

Scalable High-Throughput Viral RNA Detection

Viral RNA Detection Solution

Fluidigm's proven microfluidic technology provides significant cost and time advantages over alternate technologies by processing samples at nanoliter-scale volumes with walkaway automation.

In private, public and government testing environments, Fluidigm instruments using integrated fluidic circuits (IFCs) are used to perform high-throughput, scalable and cost-effective testing for viral RNA such as SARS-CoV-2, which causes COVID-19.

In the News



OU Medicine, University of Oklahoma Health Sciences Center and Oklahoma Medical Research Foundation File for FDA Emergency Use Authorization for COVID-19 Detection Test Utilizing Fluidigm Technology

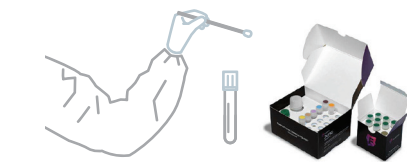
Highlights

Efficient—Maximize your budget with microfluidics technology by using up to 50 times less reagent than traditional PCR methods.

Scalable—Run nearly 6,000 samples in a 24-hour workflow on each Biomark™ HD and Juno™ system.

Flexible—Detect up to 24 unique pathogens per sample, such as SARS-CoV-2, influenza A and other respiratory disease pathogens.

Simple Low-Labor Workflow



1

Prepare samples.

Perform reverse transcription and preamplify up to 192 extracted and purified RNA samples per IFC.



2

Prepare IFC.

Transfer samples and assays to IFC.



3

Load IFC and run qPCR.

Juno automates reaction assembly within the IFC, which is transferred to Biomark HD for thermal cycling and data acquisition. Maximize throughput by processing next set of samples in parallel with IFC run.



Total time to results: 3 hours 20 minutes

Comparison to Conventional Molecular Methods

System		Biomark HD	Traditional Real-Time PCR Instrument	
Format		192.24 Dynamic Array™ IFC	96-well PCR	384-well PCR
Samples	Per run	192	96	384
Maximum targets per sample		24	1	1
Independent reactions		4,608	96	384
Sample throughput using 3-target detection panel*		192	32	128
Volume of PCR master mix used per reaction		0.1 µL	5 µL	5 µL

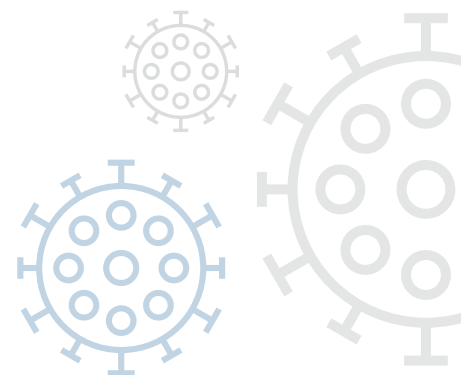
*Viral detection assays generally utilize multiple primer sets to detect viral presence, which limits the sample throughput of traditional PCR plates. For example, the CDC 2019-nCoV Real-Time RT-PCR Diagnostic Panel includes 3 primer sets, resulting in a 3x decrease in the number of samples that can be run per plate in standard 96- and 384-well formats.

Table 1. The 192.24 Dynamic Array IFC tests 192 samples with up to 24 assays in a single run, performing 4,608 simultaneous PCR reactions. These reactions are performed at the nanoscale level and use 50 times less reagent than typical 20 µL PCR reactions for viral RNA detection.

Ordering Information

Product	Product Description	Part Number
Instruments	Biomark HD	BMKHD-BMKHD
	Juno	101-6455
IFC and reagent kit bundles	192.24 GE IFC & 4X Reagent Kit—10 IFCs	102-0167
	192.24 GE IFC & 4X Reagent Kit—50 IFCs	102-0168
Additional reagents	RT Master Mix	100-6299
	Preamp Master Mix	100-5581

Learn more about COVID-19 and Fluidigm innovation at fluidigm.com/viral-detection



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