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Sanger sequencing and fragment analysis

Applied Biosystems™ SeqStudio™ Flex Series Genetic Analyzers

Harness the freedom of the latest generation of mid-throughput genetic analyzers that provide enhanced flexibility, ease of use, state-of-the-art connectivity, and serviceability to help you reach your goals faster.

Key features

- 8-capillary and 24-capillary systems with 4-plate capacity

- Flexible scheduling with continuous plate loading and sample reprioritization

- Remote troubleshooting for rapid issue resolution

- Interactive touchscreen with easy-to-use interface

- Autocalibration

- Advanced connectivity for simple data transfer and collaboration

- Web-enabled remote monitoring, run setup, and instrument control*

- Traceability and data security with an optional security, audit, and e-signature (SAE) software module**

* Feature not available if optional SAE software module is enabled.
** SAE enablement requires on-site service by a field service engineer and a desktop PC or laptop computer purchased from Thermo Fisher Scientific.

Find it at **fishersci.com** and **fishersci.ca**

fisher scientific
part of **Thermo Fisher Scientific**

Instrument specifications

Number of capillaries	8 or 24
Number of dyes	Supports up to 8[†]
Sample format	4-plate capacity; 96-well plates, 384-well plates, or 8-tube strips
Dimensions (W x D x H)	70 x 67.5 x 86.5 cm (27.6 x 26.6 x 34.1 in.)
Weight	115 kg (253.5 lb)
Power input	100–240 V
Internal hard drive	512 GB solid state drive (SSD)
Excitation source	505 nm solid state laser
Secondary analysis software	• Applied Biosystems™ Sequence Analysis Software • Applied Biosystems™ SeqScape™ Software • Applied Biosystems™ Variant Reporter™ Software • Applied Biosystems™ GeneMapper™ Software • Applied Biosystems™ Minor Variant Finder Software • Applied Biosystems™ Analysis Modules (Quality Check, Variant Analysis, Peak Scanner, Microsatellite Analysis, SeqScreener, and Next-Generation Confirmation) on the Thermo Fisher™ Connect Platform
On-instrument tracking	Radio frequency identification (RFID); internal barcode reader
Communication interface	Connect Platform with cloud-enabled capability; USB port for Wi-Fi dongle; 3 RJ-45 ethernet ports
Configuration	Stand-alone; optional desktop or laptop computer available
Warranty	Standard 1-year warranty included; extended warranties available
SmartStart orientation	Includes one day of on-site training by a field application scientist
Remote troubleshooting	Smart Help and Remote Support enable fast and more effective resolution of instrument issues to minimize downtime
Hands-free operation	Voice command capability to perform basic instrument operations

[†] 8-dye capability requires a spectral calibration dye set definition file (available on request).

