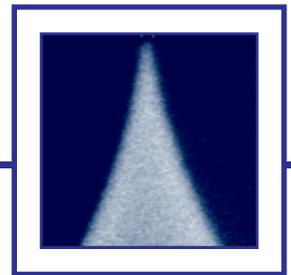
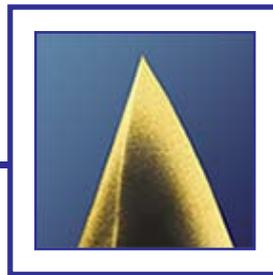
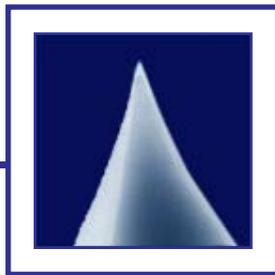
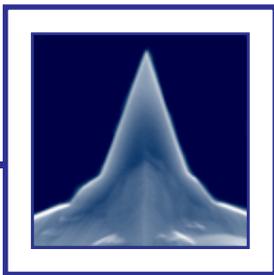
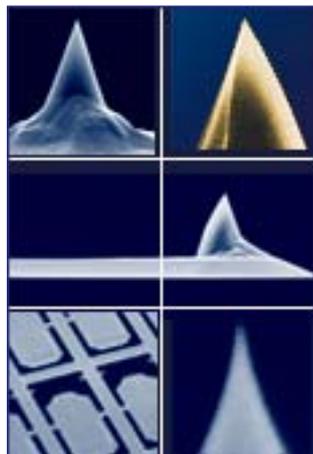


Product Catalogue

Budget *Sensors*





Products:

- Silicon AFM Probes for:
 - Tapping Mode / Intermittent Contact
 - Force Modulation
 - Contact Mode
- DLC probes
- Conductive AFM probes
- Magnetic AFM Probes
- Gold coated AFM Probes
- All-In-One AFM Probes

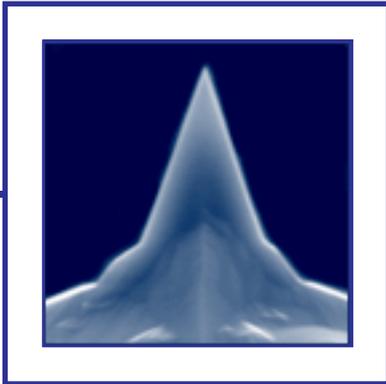
- Silicon Nitride AFM probes

- Budget *ComboBox*

- Calibration Standards
 - Tip Check - AFM Tip Characterizer
 - HS-20MG - Height Calibration Standard with 20nm step height
 - HS-100MG - Height Calibration Standard with 100nm step height
 - HS-500MG - Height Calibration Standard with 500nm step height
 - CS-20NG - XYZ Calibration Nanogrid with 20nm step height

BudgetSensors® AFM probes are an excellent choice for your AFM measurements!

Made of monolithic silicon, they fit into the most commercially available AFMs (VEECO, DI Nanoscope, Asylum Research, Agilent/Molecular Imaging, PSI, JEOL, and others) and outperform all other silicon SPM probes available on the market when it comes to sharpness, symmetry and consistency.



Tapping Mode

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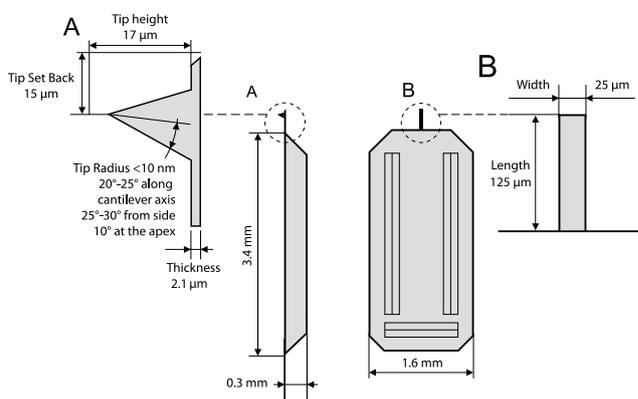


AFM probe Model: Tap150-G



This probe has alignment grooves on the backside of the holder chip.

- Soft Tapping Mode, Intermittent Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none
- This probe uses an "on scan angle" symmetric tip to provide a more symmetric representation of features over 200 nm.

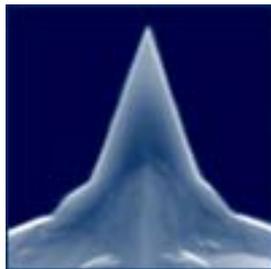


	Typical Values	Range
Resonant Frequency	150 kHz	+/- 75 kHz
Force Constant	5 N/m	1.5 - 15 N/m
Cantilever Length	125 µm	+/- 10 µm
Mean Width	25 µm	+/- 5 µm
Thickness	2.1 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	none	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap150-G-10	10 pieces	none	
Tap150-G-50	50 pieces	none	
Tap150-G-380	380 pieces	none	

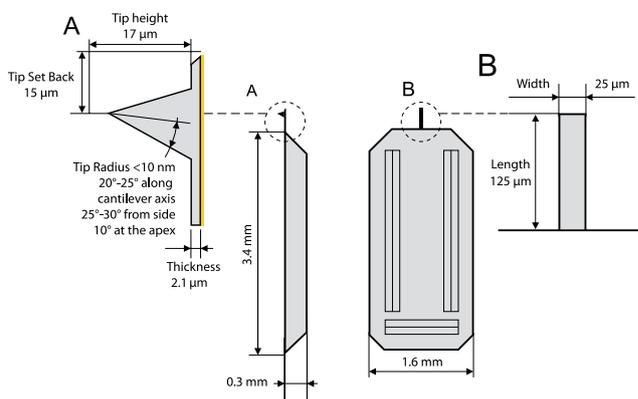


AFM probe Model: Tap150AI-G



This probe has alignment grooves on the backside of the holder chip.

- Soft Tapping Mode, Intermittent Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an "on scan angle" symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	150 kHz	+/- 75 kHz
Force Constant	5 N/m	1.5 - 15 N/m
Cantilever Length	125 µm	+/- 10 µm
Mean Width	25 µm	+/- 5 µm
Thickness	2.1 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	Aluminium Reflex	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap150AI-G-10	10 pieces	Aluminium Reflex	
Tap150AI-G-50	50 pieces	Aluminium Reflex	
Tap150AI-G-380	380 pieces	Aluminium Reflex	

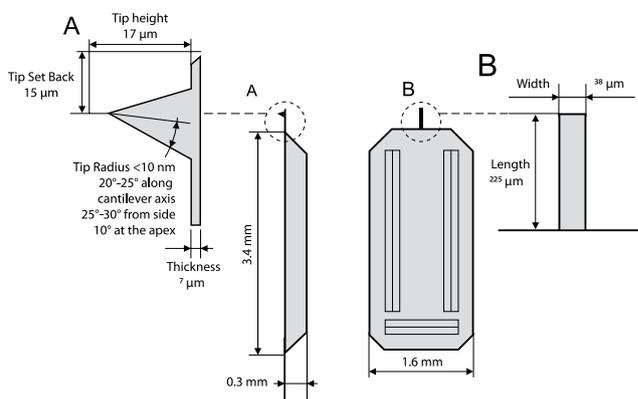


AFM probe Model: Tap190-G



This probe has alignment grooves on the backside of the holder chip.

- Tapping Mode, Intermittent Contact Mode, Long Cantilever
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none
- This probe uses an "on scan angle" symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	190 kHz	+/- 60 kHz
Force Constant	48 N/m	20 - 100 N/m
Cantilever Length	225 μm	+/- 12 μm
Mean Width	38 μm	+/- 9 μm
Thickness	7 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 10 nm	
Coating	none	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap190-G-10	10 pieces	none	
Tap190-G-50	50 pieces	none	
Tap190-G-380	380 pieces	none	

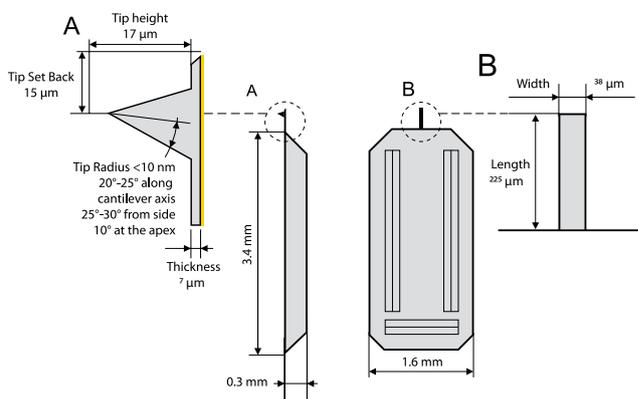


AFM probe Model: Tap190AI-G



This probe has alignment grooves on the backside of the holder chip.

- Tapping Mode, Intermittent Contact Mode, Long Cantilever
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an "on scan angle" symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	190 kHz	+/- 60 kHz
Force Constant	48 N/m	20 - 100 N/m
Cantilever Length	225 µm	+/- 12 µm
Mean Width	38 µm	+/- 9 µm
Thickness	7 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	Aluminium Reflex	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

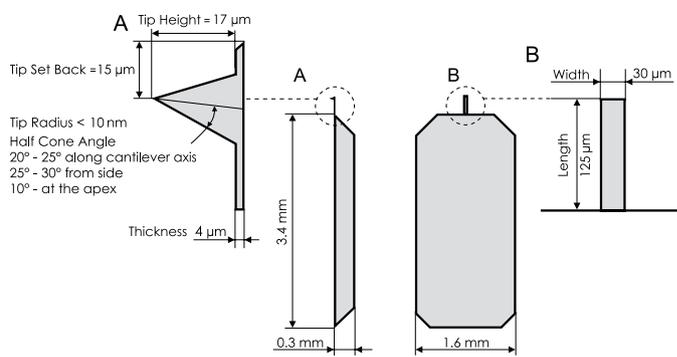
Order Code	Units in Package	Coating	
Tap190AI-G-10	10 pieces	Aluminium Reflex	
Tap190AI-G-50	50 pieces	Aluminium Reflex	
Tap190AI-G-380	380 pieces	Aluminium Reflex	



AFM probe Model: Tap300!;



- Tapping, Intermittent Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

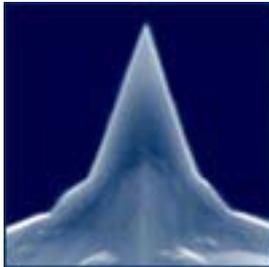


	Typical Values	Range
Resonant Frequency	300 kHz	+/- 100 kHz
Force Constant	40 N/m	20 - 75 N/m
Cantilever Length	125 μm	+/- 10 μm
Mean Width	30 μm	+/- 5 μm
Thickness	4 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 10 nm	
Coating	none	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

