

## FORMULATRIX® Portfolio for Liquid Handling

Revolutionize Liquid Handling in Your Lab

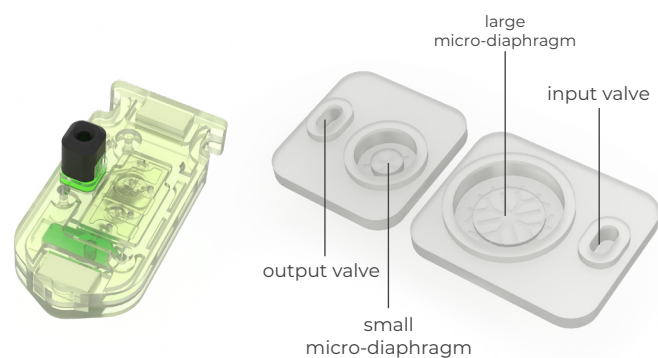
FORMULATRIX instruments and software combine innovation with intelligent features, unique technologies and intuitive user interfaces making automation easily usable to provide researchers with the most precise and efficient kind of liquid handling for the generation of trustworthy results.



## MANTIS® Low Volume Dispenser – Small, Versatile, Precise

The **MANTIS** is a programmable, low volume, low dead volume, consumables-free non-contact liquid dispenser that can reliably dispense a variety of solutions including those containing beads, cells, proteins, enzymes, probes and master mixes, utilizing FORMULATRIX proprietary positive displacement microfluidic chip technology.

- Low volume dispensing from 100 nL
- Usable for any SBS template up to 1536-well plates
- High precision (< 3%) and accuracy (< 10%)
- Minimal dead volume < 10 µL
- Up to 48 different reagents usable
- Compatible with aqueous and organic solutions
- High speed: 384x 0.5 µL dispensing in 120 seconds



*MANTIS chip and micro-diaphragm technology*

- **Efficient:** Miniaturize reactions, scale-up through-put, save on reagents and remove pipette tip cost
- **Reproducible:** Dispense volumes down to 100 nL at CV < 3%
- **Versatile:** Easily dispense and normalize reagents and cell culture assays
- **Maintain Compliance:** GLP, 21 CFR Part 11 ready

Chip Type	Diaphragm Vol.	Min Vol.	Max Vol.	Pulses per Second	Dead Vol.	CV's
Low Volume	0.1 µL + 0.5 µL	0.1 µL	∞	@ 0.1 µL: 10, @ 0.5 µL: 7	6 µL	< 3% at 0.1 µL
High Volume	1 µL + 5 µL	1 µL	∞	@ 1 µL: 10, @ 5 µL: 4	15 µL	< 3% at 1 µL
Continuous Flow	N/A	5 µL	∞	dispenses up to 600 µL / sec	150 µL	< 3% at 5 µL

## TEMPEST® Bulk Liquid Dispenser

**TEMPEST** is a consumables-free non-contact, multipurpose dispenser applying FORMULATRIX positive displacement microfluidic chip technology. Enabling you to dispense as many as 12 different reagents simultaneously by utilizing 96 independently controlled outputs. Dispense any volume, of any reagent, into any well.

- Usable for any SBS plate up to 1536-well plates
- Low volume non-contact positive displacement dispensing starting from 200 nL
- Up to 25 plates per stacker
- High precision and accuracy
- Compatible with aqueous and organic solutions



*direct pipette tip dispenses reduce dead volumes of only 100  $\mu$ L*

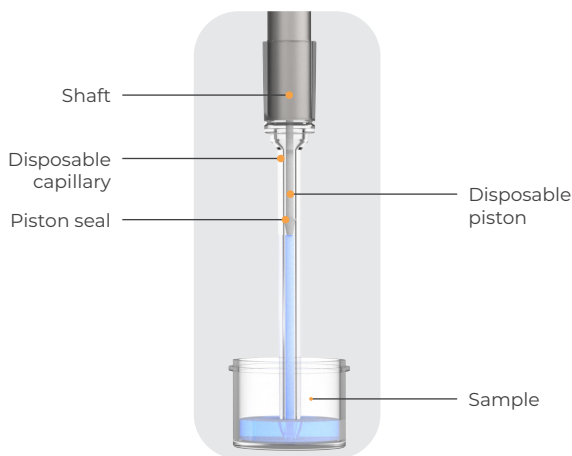
- **Precise** - Non-contact microdiaphragm technology uses positive displacement ensuring high accuracy and precision across a broad range of reagent types
- **Low Dead-Volume** - Non-recoverable dead volume as low as 48  $\mu$ L per chip
- **Flexible** - TEMPEST supports all SBS plate types, can easily be integrated with other robotic automation, and has an optional plate stackers and barcode reader
- **Fast** - Dispense 200 nL to 96-well plate in 3 seconds, 1  $\mu$ L to 384-well plate in 5 seconds

Chip Type	Part #	Diaphragm Vol.	Min Vol.	Max Vol.	Pulses per Second	Dead Vol. With Tube	Dead Vol. Pipette	CV's
Low Volume	TSCL	0.2 $\mu$ L + 1 $\mu$ L	0.2 $\mu$ L	$\infty$	8	40 $\mu$ L	100 $\mu$ L	< 8% at 0.2 $\mu$ L, < 5% at 1 $\mu$ L
High Volume	TSCH	1 $\mu$ L + 5 $\mu$ L	1 $\mu$ L	$\infty$	4	40 $\mu$ L	100 $\mu$ L	< 5% at 1 $\mu$ L, at 5 $\mu$ L

## F.A.S.T.™ Positive Displacement Sample Transfer

The **F.A.S.T.** (Flow Axial Seal Tip) is a reliable and easy-to-use liquid transfer system designed to move any viscosity of liquid quickly with its one of kind positive displacement, 96-channel head. With its high accuracy, precision, and reliability for low volume sample transfers, the F.A.S.T. system saves researchers time and reduces reagent costs.

