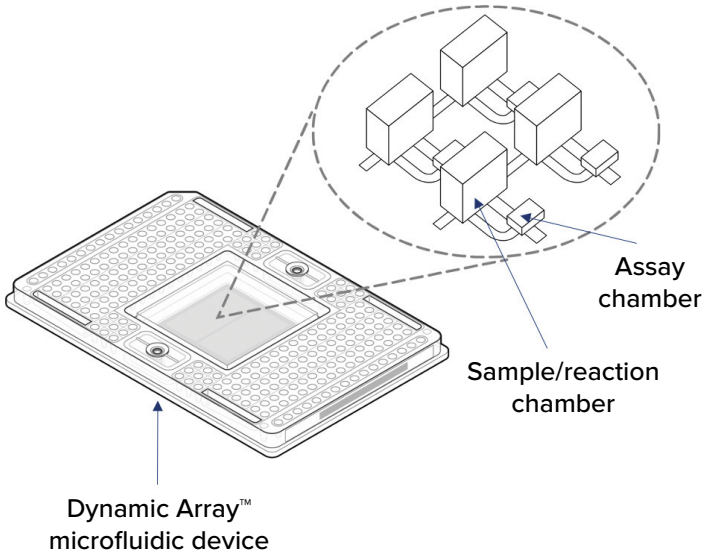
INTEGRATED FLUIDIC CIRCUITS

A versatile tool that concurrently automates hundreds to thousands of reactions per sample within a single run

Standard BioTools™ integrated fluidic circuits (IFCs) do the work for you. Fast-track genomic studies by eliminating upfront prep work and significantly reducing hands-on time, enabling high-complexity analysis with unprecedented proficiency. Microfluidics-based solutions using IFCs streamline workflows and substantially reduce costs for applications demanding sensitivity and broad dynamic range, including genotyping, gene expression, sample identification, copy number variation and NGS library preparation.

Proven proprietary technology: How it works

Experiments are easily transferable to IFCs and require a fraction of the sample and reagents needed for microplates. IFCs are precisely fabricated in microscopic dimensions with extremely accurate volumetric chambers for nanoscale processing of individual reactions.



Highlights

IFCs

Scalable
Multiple IFC formats make it easy to manage dynamic sample or assay counts.

Flexible
Open architecture allows the user to easily add, remove, replicate or change assays within a panel.

Cost-effective
Reduce cost and waste through lower consumption of reagents and lab plastics.

Go beyond multiplex output with singleplex simplicity

Microfluidic arrays: Future forward

- Perform multiple PCR-based applications including targeted NGS library preparation
- Achieve lower cost and higher operating efficiency through volume miniaturization and workflow automation
- Benefit from flexible and scalable sample throughput without changing technologies
- Automation-compatible design enables integration with lab robotic systems

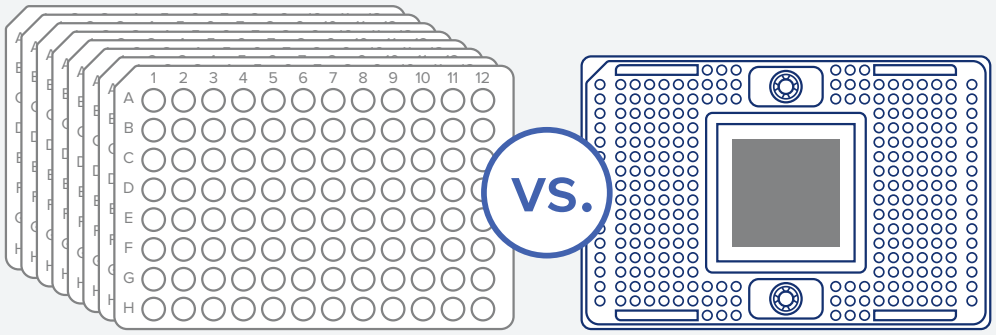


Plate-based PCR

Each sample (up to 96) is interrogated **ONLY** by assays within each inlet. Throughput and performance subject to multiplexing challenges.