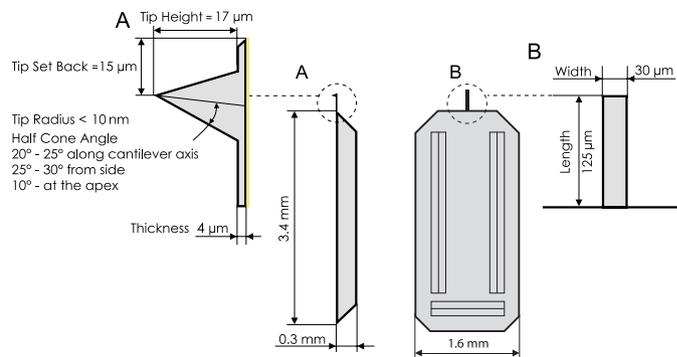
Order Code	Units in Package	Coating	
Tap300!; -10	10 pieces	none	
Tap300!; -50	50 pieces	none	
Tap300!; -W	380 pieces	none	



AFM probe Model: Tap300Al-G

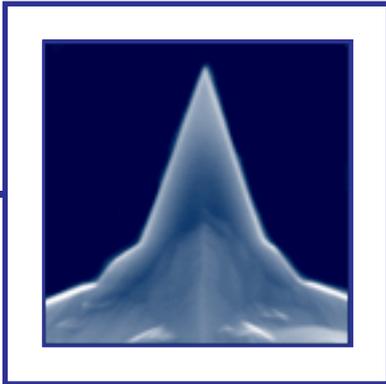


- Tapping Mode, Intermittent Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.
- With alignment grooves



	Typical Values	Range
Resonant Frequency	300 kHz	+/- 100 kHz
Force Constant	40 N/m	20 - 75 N/m
Cantilever Length	125 µm	+/- 10 µm
Mean Width	30 µm	+/- 5 µm
Thickness	4 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	30 nm thick Aluminium coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap300Al-G-10	10 pieces	Aluminium Reflex	
Tap300Al-G-50	50 pieces	Aluminium Reflex	
Tap300Al-G-W	380 pieces	Aluminium Reflex	



Force Modulation

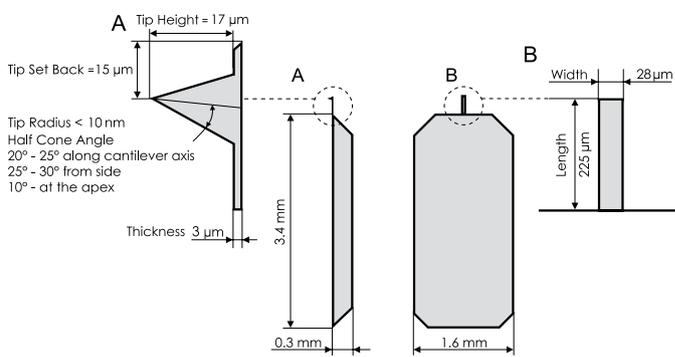
Budget *Sensors*



AFM probe Model: Multi75!;



- Force Modulation, Light Tapping, Pulsed Force Mode (PFM)
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

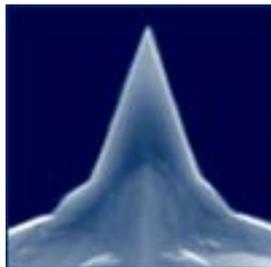


	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 µm	+/- 10 µm
Mean Width	28 µm	+/- 5 µm
Thickness	3 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	none	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

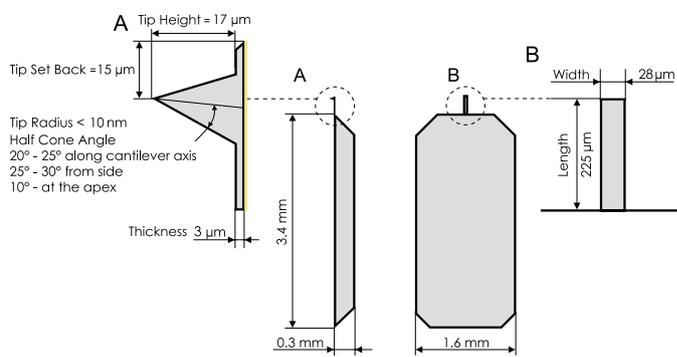
Order Code	Units in Package	Coating	
Multi75-G-10	10 pieces	none	
Multi75-G-50	50 pieces	none	
Multi75-G-W	380 pieces	none	



AFM probe Model: Multi75AI



- Force Modulation, Light Tapping, Pulsed Force Mode (PFM)
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

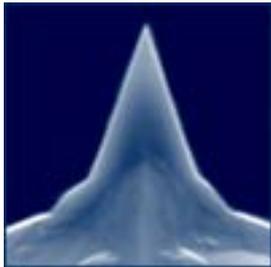


	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 µm	+/- 10 µm
Mean Width	28 µm	+/- 5 µm
Thickness	3 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	30 nm thick Aluminium coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Multi75AI-10	10 pieces	Aluminium Reflex	
Multi75AI-50	50 pieces	Aluminium Reflex	
Multi75AI-W	380 pieces	Aluminium Reflex	

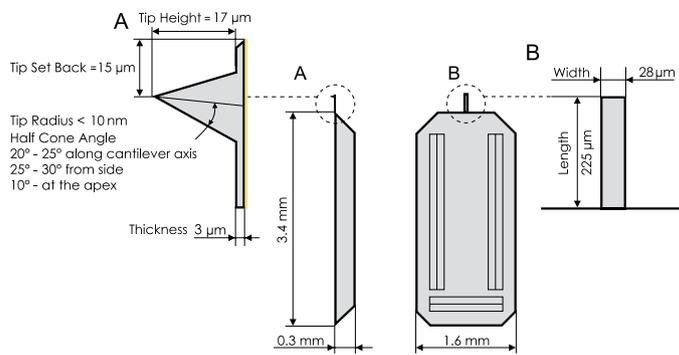


AFM probe Model: Multi75Al-G



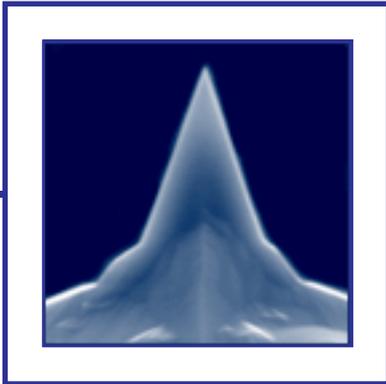
This probe has alignment grooves on the backside of the holder chip.

- Force Modulation, Pulsed Force Mode (PFM)
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 µm	+/- 10 µm
Mean Width	28 µm	+/- 5 µm
Thickness	3 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	30 nm thick Aluminium coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Multi75Al-G-10	10 pieces	Aluminium Reflex	
Multi75Al-G-50	50 pieces	Aluminium Reflex	



Contact Mode

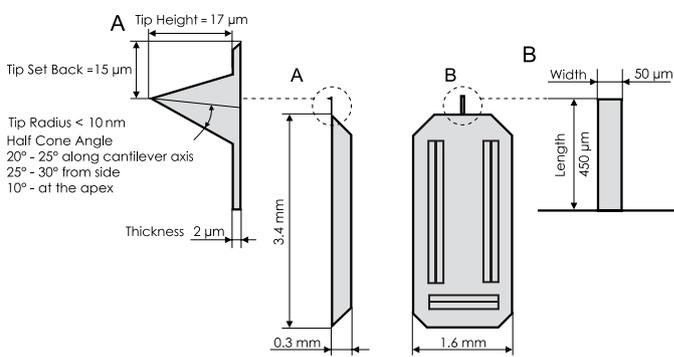
Budget *Sensors*



AFM probe Model: **Contact-G**



- Contact Mode
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



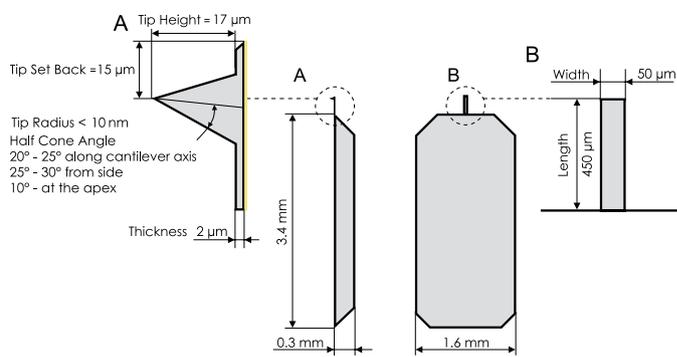
	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 µm	+/- 10 µm
Mean Width	50 µm	+/- 5 µm
Thickness	2 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	none	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Contact-G-10	10 pieces	none	
Contact-G-50	50 pieces	none	
Contact-G-W	380 pieces	none	

AFM probe Model: ContAI



- Contact Mode
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 µm	+/- 10 µm
Mean Width	50 µm	+/- 5 µm
Thickness	2 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	30 nm thick Aluminium coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
ContAI-10	10 pieces	Aluminium Reflex	
ContAI-50	50 pieces	Aluminium Reflex	
ContAI-W	380 pieces	Aluminium Reflex	

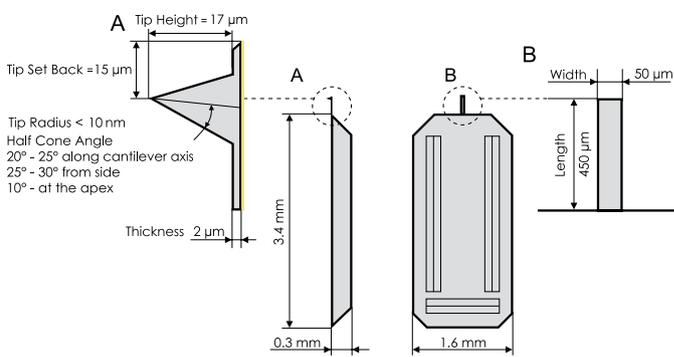


AFM probe Model: ContAI-G



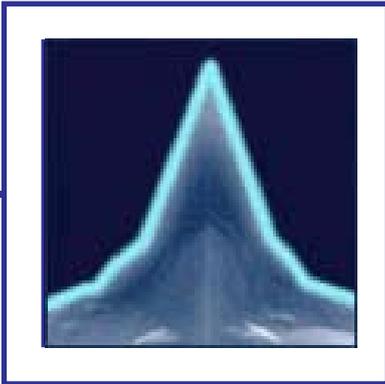
This probe has alignment grooves on the backside of the holder chip.

