

DPN Pens: Type 48 Bio M

Silicon nitride 48 Bio M pen arrays are optimized for large area DPN[®] patterning using the NLP 2000 System. The pen chip contains 48 “A-frame” shaped cantilevers with spacing of 66 μm . These high spring constant cantilevers are specifically designed for patterning more viscous inks, such as DNA or protein solutions. Figure 2 shows the cantilever configuration and the detailed measurements.

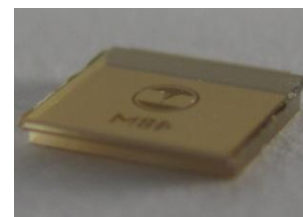


Figure 1: The 48 Bio M pen array chip.

This pen array allows the tips to be loaded with different materials, improving throughput. For simple and easy transfer of materials to the tips, the 48 Bio M pen array is designed to be used with NanoInk's 48 Bio M Inkwell Array (Part # IWL-0033-01). The number of channels and their spacing correspond to the pen configuration of the 48 Bio M pens. The inkwells allow for the simultaneous delivery of up to 48 different types of material to the pen tips.

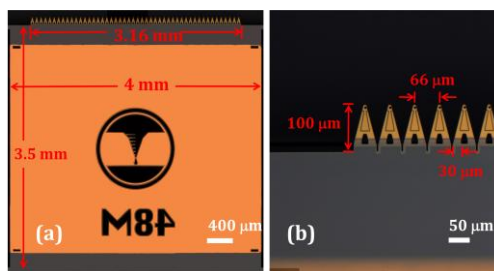


Figure 2: (a) Optical microscope images of the 48 Bio M chip. (b) A close-up image of the pens showing the cantilever configuration and their geometry.

Nominal Dimensions of DPN 48 Bio M Pens

Pen Type	Spring Constant (N/m)	Cantilever Length (μm)	Cantilever Width (μm)	Pitch (μm)
48 Bio M	0.6	100	30	66

Note: Tip radius ~ 15 nm

Item Name: Pens, 48 Bio M
Part #: PEN-0302-01
Compatible with the NLP 2000 System

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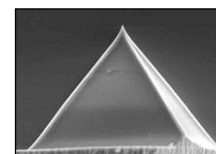


Figure 3: FESEM image of the probe tip with a radius of ~ 15 nm.