- Easily exchangeable, barcode labelled tray with 6 position in SBS format
- Status LEDs and built-in camera for scanning tips and plates
- Automatic tip rearrangement in tip caddy
- 384 tips per caddy
- Volume range: 100 nL to 13  $\mu$ L (100 nL steps)
- Increased accuracy ( $\pm$  10 nL) and precision (CV 5% @ 0.1  $\mu$ L)
- No dead or excess volume in tips
- Semi-automated labware- and tray-calibration



- **Fast:** Save time on your liquid transfers with the unique 96-tip head
- **Flexible:** Save on consumables by using your choice of 1, 8, 12, 96 or any rectangular array of tips to transfer reagents between 96- and 384-well plates
- **Versatile:** Perform cherry-picking, serial dilutions, and plate copies (broadcast, mother-daughter transfers) with ease
- **Liquid Class Agnostic:** Forget having to program liquid classes ever again; the positive displacement tips mitigate the effects of viscosity on accuracy

- **Compact:** Save on lab space as the system's small footprint allows for desktop use yet is open for integration with complementary automation
- **Zero Cross-Contamination:** The positive displacement disposable tips ensure the integrity of your samples without any risk of cross-contamination
- **Smart:** Conduct your transfers with confidence as the system features multiple state-of-the-art failsafes including tip position sensors, automatic tip arrangement, and collision detection

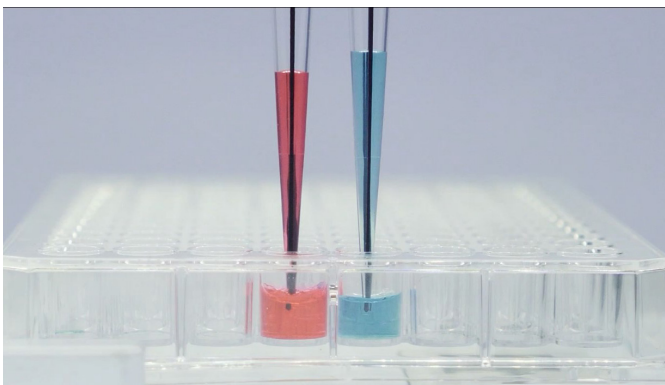
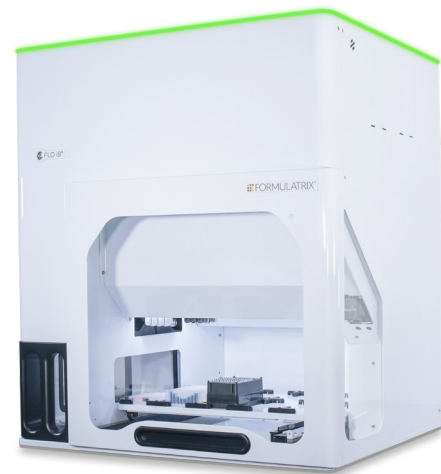
## FLO i8® Liquid Handler

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The **FLO i8** is the ideal liquid handler for running your protocols and benchwork without time consuming manual settings optimization, allowing you to focus on the research, the science, and new innovations and breakthroughs.

Intuitive software, flexible hardware, and intelligent features guarantees precise liquid transfers with no need to specify source volumes, labware geometries and even liquid properties.

- 8 fully independent spannable liquid handling channels
- 10 deck positions to use any labware in SBS format from 1 to 384 cavities
- Proprietary Next-Level Tips® technology
- Automatic tip size verification, in-box location detection and counting
- Built-in camera for scanning tips and plates
- Pressure- and conductivity-based liquid level sensing
- Dynamic liquid level tracking (DLLT)
- Automatic liquid class (ALC) adjustment



- **Incredibly easy software** - Designing your protocol has never been easier
- **Flexible** - Simplify all of your tube or plate-based labwork using the variable spanning channels and pipetting range of 0.5 to 1000 µL
- **Precise** - Reduce variability in your workflows and increase your traceability and confidence in your experiments
- **Intelligent** - Automatically sense labware, detect and track liquid levels, and optimize liquid transfers in real time with no prior input of liquid properties

Contact us today at:

[info@formulatrix.com](mailto:info@formulatrix.com)

**FORMULATRIX LLC**  
5 DeAngelo Drive  
Bedford, MA 01730 – United States

**Formulatrix Europe Limited**  
12 South Mall, 3rd Floor  
T12 RD43 - Cork, Ireland

**Formulatrix International Holding Limited**  
Unit 6, Level 13  
Gate District, Gate Building  
Dubai International Financial Centre  
Dubai, United Arab Emirates