- Contact Mode
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Aluminium reflex coating, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 µm	+/- 10 µm
Mean Width	50 µm	+/- 5 µm
Thickness	2 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 10 nm	
Coating	30 nm thick Aluminium coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
ContAI-G-10	10 pieces	Aluminium Reflex	
ContAI-G-50	50 pieces	Aluminium Reflex	

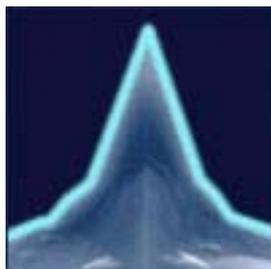


DLC Probes

Budget *Sensors*

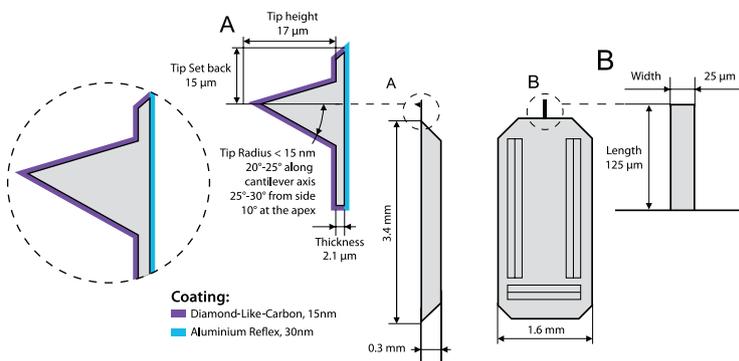


AFM probe Model: Tap150DLC



This probe has alignment grooves on the backside of the holder chip.

- Soft Tapping Mode, Intermittent Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Diamond-Like-Carbon coating on tip side of the cantilever, 15nm thick; Aluminium Reflex coating on detector side of the cantilever, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

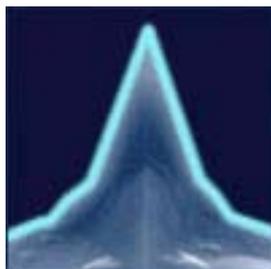


	Typical Values	Range
Resonant Frequency	150 kHz	+/- 75 kHz
Force Constant	5 N/m	1.5 - 15 N/m
Cantilever Length	125 µm	+/- 10 µm
Mean Width	25 µm	+/- 5 µm
Thickness	2.1 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 15 nm	
Coating	Diamond-Like-Carbon coating on the tip side of the cantilever, 15nm thick Aluminium Reflex coating on detector side of the cantilever, 30 nm thick	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap150DLC-10	10 pieces	DLC and Al Reflex	
Tap150DLC-50	50 pieces	DLC and Al Reflex	

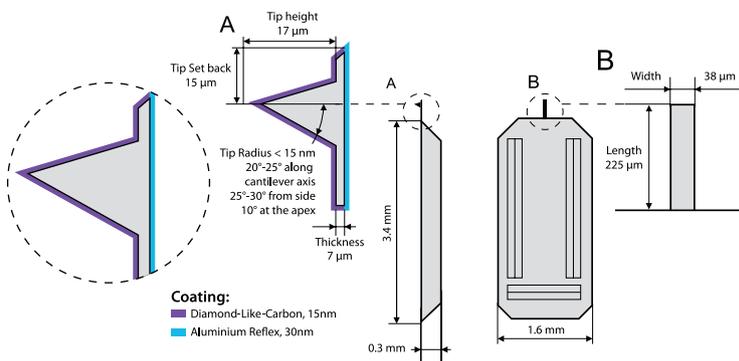


AFM probe Model: Tap190DLC



This probe has alignment grooves on the backside of the holder chip.

- Tapping Mode, Intermittent Contact Mode, Long Cantilever
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Diamond-Like-Carbon coating on tip side of the cantilever, 15nm thick; Aluminium Reflex coating on detector side of the cantilever, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

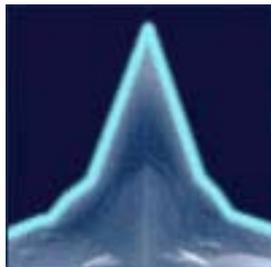


	Typical Values	Range
Resonant Frequency	190 kHz	+/- 60 kHz
Force Constant	48 N/m	20 - 100 N/m
Cantilever Length	225 µm	+/- 12 µm
Mean Width	38 µm	+/- 9 µm
Thickness	7 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 15 nm	
Coating	Diamond-Like-Carbon coating on the tip side of the cantilever, 15nm thick Aluminium Reflex coating on detector side of the cantilever, 30 nm thick	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap190DLC-10	10 pieces	DLC and Al Reflex	
Tap190DLC-50	50 pieces	DLC and Al Reflex	

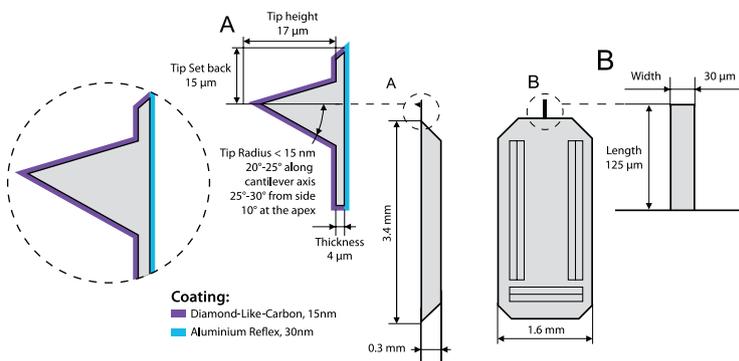


AFM probe Model: Tap300DLC



This probe has alignment grooves on the backside of the holder chip.

- Tapping, Intermittent Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Diamond-Like-Carbon coating on tip side of the cantilever, 15nm thick; Aluminium Reflex coating on detector side of the cantilever, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

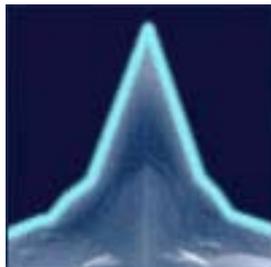


	Typical Values	Range
Resonant Frequency	300 kHz	+/- 100 kHz
Force Constant	40 N/m	20 - 75 N/m
Cantilever Length	125 µm	+/- 10 µm
Mean Width	30 µm	+/- 5 µm
Thickness	4 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 15 nm	
Coating	Diamond-Like-Carbon coating on the tip side of the cantilever, 15nm thick Aluminium Reflex coating on detector side of the cantilever, 30 nm thick	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Tap300DLC-10	10 pieces	DLC and Al Reflex	
Tap300DLC-50	50 pieces	DLC and Al Reflex	

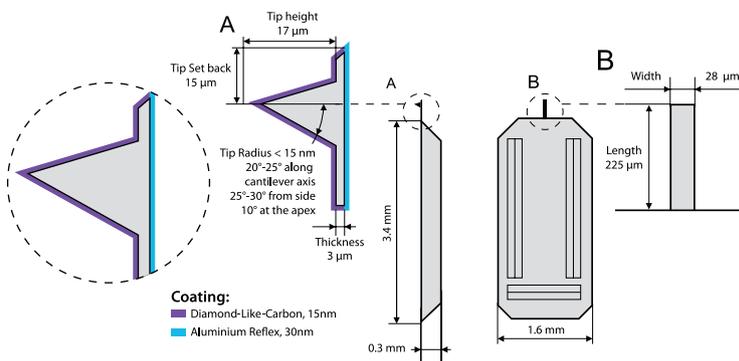


AFM probe Model: Multi75DLC



This probe has alignment grooves on the backside of the holder chip.

- Force Modulation, Pulsed Force Mode (PFM)
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Diamond-Like-Carbon coating on tip side of the cantilever, 15nm thick; Aluminium Reflex coating on detector side of the cantilever, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

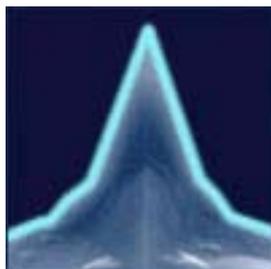


	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 μm	+/- 10 μm
Mean Width	28 μm	+/- 5 μm
Thickness	3 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 15 nm	
Coating	Diamond-Like-Carbon coating on the tip side of the cantilever, 15nm thick Aluminium Reflex coating on detector side of the cantilever, 30 nm thick	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Multi75DLC-10	10 pieces	DLC and Al Reflex	
Multi75DLC-50	50 pieces	DLC and Al Reflex	

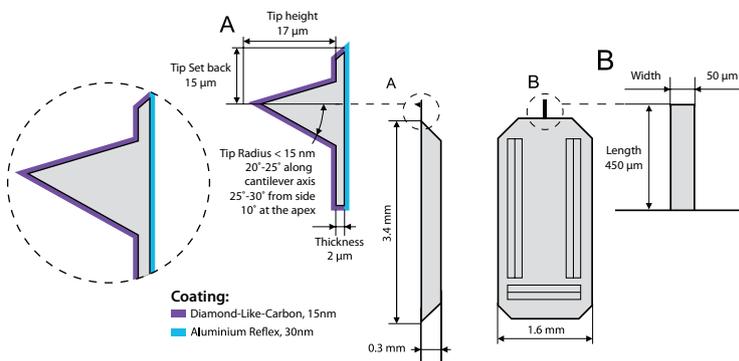


AFM probe Model: ContDLC



This probe has alignment grooves on the backside of the holder chip.

- Contact Mode
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Diamond-Like-Carbon coating on tip side of the cantilever, 15nm thick; Aluminium Reflex coating on detector side of the cantilever, 30 nm thick
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 µm	+/- 10 µm
Mean Width	50 µm	+/- 5 µm
Thickness	2 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 15 nm	
Coating	Diamond-Like-Carbon coating on the tip side of the cantilever, 15nm thick Aluminium Reflex coating on detector side of the cantilever, 30 nm thick	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
ContDLC-10	10 pieces	DLC and Al Reflex	
ContDLC-50	50 pieces	DLC and Al Reflex	



Conductive AFM Probes

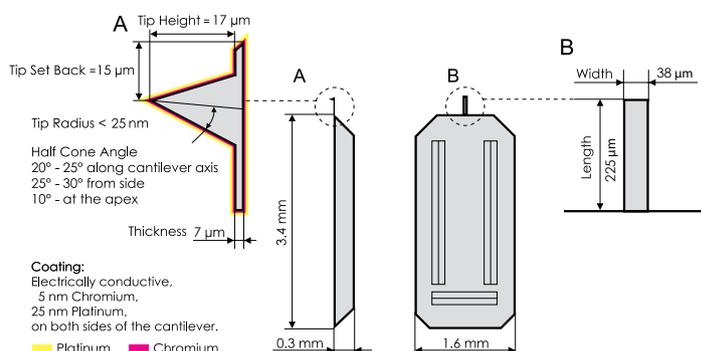
Budget *Sensors*

AFM probe Model: *ElectriTap190-G*



This probe has alignment grooves on the backside of the holder chip.

