Construction & Performance of an Indexed Lateral Flow Microarray (iLFM™) Strip

Proteins were printed onto CN-95 nitrocellulose using the Lighthouse Diagnostics Staccato piezo dispensing system. Spots were developed with gold anti-Hu IgG4 conjugate under lateral flow conditions. Consistent spot morphology was achieved across 1, 20, and 50 drop deposition of 427 pL/drop on 450 µm pitch. The strip comprises 5×6 sub-arrays for dietary food and environmental allergens.

Mean Signal Intensity: 50 drops, 89.1 ± 5.6 (6.3%); 20 drops, 70.6 ± 4.4 (6.3%); 1 drop, 19.8 ± 2.3 (11.6%).

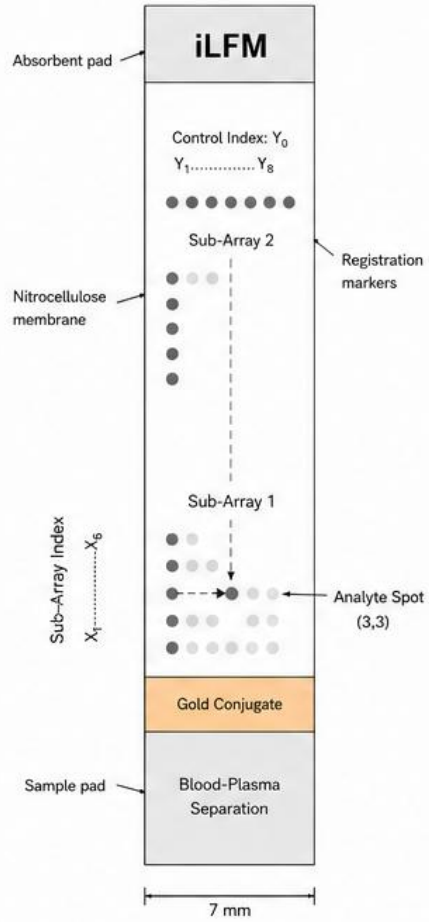
For more information: contact_us@quantiscientifics.com

Staccato Bass SDC 90-B

Piezo dispensing technology

427 pL droplets

High positioning accuracy

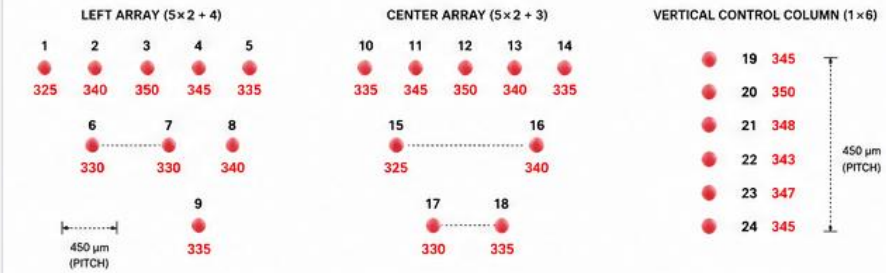


5 × 6 indexed array

427 pL droplets

450 µm pitch

NUMBERED SPOT MAP – DIAMETER (µm)



20 drops **50 drops**

LEGEND
- Spot (measured)
- Center-to-center pitch
- Diameter (µm)

SUMMARY

Total Spots	Mean Diameter (µm)	Range (µm)	Std Dev (µm)	CV (%)	Edge-to-Edge Spacing (µm)
24	340	325 – 350	9.7	2.8	~110

1 mm SCALE BAR

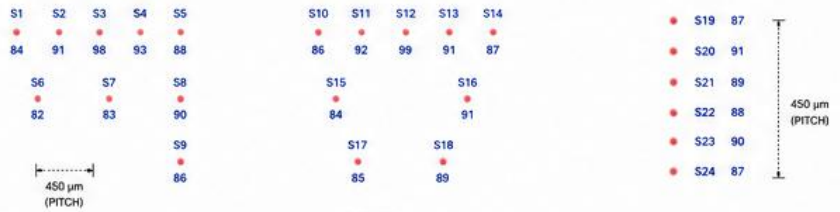
Sample (Au*40 anti-IgG4)

Mean Spot Dia. 340 µm, CV ~ 2.8 %

All diameters in micrometers (µm) Estimated ± 20 µm

SMALL SPOTS – DIAMETER MAP (µm)

All diameters in micrometers (µm) • Estimates ±15 µm



1 drop

LEGEND
- Small spot (measured)
- Center-to-center pitch
- Diameter (µm)

SMALL SPOT SUMMARY

Total Spots	Mean Diameter (µm)	Range (µm)	Std Dev (µm)	CV (%)	Edge-to-Edge Spacing* (µm)
24	89	82 – 99	4.6	5.2	~360

* Edge-to-edge spacing = Pitch (450 µm) – Mean Diameter

1 mm SCALE BAR

The small spots mirror the large spot pattern on the same 450 µm pitch grid.

Mean Spot Dia. 89 µm CV ~ 5.2 %