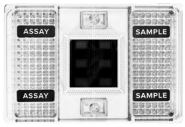
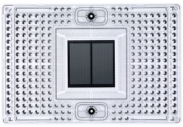
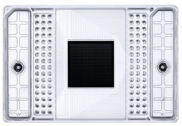
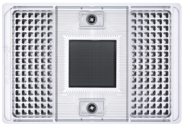
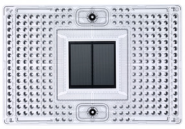
IFC

Each sample is interrogated by **EVERY** assay in independent reaction chambers using one dye channel. Up to 96 samples per run. Up to 96 assays per sample. Up to **9,216** results from one run.

IFCs are run on the Biomark™ X9 System for High-Throughput Genomics. The system contains several programs that process the IFC for thermal control and fluorescence detection, enabling different IFC formats and functions for qPCR and NGS library prep applications.

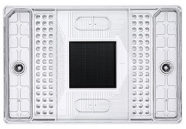
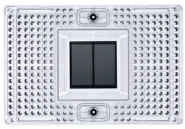
Biomark X9 System – qPCR workflow

- Flexibility and scalability to adapt to multiple projects and changing needs
- Multiple IFC formats to instantly respond to changing experimental needs

		Applications	Samples/Targets	Partitions	Datapoints
	**Flex Six™ IFC** **Lowest sample throughput** via six partitions that each support a matrix of 12 samples by 12 assays. Each partition can be run separately or together to support target selection and protocol development	GE, qPCR, GT	12/12	Six	864
	**24.192 IFC** **Low sample throughput** with high-content capacity, which allows labs to add assays as needed	GE, qPCR, GT	24/192	Zero	4,608
	**48.48 IFC** **Mid-capacity** to support early-phase discovery and low-volume testing sessions	GE, qPCR, GT	48/48	Zero	2,304
	**96.96 IFC and 96.96 GT Preamp IFC-X** **Superior data-generation capacity** for deep sample profiling with option for integrated preamplification	GE, qPCR, GT	96/96	Zero	9,216
	**192.24 IFC** **High sample throughput** to support peak seasonal and large studies	GE, qPCR, GT	192/24	Zero	4,608

One system, two workflows,
endless possibilities

Biomark X9 System – NGS library prep workflow

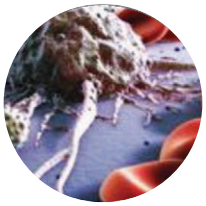
	Number of Samples Per Run	Number of Assay Targets Per Sample	Amplicon Length	Turnaround Time from DNA to NGS-Ready Libraries (one IFC run)	Sample Throughput in 24 Hours	Number of Samples Multiplexed Per NGS Run
	**LP 8.8.6** Up to 48	>1,600 per partition >9,600 per IFC	150–500 base pairs	About nine hours (includes 4.5 hours walk-away automation)	Up to 96 sample libraries	Up to 1,536 using Standard BioTools barcodes
	**LP 48.48 IFC** Up to 48	Up to 4,800	150–500 base pairs	Eight hours total (includes four hours walk-away automation)	Up to 96 sample libraries	Up to 1,536 using Standard BioTools barcodes
	**LP 192.24 IFC** Up to 192	Up to 2,400	150–500 base pairs	9.5 hours total (includes 5.5 hours walk-away automation)	Up to 384 sample libraries	Up to 1,536 using Standard BioTools barcodes

More than 9,000 publications referencing IFCs in genomics

5,310
publications

Gene expression

- Immune profiling
- Biomarker discovery and validation
- Pharmacodynamics
- Pathways



1,690
publications

SNP genotyping

- Pharmacogenomics
- Oncology
- Inherited disease
- Quality control

721
publications

NGS library preparation

- Pathogen detection
- Oncology
- Inherited disease

Approximate numbers based on Google Scholar searches

Save money | Save reagents | Save time

Learn more about the power of microfluidics: **standardbio.com/biomark-x9**

Contact us at **standardbio.com/contactus**

Unleashing tools to accelerate breakthroughs in human health™

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