- Tapping, Intermittent Contact and Electric Modes like:
 - Scanning Capacitance Microscopy (SCM)
 - Electrostatic Force Microscopy (EFM)
 - Kelvin probe Force Microscopy (KFM)
 - Scanning probe lithography
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Long Cantilever
- Coating: Electrically conductive coating of 5 nm Chromium and 25 nm Platinum on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	190 kHz	+/- 60 kHz
Force Constant	48 N/m	20 - 100 N/m
Cantilever Length	225 µm	+/- 12 µm
Mean Width	38 µm	+/- 9 µm
Thickness	7 µm	+/- 1 µm
Tip Height	17 µm	+/- 2 µm
Tip Set Back	15 µm	+/- 5 µm
Tip Radius	< 25 nm	
Coating	Cr/Pt on both sides	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	
Contact Resistance	300 Ohms on platinum thin film surface	

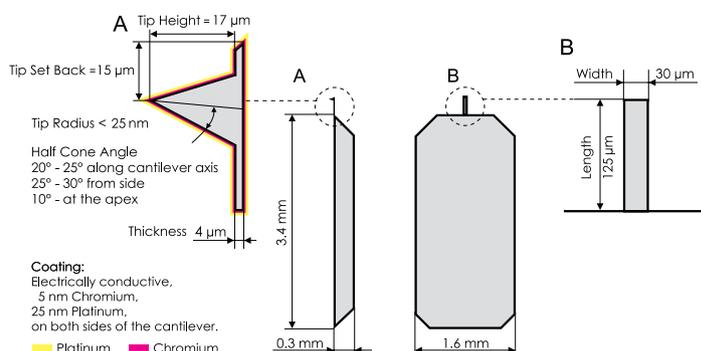
Order Code	Units in Package	Coating	
Tap190E-G-10	10 pieces	Chrome / Platinum	
Tap190E-G-50	50 pieces	Chrome / Platinum	



AFM probe Model: **ElectriTap300!** ;



- Tapping, Intermittent Contact and Electric Modes like:
 - Scanning Capacitance Microscopy (SCM)
 - Electrostatic Force Microscopy (EFM)
 - Kelvin probe Force Microscopy (KFM)
 - Scanning probe lithography
- Rotated Monolithic Silicon Probe Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Electrically conductive coating of 5 nm Chromium and 25 nm Platinum on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	300 kHz	+/- 100 kHz
Force Constant	40 N/m	20 - 75 N/m
Cantilever Length	125 μm	+/- 10 μm
Mean Width	30 μm	+/- 5 μm
Thickness	4 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Cr/Pt on both sides	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	
Contact Resistance	300 Ohms on platinum thin film surface	

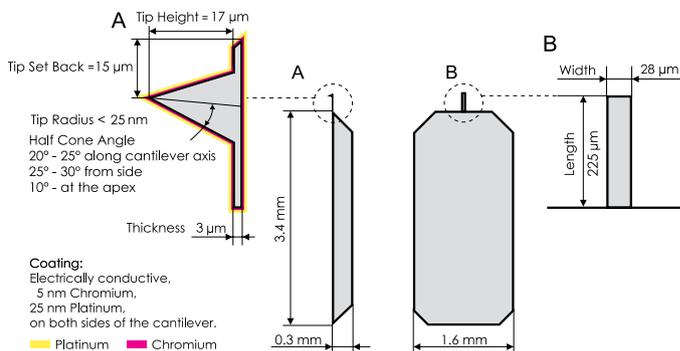
Order Code	Units in Package	Coating	
Tap300E-G-10	10 pieces	Chrome / Platinum	
Tap300E-G-50	50 pieces	Chrome / Platinum	



AFM probe Model: **ElectriMulti75**



- Force Modulation, Light Tapping, Pulsed Force Mode (PFM) and Electric Modes like:
 - Scanning Capacitance Microscopy (SCM)
 - Electrostatic Force Microscopy (EFM)
 - Kelvin probe Force Microscopy (KFM)
 - Scanning probe lithography
- Rotated Monolithic Silicon Probe Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Electrically conductive coating of 5 nm Chromium and 25 nm Platinum on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 μm	+/- 10 μm
Mean Width	28 μm	+/- 5 μm
Thickness	3 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Cr/Pt on both sides	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	
Contact Resistance	300 Ohms on platinum thin film surface	

Order Code	Units in Package	Coating	
Multi75E-10	10 pieces	Chrome / Platinum	
Multi75E-50	50 pieces	Chrome / Platinum	

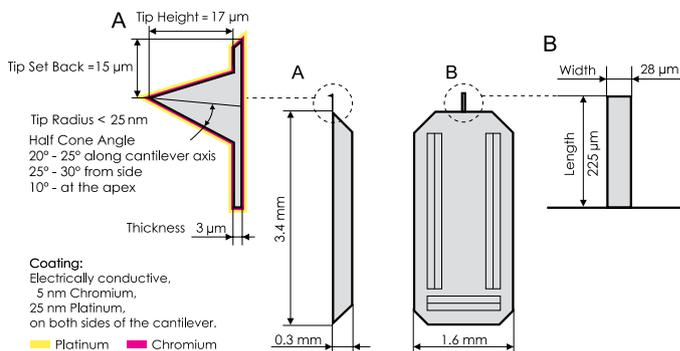


AFM probe Model: *ElectriMulti75-G*



This probe has alignment grooves on the backside of the holder chip.

- Force Modulation, Pulsed Force Mode (PFM) and Electric Modes like:
 - Scanning Capacitance Microscopy (SCM)
 - Electrostatic Force Microscopy (EFM)
 - Kelvin probe Force Microscopy (KFM)
 - Scanning probe lithography
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Electrically conductive coating of 5 nm Chromium and 25 nm Platinum on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 μm	+/- 10 μm
Mean Width	28 μm	+/- 5 μm
Thickness	3 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Cr/Pt on both sides	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	
Contact Resistance	300 Ohms on platinum thin film surface	

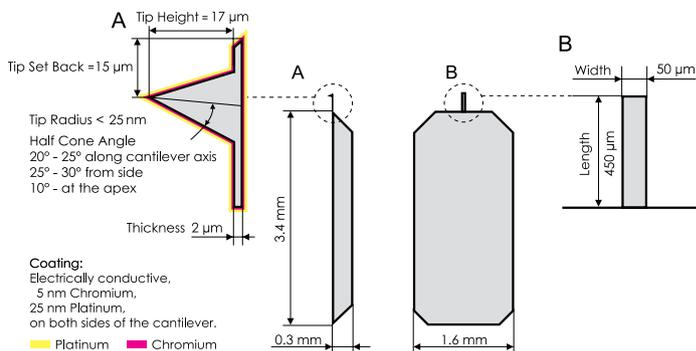
Order Code	Units in Package	Coating	
Multi75E-G-10	10 pieces	Chrome / Platinum	
Multi75E-G-50	50 pieces	Chrome / Platinum	



AFM probe Model: **ElectriCont-G**



- Contact Mode and Electric Modes like:
 - Scanning Capacitance Microscopy (SCM)
 - Electrostatic Force Microscopy (EFM)
 - Kelvin probe Force Microscopy (KFM)
 - Scanning probe lithography
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Electrically conductive coating of 5 nm Chromium and 25 nm Platinum on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 μm	+/- 10 μm
Mean Width	50 μm	+/- 5 μm
Thickness	2 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Cr/Pt on both sides	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	
Contact Resistance	300 Ohms on platinum thin film surface	

Order Code	Units in Package	Coating	
ContE-G-10	10 pieces	Cr/Pt	
ContE-G-50	50 pieces	Cr/Pt	



Magnetic AFM Probes

Budget *Sensors*

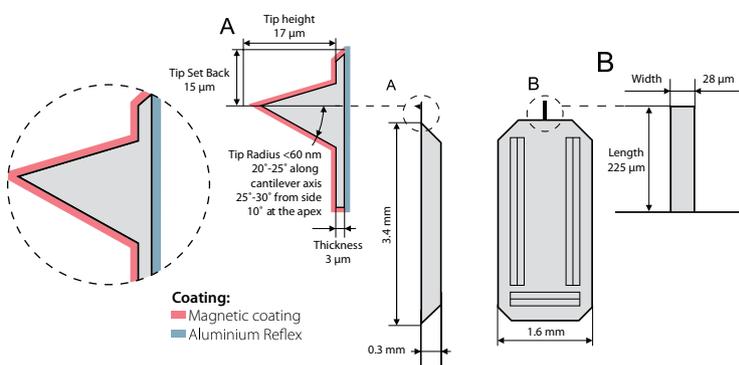


AFM probe Model: *MagneticMulti75-G*



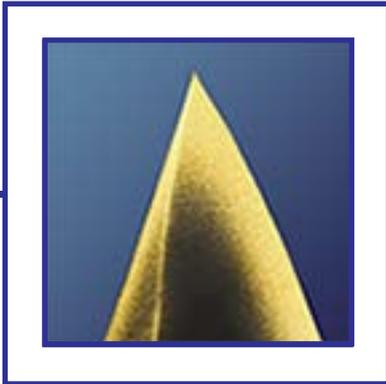
This probe has alignment grooves on the backside of the holder chip.

- Magnetic Force Microscopy (MFM)
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Tip side - Magnetic, Detector side - Aluminium reflex
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 μm	+/- 10 μm
Mean Width	28 μm	+/- 5 μm
Thickness	3 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 60 nm	
Coating	Tip side - Magnetic; Detector side - Aluminium	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Multi75M-G-10	10 pieces	Magnetic/Aluminium	
Multi75M-G-50	50 pieces	Magnetic/Aluminium	

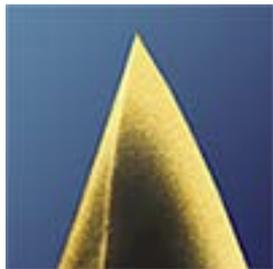


Gold Coated AFM Probes

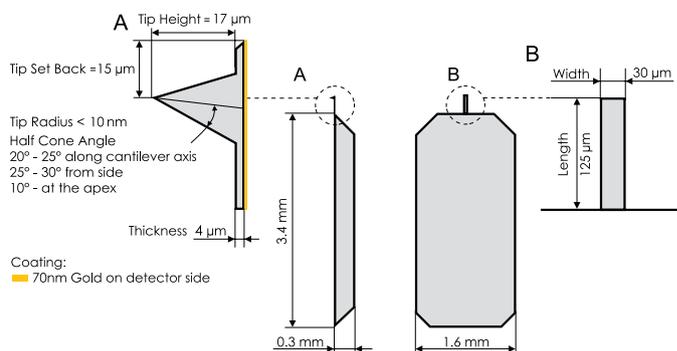
Budget *Sensors*



AFM probe Model: Tap300GD



- Non-Contact , Tapping
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Gold coating of 70nm on the back side of the cantilever. This coating enhances the laser reflectivity of the cantilever.
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.

