

AriaDNA

HIGH-SPEED REAL-TIME PCR ON A MICROCHIP



The possibility of performing fast PCR in miniaturized volumes has attracted attention of industries and academics to carry out cost-effective high throughput testing and screening. The new advanced AriaDNA real-time PCR system provides fast and easy-to-use microchip based nucleic acids analysis. The low volume per analysis (1.0–3.6 μ l) together with the extremely fast heating and cooling device shortens analysis time by threefold and costs per analysis is significant reduced. The technology also allows the existing PCR applications to be easily adapted to it.

FEATURES OF MICROCHIP PCR SYSTEM

PCR analysis time (45 cycles) – 20 minutes

- ❖ high thermocycling rate (10–12 $^{\circ}$ C/s)

Low sample and reagent consumption

- ❖ 0.5–1.8 μ l of 2x PCR master mix
- ❖ 0.5–1.8 μ l sample volume

Low detection limits

- ❖ 1–5 DNA copies per microreactor

Microchips with ready-to-use lyophilized PCR mixture

- ❖ reduce user labor

Qualitative and quantitative DNA/RNA analysis

- ❖ simultaneously in 20–48 microreactors
- ❖ two detector channels (FAM, SYBR Green/ROX, Cy5)

Minimizing contamination

- ❖ PCR is performed in a microchip isolated from environment
- ❖ chemical modification of the microchip surface

Small footprint

- ❖ minimize lab space requirements



Disposable microchips in different microreactor formats and materials: silicon microchips with 20, 24, 30 microreactors; aluminum microchip with 30 microreactors.



APPLICATIONS

All frequently used real-time PCR applications can easily be implemented to the AriaDNA system.

PERFORMANCE CHARACTERISTICS AND SPECIFICATIONS

Maximum rate of thermal cycling	heating: 12 °C/s cooling: 10 °C/s
Minimum DNA content in microreactor	1–5 DNA copies
Sample volume for a single analysis	0.5–1.8 µl
Minimum PCR analysis time (45 cycles)	20 minutes
Number of microreactors on a microchip	20, 24, 30, 48
Reagents required per analysis (2x PCR master mix)	0.5–1.8 µl
Microchips with lyophilized reagents	on request
Detection channel 1, dye	FAM, SYBR Green I
Detection channel 2, dye	ROX, Cy5
External PC control	USB 2.0
Software for PCR analysis, instrument setup and database maintenance	Included
Power requirements	90–240 VAC, 50/60 Hz
Power consumption	100 W
Size (W × D × H)	250 × 300 × 190 mm
Weight	5 kg

EQUIPMENT AND OPTIONS

- ❖ Microchip Real-Time PCR Analyzer AriaDNA
- ❖ Software
- ❖ Microchip starter kit (5 pcs)
- ❖ Personal computer

SOFTWARE

- ❖ Real-time data monitoring
- ❖ User friendly graphical interface
- ❖ Automatic report generation
- ❖ CFR 21 Part 11 complaint
- ❖ Export results in industry standard data formats

SERVICE

- ❖ Training and start-and-adjustment service
- ❖ Customer support and after sales service
- ❖ Consulting
- ❖ PCR reagents lyophilization

WARRANTY

All AriaDNA analyzers are covered by a twelve-month warranty.



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