



LabChip | HT DNA Version 2 Assay

Automated Integrity Assessment of DNA Samples

DNA 1K/DNA 12K/DNA 5K/DNA High Sensitivity

The Caliper LabChip HT DNA Version 2 assay suite provides a fast and easy way to analyze DNA samples ranging in size from 25 to 12,000 base pairs. Performing DNA sample analysis with these assays saves time and money by automating steps for quantification and sizing analysis. The HT DNA assays provide users with DNA fragment size, concentration, and molarity. The Labchip GX/GXII Electrophoresis System uses a single sipper microfluidic chips to aspirate DNA samples directly from 96- or 384-well plates. The microfluidics chip technology automatically mixes the sample with an intercalating dye, electrophoretically separates, and analyzes the DNA sample. The 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.

The HT DNA High Sensitivity assay is a perfect fit for Next Generation Sequencing QC and quantification of libraries!

Features

- Save Time! – High throughput provides complete automated analysis of DNA in as little as 30 seconds.
- Save Money! – Automated analysis procedure provides significant cost savings relative to the materials and labor required to run manual gels for DNA analysis.
- Automated exporting of results.
- Digital format facilitates review, export, archiving and mining of data.
- Extended workflow profile allows chip to be loaded once for support of sample processing anytime within an 8 hour window.
- Flexible data display options – Results shown in your choice of virtual gel, electropherogram graph, or tabular formats.
- RFID signature confirms compatibility of chip and assay selection.

Specifications and Reordering Information for LabChip GX Kits

	HT DNA 1K	HT DNA 5K	HT DNA 12K	HT DNA High Sensitivity
Sizing Range	25 bp - 1000 bp	100 bp - 5000 bp	100 bp - 12000 bp	50 bp - 5000 bp
Sizing Resolution¹	± 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 %
Sizing Precision	5% CV	5% CV	5% CV	5% CV
Linear Concentration Range	0.1 ng/µL - 50 ng/µL 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
Sensitivity	0.1 ng/µL	0.25 ng/µL	0.25 ng/µL	Down to 5 pg/µL ⁵
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
Carry-Over	< 0.25%	< 0.5%	< 0.5%	< 0.25%
Quantification Accuracy	± 30% or ± 1 ng/µL, whichever is greater	± 30% or ± 1 ng/µL, whichever is greater	± 40% or ± 1 ng/µL, whichever is greater	± 30%
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
Maximum Salt Concentration	125 mM	125 mM	125 mM	10 mM Tris, 1 mM EDTA
Additives²	BSA/ detergents should not exceed 0.05mg/mL/ 0.01% (v/v)	BSA/ detergents should not exceed 0.05mg/mL/ 0.01% (v/v)	BSA/ detergents should not exceed 0.05mg/mL/ 0.01% (v/v)	BSA/ detergents should not exceed 0.05mg/mL/ 0.01% (v/v)
Chip Lifetime³	2000 samples per chip	2000 samples per chip	2000 samples per chip	2000 samples per chip
Reagent Kit Lifetime	up to 9 chip preps	up to 9 chip preps	Up to 9 chip preps	Up to 5 chip preps
Samples per Chip Prep	400 samples (four 96-well plates or one 384-well plate)	400 samples (four 96-well plates or one 384-well plate)	400 samples (four 96-well plates or one 384-well plate)	96 samples
Standard Assay: Specifications are defined for this Assay	HT DNA 1K Standard: For sizing of DNA fragments in 25 to 1000 base pair range. (Analysis time per sample - 68 seconds)	HT DNA 5K Standard: For sizing of DNA fragments in 100 to 5000 base pair range. Fastest analysis time per sample compared with all available assays. (Analysis time per sample - 28 seconds)	HT DNA 12K Standard: For sizing of DNA fragments in 100 to 12000 base pair range. (Analysis time per sample - 65 seconds)	HT DNA High Sensitivity Standard: Analysis time per sample - 68 seconds
Extra Assays	HT 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 per sample - 120 seconds)		HT DNA 12K High Resolution: For sizing of DNA fragments in 100 to 12000 base pair range. Greater resolution with longer analysis time per sample. (Analysis time per sample - 130 seconds) HT DNA 12K Extended Time: To be used only if peaks are cut off using the standard HT DNA 12K script (occurs in some high salt sample buffers). (Analysis time per sample - 80 seconds)	

¹ Resolution 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.

² Higher 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 HT DNA Assays can not analyze super-coiled plasmids, the presence of plasmids above 20 ng/µL can interfere with assay results.

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

⁴ **Standard Sample Workflow:** 10 pg/µL – 500 pg/µL 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 to 2000 bp; 100 pg/µL – 500 pg/µL per fragment from 2000 bp to 5000 bp; 200 pg/µL – 5 ng/µL for smears

⁵ **Standard 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 DNA 1K/12K/High Sensitivity Chip	P/N 760517
LabChip DNA 1K Reagent Set	P/N 760526
LabChip DNA High Sensitivity Reagent Set	P/N 760568
LabChip DNA 12K Reagent Set	P/N 760398
LabChip Standard DNA 5K/RNA Version 2 Chip	P/N 760435
LabChip Standard DNA 5K Reagent Set	P/N 760396