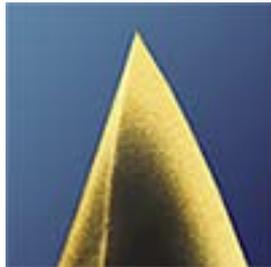


	Typical Values	Range
Resonant Frequency	300 kHz	+/- 100 kHz
Force Constant	40 N/m	20 - 75 N/m
Cantilever Length	125 μm	+/- 10 μm
Mean Width	30 μm	+/- 5 μm
Thickness	4 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 10 nm	
Coating	Gold coating on detector side of the cantilever	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

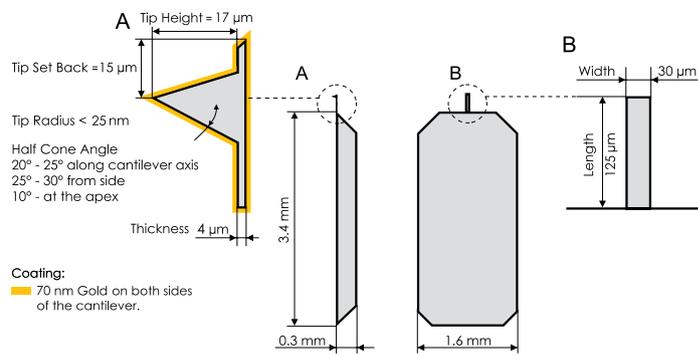
Order Code	Units in Package	Coating	
Tap300GD-10	10 pieces	Gold - detector side	
Tap300GD-50	50 pieces	Gold - detector side	



AFM probe Model: Tap300GB



- Non-Contact , Tapping and Special Applications
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Overall gold coating with a nominal thickness of 70nm on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever.
- This probe uses an “on scan angle” symmetric tip to provide a more ymmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	300 kHz	+/- 100 kHz
Force Constant	40 N/m	20 - 75 N/m
Cantilever Length	125 μm	+/- 10 μm
Mean Width	30 μm	+/- 5 μm
Thickness	4 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Overall Gold Coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

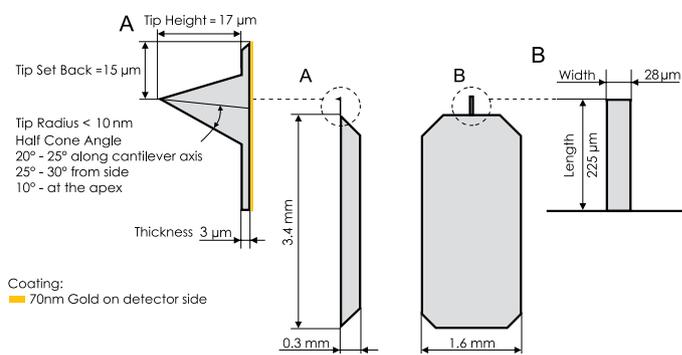
Order Code	Units in Package	Coating	
Tap300GB-10	10 pieces	overall Gold coating	
Tap300GB-50	50 pieces	overall Gold coating	



AFM probe Model: Multi75GD



- Force Modulation, Light Tapping, Pulsed Force Mode (PFM)
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Gold coating of 70nm on the back side of the cantilever.
This coating enhances the laser reflectivity of the cantilever.
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 μm	+/- 10 μm
Mean Width	28 μm	+/- 5 μm
Thickness	3 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 10 nm	
Coating	Gold coating on detector side of the cantilever	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
Multi75GD-10	10 pieces	Gold - detector side	
Multi75GD-50	50 pieces	Gold - detector side	

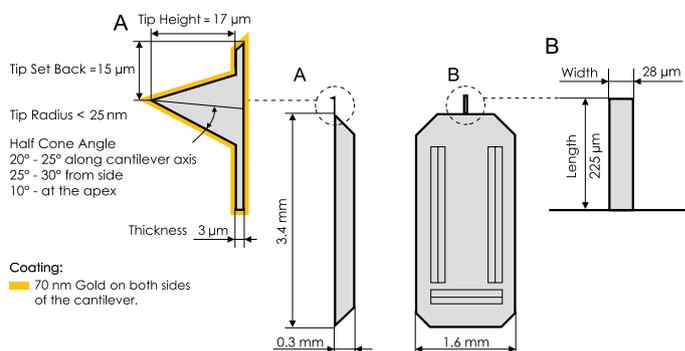


AFM probe Model: Multi75GB-G



This probe has alignment grooves on the backside of the holder chip.

- Force Modulation, Light Tapping, Pulsed Force Mode (PFM) and Special Applications
- Rotated Monolithic Silicon Probe Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Overall gold coating with a nominal thickness of 70nm on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever.
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	75 kHz	+/- 15 kHz
Force Constant	3 N/m	1 - 7 N/m
Cantilever Length	225 μm	+/- 10 μm
Mean Width	28 μm	+/- 5 μm
Thickness	3 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Overall Gold Coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

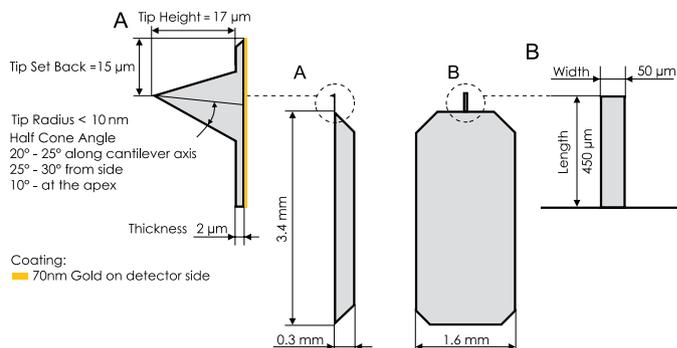
Order Code	Units in Package	Coating	
Multi75GB-G-10	10 pieces	overall Gold coating	
Multi75GB-G-50	50 pieces	overall Gold coating	



AFM probe Model: ContGD



- Contact Mode
- Rotated Monolithic Silicon Probe
Symmetric Tip Shape
Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Gold coating of 70nm on the back side of the cantilever. This coating enhances the laser reflectivity of the cantilever.
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 μm	+/- 10 μm
Mean Width	50 μm	+/- 5 μm
Thickness	2 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 10 nm	
Coating	Gold coating on detector side of the cantilever	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
ContGD-10	10 pieces	Gold - detector side	
ContGD-50	50 pieces	Gold - detector side	

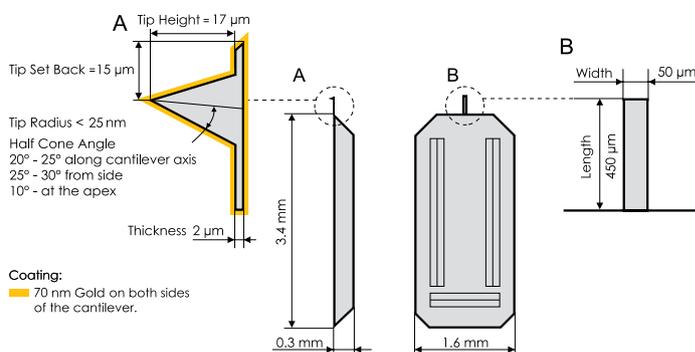


AFM probe Model: ContGB-G



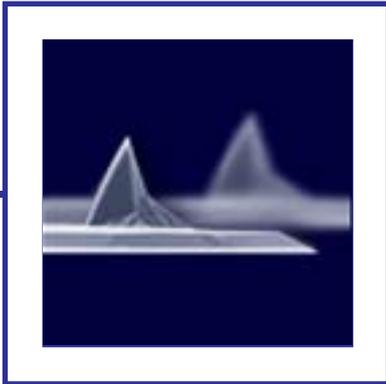
This probe has alignment grooves on the backside of the holder chip.

- Contact Mode and Special Applications
- Rotated Monolithic Silicon Probe
- Symmetric Tip Shape
- Tipsize: 3.4 x 1.6 x 0.3 mm
- Coating: Overall gold coating with a nominal thickness of 70nm on both sides of the cantilever. This coating also enhances the laser reflectivity of the cantilever.
- This probe uses an “on scan angle” symmetric tip to provide a more symmetric representation of features over 200 nm.



	Typical Values	Range
Resonant Frequency	13 kHz	+/- 4 kHz
Force Constant	0.2 N/m	0.07 - 0.4 N/m
Cantilever Length	450 μm	+/- 10 μm
Mean Width	50 μm	+/- 5 μm
Thickness	2 μm	+/- 1 μm
Tip Height	17 μm	+/- 2 μm
Tip Set Back	15 μm	+/- 5 μm
Tip Radius	< 25 nm	
Coating	Overall Gold Coating	
Half Cone Angle	20° - 25° along cantilever axis 25° - 30° from side 10° at the apex	

Order Code	Units in Package	Coating	
ContGB-G-10	10 pieces	overall Gold coating	
ContGB-G-50	50 pieces	overall Gold coating	

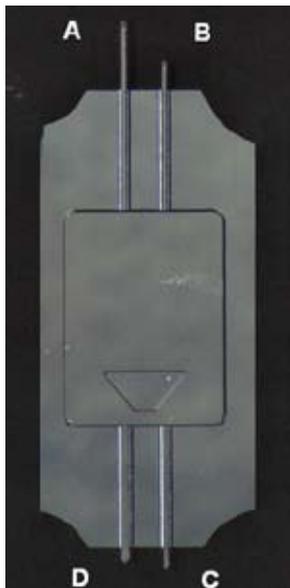


All-In-One AFM Probes

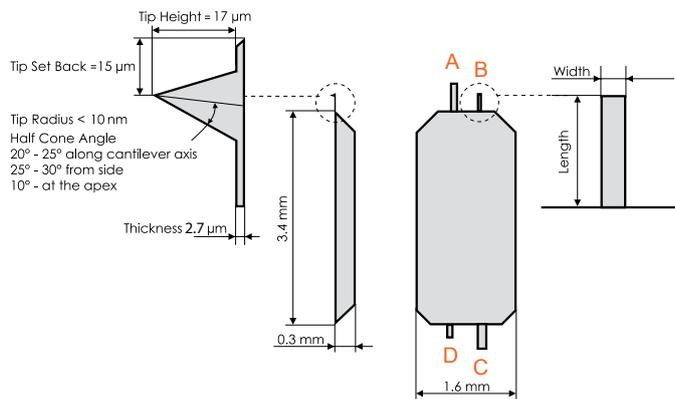
Budget *Sensors*



AFM probe Model: All-In-One



- Several Measurement Modes
- Rotated Monolithic Silicon Probe
 - Symmetric Tip Shape
 - Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none
- This probe uses “on scan angle” symmetric tips to provide a more symmetric representation of features over 200 nm.



