

DPN Inkwell Arrays: 100x12-M1-1

NanoInk's DPN[®] Inkwell Arrays are used to coat pen tips with ink material. The pen array is dipped into the terminal side of the micron-sized channels, containing different inks for coating the tips of the pen array. NanoInk has designed a series of Inkwell arrays to meet the needs of inking the different types of DPN pens that are available for use.

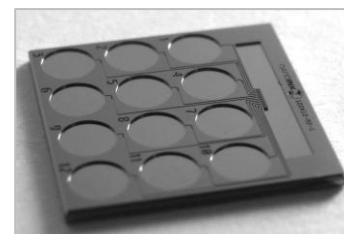


Figure 1: The 100x12-M1-1 Inkwell array chip.

The Inkwell arrays are $\sim 1 \text{ cm}^2$, easily fitting onto the sample puck of the DPN 5000, NSCRIPTOR[™] Systems, as well as the stage of the NLP 2000 System. The 100x12-M1-1 Inkwell arrays are designed specifically to be used with side 2 of NanoInk's Type-F pen arrays. The spacing between the microchannels is $100 \mu\text{m}$, corresponding exactly to the spacing between each pens on side 1 of the Type-M pens. The 100x12-M1-1 Inkwells feature twelve 2 mm diameter reservoirs with a depth of $85 \mu\text{m}$. Each reservoir is connected to $40 \mu\text{m}$ wide channel that leads to the loading area where channels taper to $10 \mu\text{m}$ across. Further details of the measurements of the twelve reservoir chips are shown in Figure 1 and 2.

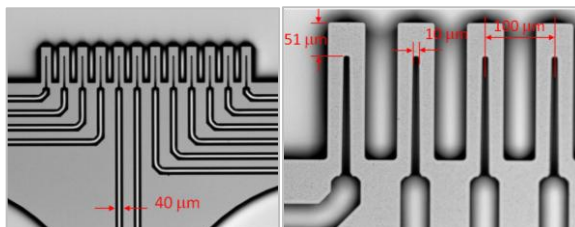


Figure 2: Optical microscope images showing (a) a view of the loading area with 12 microwells, and (b) the critical dimensions of the microchannels and microwells.

The un-etched surface around the reservoirs and microchannels is coated with a hydrophobic coating (Teflon[®]) that prevents inks from spreading to other reservoirs or channels and causing cross contamination. The reservoirs supply ink to the loading area by capillary wicking in the microchannels. The reservoirs are filled with ink using a micropipette, usually $1\text{-}2\mu\text{L}$ (a small drop). When used with the paring pen array (Type F pen Array, side 1) the reservoirs can be filled with the same ink for throughput experiments or different inks for multiplexing experiments. The system was designed to keep the microwells full of ink, even as the ink supply slowly evaporates from the reservoir.

Ordering Information:

Item Name: Inkwell Arrays, 100x12-M1-1

Item Number: IWL-0034-01

Compatible with the NSCRIPTOR[™], DPN 5000 System, and NLP 2000 System

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