Supplemental Figures

micrIO: An Open-Source Autosampler and Fraction Collector for Automated Microfluidic Input-Output^{\dagger}

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Fig. S1 Standard curves of 5-fold dilution series containing both fluorophore (sulforhodamine-B) and DNA which were used to back-calculate concentrations of unknown samples. Three treatments of this dilution series were considered: one transferred through the AutoSipper, device, and Fraction Collector (internal, blue), one added to the output plate prior to plate dry-down and resuspension (external, orange), and one added to the output plate immediately prior to measurement (measurement, green). In each panel, the mean signal of known blank samples is illustrated by a red dashed line (gray box indicates ± 3 S.D.). The apparent blank concentration estimated by a standard curve is given by its intersection with the mean signal of blanks. (A) Mean relative fluorescence units (RFU) measured via epi-fluorescence microscopy of the microfluidic inlet manifold during the 'collect' phase (fit to a 4-parameter logistic function). (B) RFU measured via plate fluorimetry of the output plate (fit to a 4-parameter logistic function; an apparent blank concentration could not be estimated from the 'measurement' series). (C) Quantification cycle (C_q) measured by qPCR of the output plate (fit to a 2-parameter semi-logx function).

[†] Electronic Supplementary Information (ESI) available: [GitHub repository: https://github.com/FordyceLab/micrio]. See DOI: 10.1039/b000000x/

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Fig. S2 Graphical User Interfaces (GUIs) for the (A) AutoSipper and (B) Fraction Collector as rendered in separate cells of a Jupyter notebook.



Fig. S3 Per-channel intensity distributions for each input well of the bead generation test (894 beads total).