The All-in-One probes offer four cantilevers with different geometry for all topography measurement modes: contact mode, force modulation, soft tapping and tapping mode. The resonance frequencies and force constants are similar to the ones of the well-established models Contact, Multi75, Tap150 and Tap300.

The long cantilevers A for contact mode and B for force modulation are located at one end of the chip while the short cantilevers C for soft tapping and D for tapping mode are located at the opposite end. The short cantilever end is marked by a trapezoidal pattern visible with bare eyes.

	Cantilever A		Cantilever B		Cantilever C		Cantilever D	
Application	Contact Mode		Force modulation, Pulsed Force Mode		Soft Tapping Mode, Intermittent Contact-Mode		Tapping Mode, Intermittent Contact-Mode	
	Typical Values	Range	Typical Values	Range	Typical Values	Range	Typical Values	Range
Resonant Frequency	15 kHz	+/-5 kHz	80 kHz	+/-30 kHz	150 kHz	+/-80 kHz	350 kHz	+/-150 kHz
Force Constant	0.2 N/m	0.04 - 0.7 N/m	2.7 N/m	0.4 - 10 N/m	7.4 N/m	1 - 29 N/m	40 N/m	7 - 160 N/m
Resonant Frequency and Force Constant Similar to	<u>Contact</u>		<u>Multi75</u>		<u>Tap150-G</u>		<u>Tap300</u>	
Cantilever Length	500 μm	+/-10 μm	210 μm	+/-10 μm	150 μm	+/-10 μm	100 μm	+/-10 μm
Mean Width	30 μm	+/-5 μm	30 μm	+/-5 μm	30 μm	+/-5 μm	50 μm	+/-5 μm
Thickness	2.7 μm	+/-1 μm	2.7 μm	+/-1 μm	2.7 μm	+/-1 μm	2.7 μm	+/-1 μm
Tip Height	17 μm	+/-2 μm	17 μm	+/-2 μm	17 μm	+/-2 μm	17 μm	+/-2 μm
Tip Set Back	15 μm	+/-5 μm	15 μm	+/-5 μm	15 μm	+/-5 μm	15 μm	+/-5 μm
Tip Radius	< 10 } {							
Coating	none							
Half Cone Angle	20° - 25° along cantilever axis, 25° - 30° from side, 10° at the apex							

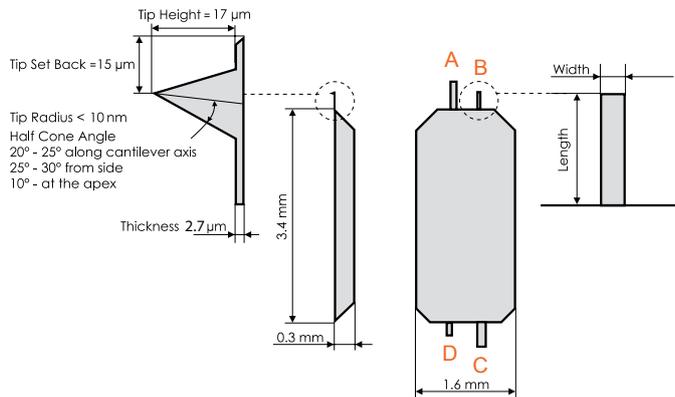
Order Code	Units in Package	Coating	
AIO-10	10 pieces	none	
AIO-50	50 pieces	none	



AFM probe Model: All-In-One-AI



- Several Measurement Modes
- Rotated Monolithic Silicon Probe
 - Symmetric Tip Shape
 - Chipsize: 3.4 x 1.6 x 0.3 mm
- Aluminium reflex coating, 30 nm thick
- This probe uses “on scan angle” symmetric tips to provide a more symmetric representation of features over 200 nm.



The All-in-One probes offer four cantilevers with different geometry for all topography measurement modes: contact mode, force modulation, soft tapping and tapping mode. The resonance frequencies and force constants are similar to the ones of the well-established models ContAI, Multi75-AI, Tap150AI and Tap300AI.

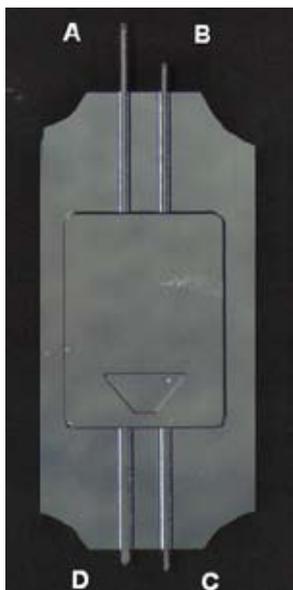
The long cantilevers A for contact mode and B for force modulation are located at one end of the chip while the short cantilevers C for soft tapping and D for tapping mode are located at the opposite end. The short cantilever end is marked by a trapezoidal pattern visible with bare eyes.

	Cantilever A		Cantilever B		Cantilever C		Cantilever D	
Application	Contact Mode		Force modulation, Pulsed Force Mode		Soft Tapping Mode, Intermittent Contact-Mode		Tapping Mode, Intermittent Contact-Mode	
	Typical Values	Range	Typical Values	Range	Typical Values	Range	Typical Values	Range
Resonant Frequency	15 kHz	+/-5 kHz	80 kHz	+/-30 kHz	150 kHz	+/-80 kHz	350 kHz	+/-150 kHz
Force Constant	0.2 N/m	0.04 - 0.7 N/m	2.7 N/m	0.4 - 10 N/m	7.4 N/m	1 - 29 N/m	40 N/m	7 - 160 N/m
Resonant Frequency and Force Constant Similar to	ContAI		Multi75AI		Tap150AI-G		Tap300AI	
Cantilever Length	500 µm	+/-10 µm	210 µm	+/-10 µm	150 µm	+/-10 µm	100 µm	+/-10 µm
Mean Width	30 µm	+/-5 µm	30 µm	+/-5 µm	30 µm	+/-5 µm	50 µm	+/-5 µm
Thickness	2.7 µm	+/-1 µm	2.7 µm	+/-1 µm	2.7 µm	+/-1 µm	2.7 µm	+/-1 µm
Tip Height	17 µm	+/-2 µm	17 µm	+/-2 µm	17 µm	+/-2 µm	17 µm	+/-2 µm
Tip Set Back	15 µm	+/-5 µm	15 µm	+/-5 µm	15 µm	+/-5 µm	15 µm	+/-5 µm
Tip Radius	< 10 nm							
Coating	none							
Half Cone Angle	20° - 25° along cantilever axis, 25° - 30° from side, 10° at the apex							

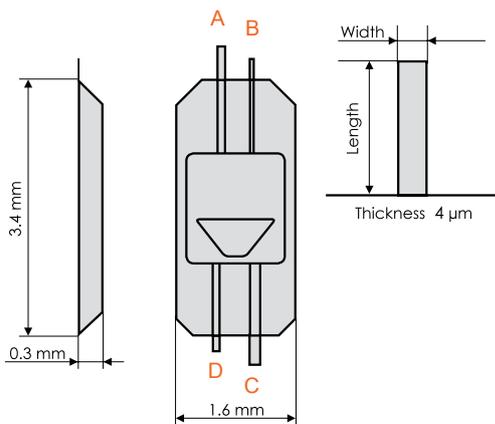
Order Code	Units in Package	Coating	
AIOAI-10	10 pieces	Aluminium Reflex	
AIOAI-50	50 pieces	Aluminium Reflex	



AFM probe Model: All-In-One-TL



- Several Measurement Modes
- Tipless Monolithic Silicon Probe
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Coating: none



The Tipless All-in-One probes offer four cantilevers with different geometry for several measurement modes: Contact Mode, Force Modulation, Soft Tapping and Tapping Mode.

The resonance frequencies and force constants of the 4 cantilevers are similar to the ones of the well-established models Contact, Multi75, Tap150 and Tap300. However, other than the Contact, Multi75, Tap150 and Tap300 the Tipless All-in-One cantilevers do not feature a tip.

The long cantilevers A for contact mode and B for force modulation are located at one end of the chip while the short cantilevers C for soft tapping and D for tapping mode are located at the opposite end. The short cantilever end is marked by a trapezoidal pattern visible with bare eyes.

	Cantilever A		Cantilever B		Cantilever C		Cantilever D	
Application	Contact Mode		Force modulation, Pulsed Force Mode		Soft Tapping Mode, Intermittent Contact-Mode		Tapping Mode, Intermittent Contact-Mode	
	Typical Values	Range	Typical Values	Range	Typical Values	Range	Typical Values	Range
Resonant Frequency	15 kHz	+/-5 kHz	80 kHz	+/-30 kHz	150 kHz	+/-80 kHz	350 kHz	+/-150 kHz
Force Constant	0.2 N/m	0.04 - 0.7 N/m	2.7 N/m	0.4 - 10 N/m	7.4 N/m	1 - 29 N/m	40 N/m	7 - 160 N/m
Resonant Frequency and Force Constant Similar to	Contact		Multi75		Tap150-G		Tap300	
Cantilever Length	500 μm	+/-10 μm	210 μm	+/-10 μm	150 μm	+/-10 μm	100 μm	+/-10 μm
Mean Width	30 μm	+/-5 μm	30 μm	+/-5 μm	30 μm	+/-5 μm	50 μm	+/-5 μm
Thickness	2.7 μm	+/-1 μm	2.7 μm	+/-1 μm	2.7 μm	+/-1 μm	2.7 μm	+/-1 μm
Coating	none							

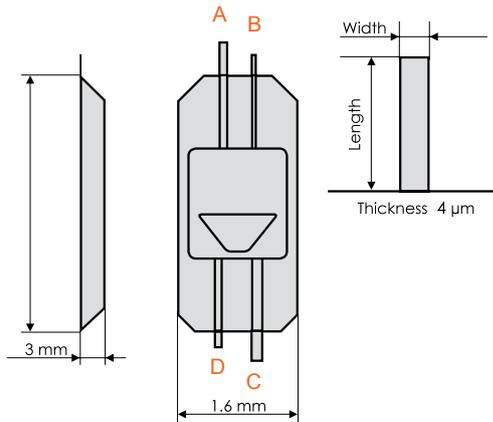
Order Code	Units in Package	Coating	
AIO-TL-10	10 pieces	none	
AIO-TL-50	50 pieces	none	



AFM probe Model: All-In-One-AI-TL



- Several Measurement Modes
- Tipless Monolithic Silicon Probe
- Chipsize: 3.4 x 1.6 x 0.3 mm
- Aluminium reflex coating, 30 nm thick



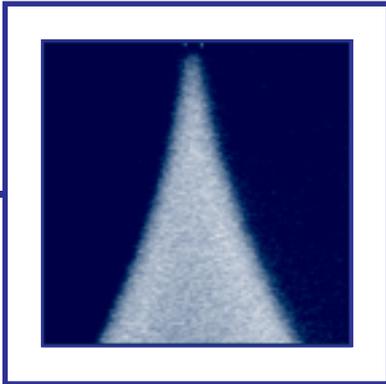
The Tipless All-in-One probes offer four cantilevers with different geometry for several measurement modes: Contact Mode, Force Modulation, Soft Tapping and Tapping Mode.

