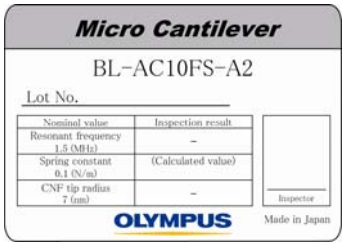
Micro cantilever

Product name

BL-AC10FS-A2

Silicon nitride cantilever with triangular plate-like tip



BL - AC 10 F S – A 2

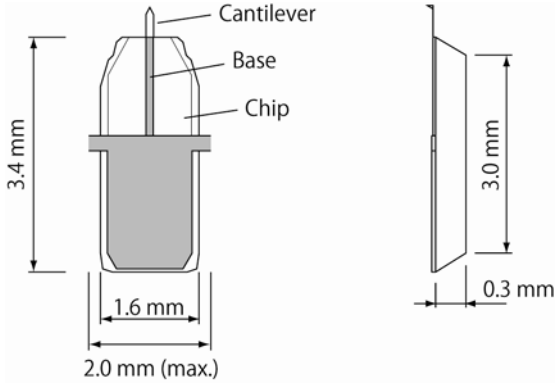
BL : Olympus Bio-Lever
AC : main application is AC mode measurement
10 : Lever length of 9 μm (around 10 μm)
F : Carbon nano fiber tip
S : Gold reflex coating (Single side)
A : 12 chips / unit
2 : Chip thickness 0.3 mm

Chip

The chip has a rectangular cantilever on one side of it. The cantilever lies flat on a base, 5 μm step height, to take a space between a chip surface and a sample while scanning.

Dimensions

tip side view　　side view

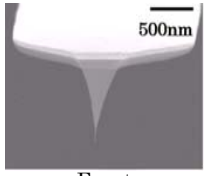


Material

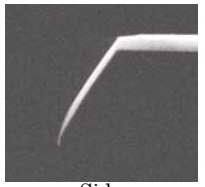
Tip and Lever	Silicon nitride
Metal coating (tip side)	Carbon on Silicon nitride cantilever
Metal coating (reflex side)	Gold / Chromium
Chip	Silicon (4 - 6 ohm.cm)

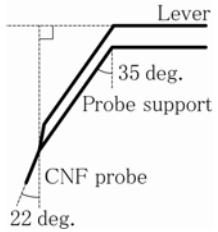
Probe

Macroscopically, the lever and tip are shaped in bird-beak. The actual probe is a small fibril of Carbon nano fiber.



Front


Side



Dimensions

	Nominal value	Typical range
Probe length of Carbon fiber (nm)	–	less than 100
Tip radius of Carbon fiber (nm)	7	less than 10
Carbon fiber width (70 nm)* (nm)	24	15 - 35
Carbon fiber tilt angle (tip tilt compensation) (deg.)	(toward lever end) +22 (0 - +35) (side) 0 (-6 - +6)	

* Diameter of the CNF probe at 70 nm down from the apex

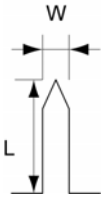
	Nominal value	Typical range
Probe support length** (μm)	1.2	0.6 – 2.0
Probe support tip half angle (deg.)	(front side view) less than 20	

** The probe support is a triangular plate-like tip

Cantilever

Dimensions

Cantilever length L (μm)	9
Cantilever width W (μm)	2
Cantilever thickness t (μm)	0.13
Thickness of Metal coat on Reflex side tm (μm)	Gold / Chromium 0.02



Calculated mechanical properties

	Nominal value	Typical range
Resonant frequency (MHz)	1.5	1.0 – 2.0
Spring constant (N/m)	0.1	0.02 – 0.2

OLYMPUS