

## Micro cantilever

### Product name

#### OMCL-AC160BN-A2

Silicon cantilever with a high-aspect-ratio tip

Product name		
Micro Cantilever		
OMCL-AC160BN-A2		
LotNo. _____		
Typical Value	Inspection result	Quality inspection
Resonant frequency 300 (kHz)		
Spring constant 42 (N/m)	(Calculated Value)	
http://www.olympus.co.jp/probe/ OLYMPUS		

Inspection result

### OMCL - AC 160 B N - A 2

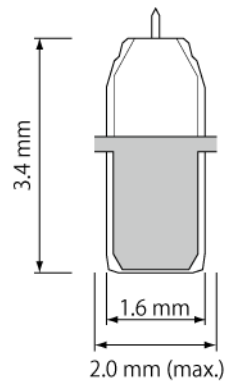
OMCL : Olympus Micro Cantilever  
 AC : main application is AC mode measurement  
 160 : Lever length of 160  $\mu\text{m}$   
 B : Blade-like tetrahedral tip  
 N : Non metal-reflex-coating  
 A : 12 chips / unit  
 2 : Chip thickness 0.3 mm

### Chip

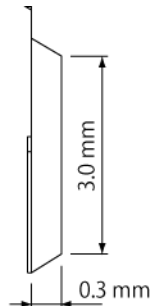
There is a rectangular cantilever on one side of the silicon chip.

#### Dimension

tip side view



side view

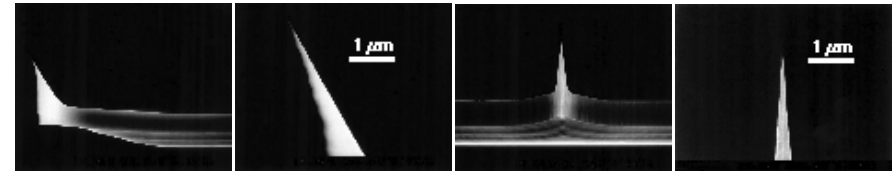


### Material

Tip & Lever	Silicon (4 - 6 ohm.cm)
Metal coating (tip side)	No coating
Metal coating (back side)	No coating
Chip	Silicon (4 - 6 ohm.cm)

### Tip

The tip shapes into a sharpened tetrahedral, that shows typical aspect ratio of 7:1 in the last 2 $\mu\text{m}$  of the tip. The tip is fabricated on the exact end of each cantilever.



Side

Side (tip apex)

Front

Front (tip apex)

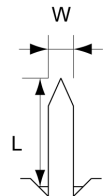
#### Dimension

	Typical value	Typical range
Tip height ( $\mu\text{m}$ )	9	7 - 15
Tip radius (nm)	8	less than 15
Tip angle (deg.)		(side) less than 23 (front) less than 12

### Cantilever

#### Dimension

Cantilever length L ( $\mu\text{m}$ )	160 ( $\pm 20$ )
Cantilever width W ( $\mu\text{m}$ )	50 ( $\pm 2$ )
Cantilever thickness t ( $\mu\text{m}$ )	4.6 ( $\pm 0.8$ )
Metal coat thickness tm ( $\mu\text{m}$ )	0



#### Calculated mechanical properties

	Typical value	Typical range
Resonant frequency (kHz)	300	200 - 400
Spring constant (N/m)	42	12 - 103

**OLYMPUS**

OMCL-AC160BN-A2

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