The resonance frequencies and force constants of the 4 cantilevers are similar to the ones of the well-established models Contact, Multi75, Tap150 and Tap300. However, other than the Contact, Multi75, Tap150 and Tap300 the Tipless All-in-One cantilevers do not feature a tip.

The long cantilevers A for contact mode and B for force modulation are located at one end of the chip while the short cantilevers C for soft tapping and D for tapping mode are located at the opposite end. The short cantilever end is marked by a trapezoidal pattern visible with bare eyes.

	Cantilever A		Cantilever B		Cantilever C		Cantilever D	
Application	Contact Mode		Force modulation, Pulsed Force Mode		Soft Tapping Mode, Intermittent Contact-Mode		Tapping Mode, Intermittent Contact-Mode	
	Typical Values	Range	Typical Values	Range	Typical Values	Range	Typical Values	Range
Resonant Frequency	15 kHz	+/-5 kHz	80 kHz	+/-30 kHz	150 kHz	+/-80 kHz	350 kHz	+/-150 kHz
Force Constant	0.2 N/m	0.04 - 0.7 N/m	2.7 N/m	0.4 - 10 N/m	7.4 N/m	1 - 29 N/m	40 N/m	7 - 160 N/m
Resonant Frequency and Force Constant Similar to	ContAI		Multi75AI		Tap150AI-G		Tap300AI	
Cantilever Length	500 µm	+/-10 µm	210 µm	+/-10 µm	150 µm	+/-10 µm	100 µm	+/-10 µm
Mean Width	30 µm	+/-5 µm	30 µm	+/-5 µm	30 µm	+/-5 µm	50 µm	+/-5 µm
Thickness	2.7 µm	+/-1 µm	2.7 µm	+/-1 µm	2.7 µm	+/-1 µm	2.7 µm	+/-1 µm
Coating	none							

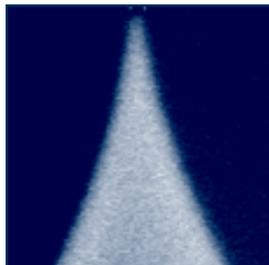
Order Code	Units in Package	Coating	
AIOAI-TL-10	10 pieces	Aluminium Reflex	
AIOAI-TL-50	50 pieces	Aluminium Reflex	



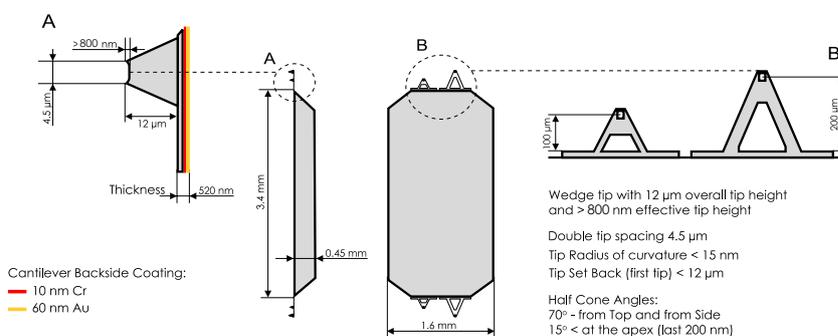
Silicon Nitride AFM Probes

Budget *Sensors*

AFM probe Model: SiNi



- Soft Contact Mode
- 4 Silicon Nitride Cantilevers (triangular, 2 different lengths)
Silicon Nitride Wedge Tip
Silicon Support Chip
Chipsize: 3.4 x 1.6 x 0.45 mm
- Coating: 70 nm thick Gold/Chromium
- Cantilever lengths: 100 μm and 200 μm

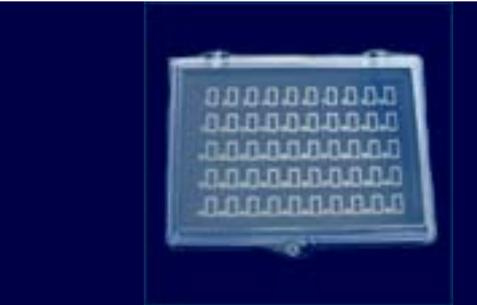


Values:	Short cantilever	Long cantilever	Range
Resonant Frequency	30 kHz	10 kHz	—
Force Constant	0.27 N/m	0.06 N/m	—
Lengths	100 μm	200 μm	+/- 10 μm
Widths	16 μm	30 μm	+/- 5 μm
Thickness	520 nm (450 nm SiNi + 70 nm coating)		+/- 50 μm
Tip Height (Wedge Tip)	12 μm (overall) > 800 nm (effective)		+/- 2 μm -
Double Tip Spacing	4.5 μm		+/- 0.5 μm
Tip Radius	< 15 nm		
Reflex Coating	70 nm thick Gold / Chromium		
Half Cone Angles	35° (macroscopic)		
Cantilever Bending	< 3°		

Order Code	Units in Package	Coating	
SiNi-30	30 pieces	Gold/Chromium	
SiNi-100	100 pieces	Gold/Chromium	
SiNi-300	300 pieces	Gold/Chromium	



AFM probe Model:



BudgetComboBox

WHATEVER YOU WANT!

Ordering:

BudgetComboBoxes are only available through our online order procedure.

Packaging size / Quantity

BudgetComboBoxes can only be ordered in quantities of 50 AFM probes.

Each BudgetComboBox has a numbered AFM probes grid where each AFM probe is identified by a number from 1 to 50. A datasheet describing precisely the content of each BudgetComboBox is provided by us along with each BudgetComboBox.

Of course you can order more than one BudgetComboBox with the content you have specified or you can order several BudgetComboBoxes of 50 AFM probes with different contents.

Our convenient and easy to use online order procedure gives you full freedom in this regard.

Prices:

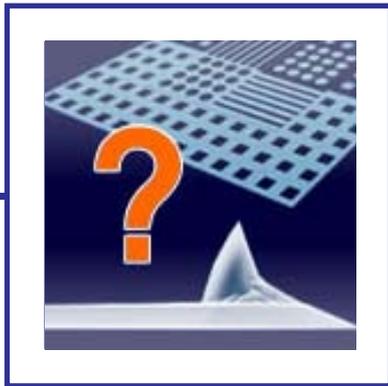
Following our motto “Quality meets Price”, we are offering you a very transparent and fair price structure of your personalized BudgetComboBox:

The price of each BudgetComboBox is calculated as the value of all AFM probes in the relevant box, where the price of a single AFM probe is the price of the same AFM probe if you ordered it in a regular pack of 50 pieces.

The price of your personalized BudgetComboBox is being calculated for you automatically by our online order procedure. You just have to choose the AFM probe types you'd like to order and we'll take care about the rest.

Shipment conditions:

BudgetComboBoxes are shipped within 10 days after the confirmation of the Purchase Order.



Calibration Standards

Budget *Sensors*

Product Model: TipCheck

The Problem

When imaging a sample by AFM, it may be difficult to know whether the surface is mapped accurately or is affected by a blunt or broken tip. Blunt or broken tips will falsify measurement results like surface roughness or structures dimensions dramatically!

To be sure you're using a proper tip, used tips must be thrown away or checked by SEM regularly, both methods being extremely uneconomic or time consuming.

The Solution

BudgetSensors introduces the TipCheck - an SPM sample for fast and convenient determination of the AFM tip condition.

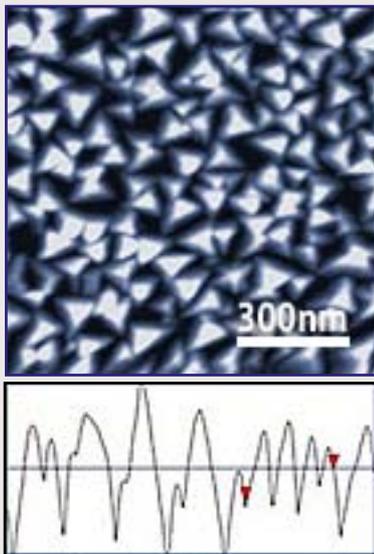
The clear differences between the tips become apparent even within a single scan line. Therefore the TipCheck offers a fast and easy way to compare and categorize different AFM probes with respect to tip apex, shape and sharpness.

You can easily check whether your tip is still good, starts showing wear or is already blunted or broken without the need of scanning an entire image or doing SEM inspection.

Additionally, this sample works perfectly with Auto Tip Qualification and Tip Characterization software that is available on the market.

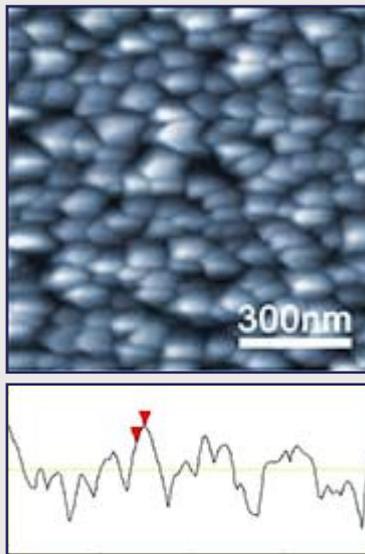
The following figures show a comparison between different probe tips used to image the TipCheck sample. The scan size is $1 \times 1 \mu\text{m}$ for all images. The height scale is 100nm. Below the topography images you can find a representative cross-section of the respective image.

a) good tip



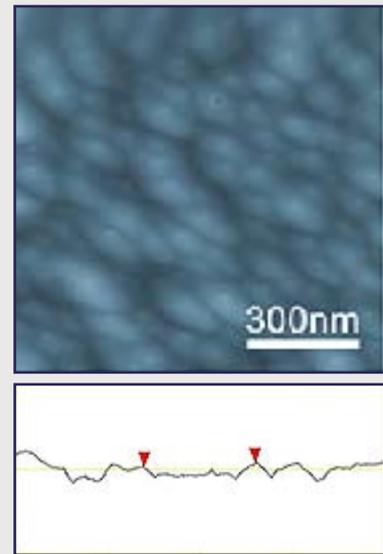
Ra=19.8nm

b) used tip



Ra=10.7nm

c) worn-out tip



Ra=3.5nm

The BudgetSensors TipCheck sample consists of an extremely wear-resistant thin film coating that is deposited on a silicon chip. This thin film coating shows a granular, sharply peaked nanostructure which makes it ideal for reversely imaging an AFM probe's tip apex. The die size of the TipCheck is 5x5 mm.

It comes glued onto a metal disc so that it is ready to be placed into your AFM set.

Order Code:

TipCheck

Product Model: HS-20MG

Why do you need the HS-20MG?

