



NaDiaProbes[®] - All-Diamond AFM Probes

AFM Probes Product Catalog

Advanced Diamond Technologies (ADT) is committed to providing the unparalleled attributes of diamond to the Semiconductor, Microscopy, Electrochemical, and Biomedical markets and has developed a roadmap and portfolio of technology leading monolithic diamond probes which enable next generation applications. The ADT NaDiaProbes[®] line delivers exceptional value in long life, high precision, and new usage models unavailable from conventional Si or SiN probes. The ADT process delivers wafer scale production and economically attractive pricing for high volume applications.



ND-DYI series: Dynamic Mode

Tip:

Shape: Four-sided pyramid
 Height: 5.7 μm (± 0.1)
 Radius: Less than 50 nm
 Material: UNCD (polycrystalline diamond)

Cantilever:

Tip Setback: 8.5 μm ($\pm 4.0 \mu\text{m}$)
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range	(± 10)	(± 2)	(± 0.5)
ND-DYIRS-5	35	25-40	310	150-400	135	33	3



ND-CTI series: Contact Mode

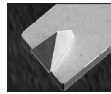
Tip:

Shape: Four-sided pyramid
 Height: 5.7 μm (± 0.1)
 Radius: Less than 50 nm
 Material: UNCD

Cantilever:

Tip Setback: 9 μm
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range	(± 5)	(± 2)	(± 0.2)
ND-CTIT1S-5	1.28	1.00-1.50	48	25-70	200	25	1
ND-CTIT1L-5	0.46	0.30-0.60	24	12-40	300	41	1
ND-CTIT2S-5	0.71	0.50-0.95	50	25-75	200	17	1
ND-CTIT2L-5	0.04	0.02-0.05	23	12-45	300	23	1
ND-CTIR1S-5	0.35	0.25-0.45	35	20-50	225	30	1
ND-CTIR1M-5	0.17	0.10-0.25	17	10-25	325	40	1
ND-CTIR1L-5	0.04	0.02-0.05	12	6-20	425	20	1
ND-CTIR2S-5	0.23	0.15-0.30	40	20-60	225	20	1
ND-CTIR2M-5	0.08	0.05-0.10	12	6-20	425	40	1
ND-CTIR2L-5	0.05	0.03-0.07	8	4-16	500	40	1



ND-SSR series: Scanning Spreading Resistance Microscopy

Tip:

Shape: Three-sided pyramid
 Height: 5.7 μm (± 0.1)
 Radius: Less than 50 nm
 Material: Conductive UNCD

Cantilever:

Tip Setback: 9 μm
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range			
ND-SSCRS-5	27	13-35	265	150-355	(± 5)	(± 2)	(± 0.5)
ND-SSCRL-5	5.5	4-7	80	50-110	245	42	2.3



ND-DYC series: Dynamic Conductive Mode

Tip:

Shape: Four-sided pyramid
 Height: 5.7 μm (± 0.1)
 Radius: Less than 50 nm
 Material: Conductive UNCD

Cantilever:

Tip Setback: 8.5 μm (± 4.0 μm)
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range			
ND-DYCRS-5	35	25-40	310	150-400	(± 10)	(± 2)	(± 0.3)



ND-CTC series: Conductive Contact Mode

Tip:

Shape: Four-sided pyramid
 Height: 5.7 μm (± 0.1)
 Radius: Less than 50 nm
 Material: Conductive UNCD

Cantilever:

Tip Setback: 9 μm
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range			
ND-CTCR1S-5	0.35	0.25-0.45	35	20-50	(± 5)	(± 2)	(± 0.3)
ND-CTCR1M-5	0.17	0.10-0.25	17	10-25	225	30	1
ND-CTCR1L-5	0.04	0.02-0.05	12	6-20	325	40	1
ND-CTCR2S-5	0.23	0.15-0.30	40	20-60	425	20	1
ND-CTCR2M-5	0.08	0.05-0.10	12	6-20	225	20	1
ND-CTCR2L-5	0.05	0.03-0.07	8	4-16	425	40	1
ND-CTCT1S-5	1.28	1.00-1.50	48	25-70	500	40	1
ND-CTCT1L-5	0.46	0.30-0.60	24	12-40	200	25	1
ND-CTCT2S-5	0.71	0.50-0.95	50	25-75	300	41	1
ND-CTCT2L-5	0.04	0.02-0.05	23	12-45	200	17	1



AD-DYC series: Sharp Conductive Dynamic Mode

Tip:

Shape: Apex
 Height: 5.7 μm (± 0.1)
 Radius: **Less than 10 nm**
 Material: Conductive UNCD

Cantilever:

Tip Setback: 8.5 μm ($\pm 4.0 \mu\text{m}$)
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range	(± 10)	(± 2)	(± 0.5)
AD-DYCRS-5	35	30-45	300	150-400	135	33	3



AD-CTC series: Sharp Conductive Contact Mode

Tip:

Shape: Apex
 Height: 5.7 μm (± 0.1)
 Radius: **Less than 10 nm**
 Material: Conductive UNCD

Cantilever:

Tip Setback: 9 μm
 Coating: 70 nm (± 10) reflective aluminum coating
 Chip: Pyrex (3.6 x 1.5 x 0.5 mm)
 Curvature: Nominally less than 3 degrees

SKU	Force Constant (N/m)		Frequency (kHz)		Length (μm)	Width (μm)	Thickness (μm)
	nominal	range	nominal	range	(± 10)	(± 2)	(± 0.5)
AD-CTCT1S-5	0.66	0.45-0.90	85	50-120	200	25	1
AD-CTCT1L-5	0.23	0.15-0.30	29	15-45	300	41	1
AD-CTCR1S-5	0.23	0.15-0.30	34	19-48	225	30	1
AD-CTCR1L-5	0.1	0.06-0.15	17	10-25	325	40	1