



# Do More With Less

The BioMark™ HD System provides you with the ability to use a wide variety of sample types, multiple chemistry choices, and an industry leading degree of flexibility. Find out how the BioMark HD System can help you to go from discovery to validation with one easy platform.

*Do what makes sense for you*

## SAMPLE TYPES

Many cells  
Single cell  
ASPIRATES  
Limited sample  
Panels  
EvaGreen®

LCM  
cDNA  
WTA cDNA  
"DIRTY" SAMPLES

## CHEMISTRY CHOICES

ROCHE UPL Others  
TaqMan® Assays  
DIGITAL ARRAY IFC  
96.96 Dynamic Array IFC  
48.48 Access Array IFC  
FR48.48 Dynamic Array IFC

## CHIP FLEXIBILITY

12.765 Digital Array IFC  
48.48 Dynamic Array IFC



Copy Number Variation  
SAMPLE QUANTIFICATION FOR NGS  
HAPLOTYPING  
GENE EXPRESSION  
Absolute Quantitation  
Single-Cell Gene Expression  
SNP Genotyping  
Post-Microarray Validation  
microRNA Gene Expression  
Mutation Detection

*...all on one platform!*

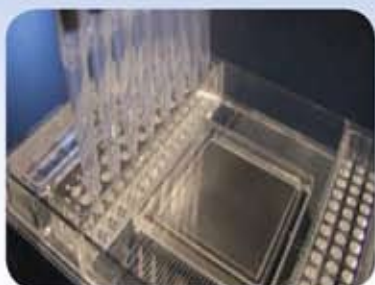
# WORK

## BioMark HD System Gene Expression Workflow

**Prepare:** Extract, reverse transcribe, and specific target amplify (STA) your samples.

### Transfer

Pipette samples and assays into inlets of a Dynamic Array™ Integrated Fluidic Circuit (IFC).



Dynamic Array IFC

### Load

Place the Dynamic Array IFC into the IFC Controller for pressure loading of samples and assays into the reaction chambers.



IFC Controller HX

Transfer time: 10 min

Total time: 10 min

Load time: 80 min

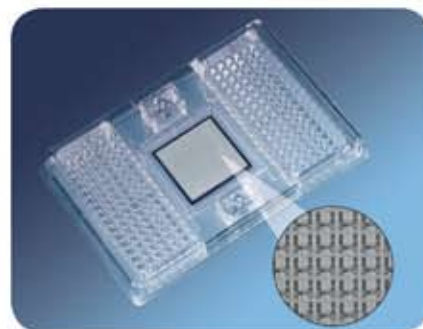
Total time: 90 min

### DECREASE PIPETTING ERROR

	96.96 Dynamic Array IFCS	384-Well Plate
Total Runs	21	500
Reactions per Run	9,216	384
Total Reactions	~192,000	~192,000
<b>Total Liquid-Transfer Steps</b>	<b>4,032</b>	<b>384,000</b>

Dynamic Array IFC vs. 384-Well Plate

### PRECISION MIXING



Dynamic Array IFC

- **Save time**—up to 99% fewer pipetting steps
- **Reduce error**—without costly robotics
- **Save money**—nanoliter volume reactions
- **No contamination**—completely sealed reaction chambers
- **Precise mixing**—microfluidic distribution of nL volumes
- **Increased reliability**—inter- and intra-chip correlations of 0.99



## Run

Place Dynamic Array IFC into the BioMark HD Reader. Samples are amplified by real-time PCR and imaged.



Run time: 60 min

Total time: 150 min

## Analyze

View and analyze results with the user-friendly data analysis suite.



Total: 9,216 assays in under 3 hours!

### THE POWER OF ONE IFC

#### BIOMARK DYNAMIC ARRAY IFC

Number of IFCs required: 1

Total time: as little as 3 hours

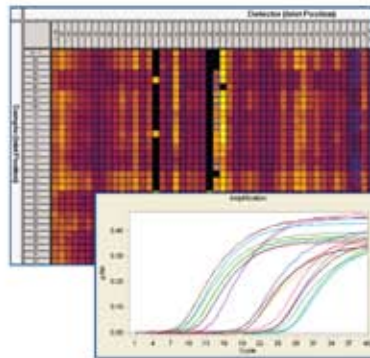
## 96 Samples X 96 Genes

#### 384-WELL PLATE SYSTEM

Number of plates required: 24

Total time: 8 days

### VIEW RESULTS OF >9,000 REACTIONS



- Heat map view
- Image view
- Results table

- **Results in under 3 hours**—up to 9,216 reactions
- **Top-level precision**—with high resolution reads
- **Adaptable plate setup**—open platform

- **Normalization**— $\Delta C_t$ ,  $\Delta\Delta C_t$  and fold change calculations
- **Faster analysis**—automatic threshold determination
- **Downstream software compatibility**—data export in .csv format

Benefits



Discover the only real-time PCR system that provides the sensitivity and throughput required to study gene expression down to the single cell level.

### *INCREASE your CONFIDENCE*

- **Use as little as 10 picograms of starting material**—profile populations or single cells
- **Maximize reproducibility**—integrate results with inter- and intra-chip correlation of 0.99
- **Enable discovery**—profile hundreds of genes from a single cell with ultra-high sensitivity

### *Save TIME and MONEY*

- **Increase number of reactions**—perform 9,216 reactions in as little as 30 minutes
- **Reduce error**—reduce pipetting error by up to 99% without the use of robotics
- **Do more with less**—do more experiments at 10x less cost per data point

### *EXPAND your POSSIBILITIES*

- **Achieve more flexibility**—change on-chip assay and sample configuration easily
- **Use various reagents**—use a number of commercially available assays and DNA binding dyes
- **Expand your design**—run more samples, assays and genes than ever before

#### **The Power of Microfluidics**

With a Fluidigm Dynamic Array IFC, high-throughput multiplexing is easy. The microfluidic architecture does the work of combining samples and primer-probe sets into 9,216 simultaneous PCR reactions. That's 24-fold more data than that produced by a 384-well plate. This radical advance in experimental density is fully leveraged through a hardware/software system that automates setup and data analysis.