Atomic Force Microscopy has become a valuable tool not only for visualization but also for performing accurate measurements on the nanometer and micrometer scale.

In order to make the most of their measurement capabilities, AFM systems need to be properly calibrated.

Our Solution

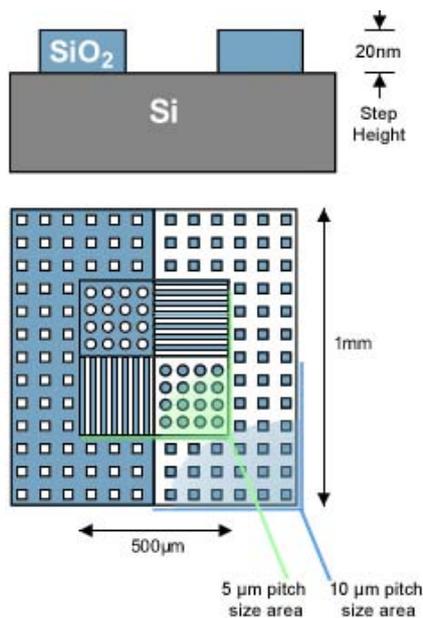
HS-20MG is one of the height standards introduced by BudgetSensors as a response to the increased demand for affordable high-quality AFM calibration standards.

The HS-20MG features Silicon Dioxide structure arrays on a 5x5mm Silicon chip. The fabrication process guarantees excellent uniformity of the structures across the chip. This in turn ensures easy and reliable Z-axis calibration of your AFM system.

The calibration area is situated in the center of the chip. It is easy to find with the AFM optical system. The structure step height is in the range of 20nm. The exact value for each chip is indicated on the box label. Arrays of structures with different shape and pitch are integrated on the chip. The larger square (1x1mm) contains square pillars and holes with a 10µm pitch. The smaller square (500x500µm) contains circular pillars and holes as well as lines in the X- and Y-direction with a 5µm pitch.

Aside from Z-axis calibration, this design also allows X- and Y-axis calibration for bigger scanners (40-100µm range). What is more, the structure symmetry makes it possible to calibrate your AFM system without the need to rotate and realign the sample in-between X- and Y-axis calibration.

The HS-20MG chip is glued onto a 12mm metal disc using a high-quality electrically-conductive epoxy resin and it is ready for use as shipped.



Technical data at a glance:

Die size:
5x5mm

Step height:
~20nm, the precise value is stated on the label of each box

Structure geometry:
- square holes and pillars with a 10µm pitch arranged in a 1x1mm square
- circular pillars and holes, and lines in the x- and y-direction with a 5µm pitch arranged in a 500x500µm square

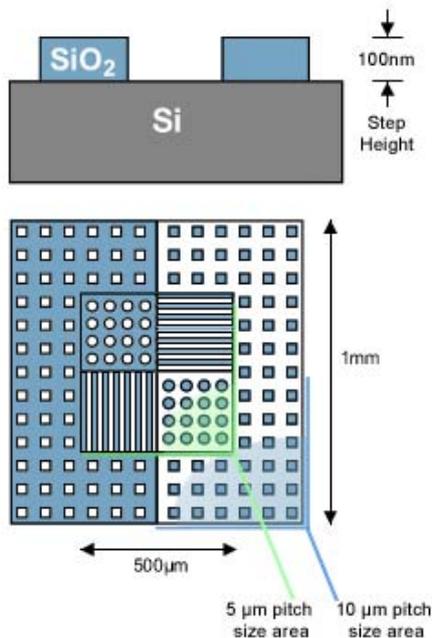
Order Code:

HS-20MG

Why do you need the HS-100MG?

Atomic Force Microscopy has become a valuable tool not only for visualization but also for performing accurate measurements on the nanometer and micrometer scale.

In order to make the most of their measurement capabilities, AFM systems need to be properly calibrated.



Our Solution

HS-100MG is one of the height standards introduced by **BudgetSensors** as a response to the increased demand for affordable high-quality AFM calibration standards.

The HS-100MG features Silicon Dioxide structure arrays on a 5x5mm Silicon chip. The fabrication process guarantees excellent uniformity of the structures across the chip. This in turn ensures easy and reliable Z-axis calibration of your AFM system.

The calibration area is situated in the center of the chip. It is easy to find with the AFM optical system. The structure step height is in the range of 100nm. The exact value for each chip is indicated on the box label. Arrays of structures with different shape and pitch are integrated on the chip. The larger square (1x1mm) contains square pillars and holes with a 10µm pitch. The smaller square (500x500µm) contains circular pillars and holes as well as lines in the X- and Y-direction with a 5µm pitch.

Aside from Z-axis calibration, this design also allows X- and Y-axis calibration for bigger scanners (40-100µm range). What is more, the structure symmetry makes it possible to calibrate your AFM system without the need to rotate and realign the sample in-between X- and Y-axis calibration.

The HS-100MG chip is glued onto a 12mm metal disc using a high-quality electrically-conductive epoxy resin and it is ready for use as shipped.

Technical data at a glance:

Die size:
5x5mm

Step height:
~100nm, the precise value is stated on the label of each box

Structure geometry:

- square holes and pillars with a 10µm pitch arranged in a 1x1mm square
- circular pillars and holes, and lines in the x- and y-direction with a 5µm pitch arranged in a 500x500µm square

Order Code:

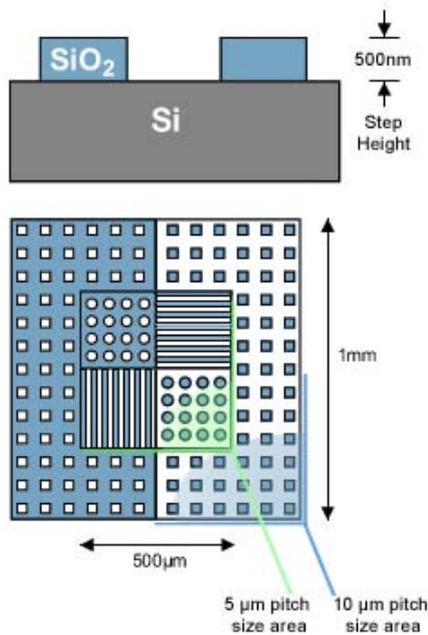
HS-100MG

Product Model: **HS-500MG**

Why do you need the HS-500MG?

Atomic Force Microscopy has become a valuable tool not only for visualization but also for performing accurate measurements on the nanometer and micrometer scale.

In order to make the most of their measurement capabilities, AFM systems need to be properly calibrated.



Our Solution

HS-500MG is one of the height standards introduced by BudgetSensors as a response to the increased demand for affordable high-quality AFM calibration standards.

The HS-500MG features Silicon Dioxide structure arrays on a 5x5mm Silicon chip. The fabrication process guarantees excellent uniformity of the structures across the chip. This in turn ensures easy and reliable Z-axis calibration of your AFM system.

The calibration area is situated in the center of the chip. It is easy to find with the AFM optical system. The structure step height is in the range of 500nm. The exact value for each chip is indicated on the box label. Arrays of structures with different shape and pitch are integrated on the chip. The larger square (1x1mm) contains square pillars and holes with a 10µm pitch. The smaller square (500x500µm) contains circular pillars and holes as well as lines in the X- and Y-direction with a 5µm pitch.

Aside from Z-axis calibration, this design also allows X- and Y-axis calibration for bigger scanners (40-100µm range). What is more, the structure symmetry makes it possible to calibrate your AFM system without the need to rotate and realign the sample in-between X- and Y-axis calibration.

The HS-500MG chip is glued onto a 12mm metal disc using a high-quality electrically-conductive epoxy resin and it is ready for use as shipped.

Technical data at a glance:

Die size:
5x5mm

Step height:
~500nm, the precise value is stated on the label of each box

Structure geometry:
- square holes and pillars with a 10µm pitch arranged in a 1x1mm square
- circular pillars and holes, and lines in the x- and y-direction with a 5µm pitch arranged in a 500x500µm square

Order Code:

HS-500MG

Why XYZ calibration nanogrid?

In order to make the most of their measurement capabilities, AFM systems need to be properly calibrated. Therefore, the more precise your calibration standard, the better AFM measurement results can be achieved. In this aspect, nanogrid calibration standards allow the most precise AFM system calibration.

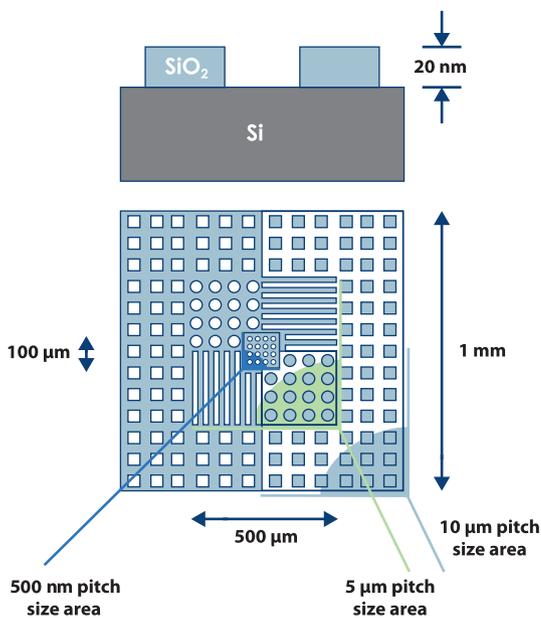
Our Solution

CS-20NG is an advanced XYZ calibration nanogrid that enables calibration up to the nanometer level. It features silicon dioxide structure arrays on a 5x5 mm silicon chip. The fabrication process guarantees excellent uniformity of the structures across the chip. This in turn ensures easy and reliable X, Y and Z axis calibration of your AFM system.

The calibration area is situated in the center of the chip. It is easy to find with the AFM optical system.

The structure step height is in the range of 20 nm. The exact value for each chip is indicated on the box label. Arrays of structures with different shape and pitch are integrated on the chip. The large square (1x1 mm) contains square pillars and holes with a 10 μm pitch. The middle square contains circular pillars and holes as well as lines in the X- and Y-direction with a 5 μm pitch. The small square contains circular holes with a 500 nm pitch.

The CS-20NG is suitable for both lateral and vertical AFM scanner calibration. The structure symmetry makes it possible to calibrate your AFM system in one step without rotating the sample in-between X- and Y-axis calibration. The CS-20NG chip is glued onto a 12 mm metal disc using a high-quality electrically conductive epoxy resin and it is ready for use as shipped.



Technical data at a glance:

Die size:
5x5mm

Step height:
~20nm, the precise value is stated on the label of each box

Structure geometry:

- Square holes and pillars with 10um pitch arranged in a 1x1mm square
- Circular pillars and holes, and lines in the x- and y- direction with a 5um pitch arranged in a 500x500um square
- Circular holes with a 500nm pitch arranged in a 100x100um square

Order Code:

CS-20NG

\$590