

LabChip Microfluidics



Key Features

- DNA fragment size, concentration and molarity
- New small batch protocols allow efficient use of reagents with smaller sample runs
- Flexible data display options – shown in choice of virtual gel electropherogram graph, or tabular formats
- RFID signature confirms compatibility of chip and assay selection
- Automated export of results

Automated DNA Sample Analysis

LabChip® GX Touch DNA assays provide fast and easy characterization of DNA samples from 25 – 12,000 base pairs in 30-60 seconds (gDNA integrity checking up to 40,000 base pairs) saving time and valuable resources for quantification and sizing analysis.

How Does the LabChip Work?

LabChip GX Touch microfluidics technology automatically mixes the sample with an intercalating dye, electrophoretically separates and analyzes the DNA sample. Instrument optics detect the laser-induced fluorescent signal. System software automatically analyzes the data and determines fragment size and concentration using ladder and marker calibration standards. Digital data results are immediately available for review or reporting in virtual gel, electropherogram graph or table summary form.

Specifications and Ordering Information for LabChip GX Touch Kits

	DNA 1K	DNA 5K	DNA 12K	DNA High Sensitivity	Genomic DNA
Sizing Range	25 bp – 1000 bp	100 bp – 5000 bp	100 bp – 12000 bp	50 bp – 5000 bp	50 – 40,000+ bp
Sizing Resolution ¹	±15% from 25 – 100 bp ±10% from 100 – 150 bp ±5% from 150 – 700 bp ±10% from 700 – 1000 bp	±15% from 100 – 150 bp ±10% from 150 – 500 bp ±15% from 500 – 1500 bp ±20% from 1500 – 5000 bp	± 10% from 150 – 1000 bp ± 15% from 1000 – 2000 bp ± 20% from 2000 – 8000 bp ± 25% from 100 – 150 bp, 8000 – 12000 bp	± 5% from 100 – 500 bp ± 10% from 50 – 100 bp, 500 – 1000 bp ± 15% from 1000 – 3000 bp ± 22% from 3000 - 5000 bp	
Sizing Accuracy	±10%	±10%	±10%	±10%	±20% (Up to 10 kb, based on ladder)
Sizing Precision	5%	5%	5%	5%	20% CV (Up to 10 kb, based on ladder)
Linear Concentration Range	0.1 ng/μL – 50 ng/μL 0.2 Per fragment	0.25 ng/μL – 50 ng/μL Per fragment	0.25 ng/μL – 50 ng/μL Per fragment	10 pg/μL – 500 pg/μL Per fragment ⁴	0.2 - 5 ng/μL 2.0 - 50 ng/μL (diluted)
Sensitivity	0.1 ng/μL	0.25 ng/μL	0.25 ng/μL	Down to 5 pg/μL ⁵	0.1 ng/μL
Maximum Total DNA Concentration	80 ng/μL, 50 ng/μL Per fragment	80 ng/μL, 50 ng/μL Per fragment	60 ng/μL, total 50 ng/μL Per fragment	5 ng/μL, 500 pg/μL Per fragment	
Quantification Precision	20% from 25 – 500 bp 10% from 500 – 1000 bp	20% CV	20% CV from 100 – 5000 bp 25% CV from 5000 – 12000 bp	20% CV	20% CV
Maximum Salt Concentration	125 mM	125 mM	125 mM	10 mM Tris. 1 mM EDTA	
Additives ²	BSA/detergents should not exceed 0.05 mg/mL/0.01% v/v	BSA/detergents should not exceed 0.05 mg/mL/0.01% (v/v)	BSA/detergents should not exceed 0.05 mg/mL/0.01% (v/v)	BSA/detergents should not exceed 0.05 mg/mL/0.01% (v/v)	
Chip Lifetime ²	2000 samples/chip	2000 samples/chip	2000 samples/chip	2000 samples/chip	500 samples/chip
Reagent Kit Lifetime	Up to 10 chip preps for HTS or 20 chip preps for small batch runs	Up to 10 chip preps for HTS or 20 chip preps for small batch runs	Up to 10 chip preps for HTS or 20 chip preps for small batch runs	Up to 10 chip preps for HTS or 20 chip preps for small batch runs	5 chip preps
Max Samples/Chip Prep	384 samples (4 96-well plates or 1 384-well plate)	384 samples (4 96-well plates or 1 384-well plate)	384 samples (4 96-well plates or 1 384-well plate)	96 samples	48
Standard Assay: Specifications are Defined for This Assay	DNA 1K Standard: For sizing of DNA fragments in 25 – 1000 base pair range; analysis time/sample=68 seconds	DNA 5K Standard: For sizing of DNA fragments in 100 to 5000 base pair range. Fastest analysis time/sample compared with all available assays; analysis time/sample=28 sec	DNA 12K Standard: for sizing of DNA fragments in 100 to 12000 base pair range; analysis time/sample=65 sec	DNA High Sensitivity Standard: Analysis time/sample=68 sec	gDNA Quality Analysis time/sample =150 sec
Extra Assays	DNA 1K High Resolution: For sizing of DNA fragments in 25 to 1000 base pair range. Greater resolution with longer analysis time per sample; analysis time/sample=120 sec		DNA 12K High Resolution: For sizing of DNA fragments in 100 to 12000 base pair range. Greater resolution with longer analysis time/sample; analysis time/sample=130 sec) DNA 12K Extended Time: To be used only if peaks are cut off using the standard DNA 12K script (occurs in some high salt sample buffer; analysis time/sample=80 sec		

¹Resolution is defined as half height or better separation of two peaks. Actual separation performance can depend on the sample and application. Peaks that are resolved less than half height can still be accurately identified by the system software.

²Higher concentrations of BSA and detergents can result in chip failure. In addition, inorganic and organic solvents are not compatible with the DNA LabChip. Please note that although the DNA Assays cannot analyze supercoiled plasmids, the presence of plasmids above 20 ng/μL can interfere with assay results.

³Expected chip lifetime is based on use under normal laboratory conditions and adherence to PerkinElmer preparation protocols, sample guidelines and storage conditions. Individual laboratory results may vary.

⁴Standard Sample Workflow: 10 pg/μL –500 ng/μL for smears per fragment from 50 bp to 2000 bp; 50 pg/μL –500 pg/μL per fragment from 2000 bp to 5000 bp; 100 pg/μL –5 ng/μL for smears

Limited Sample Workflow (Initial concentration): 20 pg/μL –500 pg/μL per fragment from 50 bp –2000 bp; 100 pg/μL –500 pg/μL per fragment from 2000 bp to 5000 bp; 200 pg/μL –5 ng/μL for smears

⁵Standard Workflow: 5 pg/μL per fragment; 100 pg/μL for smears

Limited Sample Workflow (initial concentration): 10 pg/μL per fragment; 200 pg/μL for smears

Ordering Information	LabChip GX	LabChip GX Touch HT	LabChip GX Touch 24
DNA Extended Range LabChip	760517	760517	CLS138948
DNA 1K Reagent Kit	CLS760673	CLS760673	CLS760673
DNA 12K Reagent Kit	760569	760569	760569
DNA High Sensitivity Reagent Kit	CLS760672	CLS760672	CLS60672
Genomic DNA Reagent Kit	CLS760685	CLS760685	CLS760685
DNA 5K/RNA/CZE LabChip	760435	760435	CLS138949
DNA 5K/ RNACZE LabChip Economy 4-pack	760527	760527	N/A
DNA 5K Reagent Kit	CLS760675	CLS760675	CLS760675

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For more information, please visit our website at www.perkinelmer.com/labchip

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