Sanger sequencing run module specifications

Run module type	Run module	Capillary length (cm)	Applied Biosystems™ polymer	23-hour throughput*			Performance
				Run time (min)	8-capillary configuration	24-capillary configuration	Contiguous read length**
Short read sequencing	ShortReadSeq50_POP7 ShortReadSeq50_POP7xl	50	POP-7™	≤30	≥368	≥1,104	≥300
Short read sequencing (with Applied Biosystems™ BigDye™ XTerminator™ Purification Kit)	BDxShortReadSeq50_POP7 BDxShortReadSeq50_POP7xl	50	POP-7	≤30	≥368	≥1,104	≥300
Rapid sequencing	RapidSeq50_POP6 RapidSeq50_POP6xl	50	POP-6™	≤65	≥168	≥504	≥450
	RapidSeq50_POP7 RapidSeq50_POP7xl		POP-7	≤40	≥280	≥840	≥500
	RapidSeq36_POP4 RapidSeq36_POP4xl	36	POP-4™	≤45	≥240	≥720	≥400
	RapidSeq36_POP6 RapidSeq36_POP6xl		POP-6	≤70	≥168	≥504	≥600
	RapidSeq36_POP7 RapidSeq36_POP7xl		POP-7	≤30	≥368	≥1,104	≥600
Rapid sequencing (with BigDye XTerminator Purification Kit)	BDxRapidSeq50_POP6 BDxRapidSeq50_POP6xl	50	POP-6	≤68	≥160	≥480	≥450
	BDxRapidSeq50_POP7 BDxRapidSeq50_POP7xl		POP-7	≤40	≥280	≥840	≥500
	BDxRapidSeq36_POP4 BDxRapidSeq36_POP4xl	36	POP-4	≤45	≥240	≥720	≥400
	BDxRapidSeq36_POP6 BDxRapidSeq36_POP6xl		POP-6	≤70	≥156	≥468	≥600
	BDxRapidSeq36_POP7 BDxRapidSeq36_POP7xl		POP-7	≤33	≥328	≥984	≥600
Fast sequencing	FastSeq50_POP6 FastSeq50_POP6xl	50	POP-6	≤90	≥122	≥368	≥600
	FastSeq50_POP7 FastSeq50_POP7xl		POP-7	≤65	≥168	≥504	≥700
	FastSeq36_POP7 FastSeq36_POP7xl	36	POP-7	≤60	≥184	≥552	≥750
Fast sequencing (with BigDye XTerminator Purification Kit)	BDxFastSeq50_POP6 BDxFastSeq50_POP6xl	50	POP-6	≤90	≥122	≥368	≥600
	BDxFastSeq50_POP7 BDxFastSeq50_POP7xl		POP-7	≤65	≥168	≥504	≥700
	BDxFastSeq36_POP7 BDxFastSeq36_POP7xl	36	POP-7	≤60	≥184	≥552	≥750
Standard sequencing	StdSeq50_POP6 StdSeq50_POP6xl	50	POP-6	≤135	≥80	≥240	≥600
	StdSeq50_POP7 StdSeq50_POP7xl		POP-7	≤125	≥88	≥264	≥850
Standard sequencing (with BigDye XTerminator Purification Kit)	BDxStdSeq50_POP6 BDxStdSeq50_POP6xl	50	POP-6	≤140	≥72	≥216	≥600
	BDxStdSeq50_POP7 BDxStdSeq50_POP7xl		POP-7	≤125	≥88	≥264	≥850
Microbial sequencing (with Applied Biosystems™ MicroSEQ™ ID kits)	MicroSeqID50_POP6 MicroSeqID50_POP6xl	50	POP-6	≤135	≥80	≥240	≥600

* Throughput is an estimate extrapolated from the average run time.

** The maximum number of contiguous bases in the analyzed sequence with an average quality value (QV) of ≥20 calculated over a sliding window 20 base pairs wide from an Applied Biosystems™ long read standard sequencing sample. This calculation starts with base number 1. The read length is counted from the middle base of the first good window to the middle base of the last good window in which the average QV is ≥20.

Fragment analysis run module specifications

Run module type	Run module name	Capillary length (cm)	Polymer	Run time (min)	8-capillary configuration	24-capillary configuration	Range**	Sizing precision† 50–400 bp	401–600 bp	601–1,200 bp
					23-hour throughput*		Performance			
Fragment analysis	FragmentAnalysis50_POP7 FragmentAnalysis50_POP7xl	50	POP-7	≤45	≥280	≥840‡	≥40 to ≤520	<0.15	<0.30	NA‡
	FragmentAnalysis50_POP6 FragmentAnalysis50_POP6xl	50	POP-6	≤100	≥112	≥336	≥20 to ≤550	<0.15	<0.30	NA‡
	FragmentAnalysis36_POP4 FragmentAnalysis36_POP4xl	36	POP-4	≤35	≥312	≥936	≥60 to ≤400	<0.15	NA‡	NA‡
	FragmentAnalysis36_POP7 FragmentAnalysis36_POP7xl	36	POP-7	≤30	≥368	≥1,104	≥60 to ≤400	<0.15	NA‡	NA‡
	FragAnalysis36_POP6 FragAnalysis36_POP6xl	36	POP-6	≤66	≥160	≥480	≥60 to ≤500	<0.15	<0.30	NA‡
Long fragment analysis	LongFragAnalysis50_POP7 LongFragAnalysis50_POP7xl	50	POP-7	≤125	≥88	≥264	≥40 to ≤700	<0.15	<0.30	<0.45
Applied Biosystems™ SNaPshot™ Multiplex Kit	SNaPshot50_POP7 SNaPshot50_POP7xl	50	POP-7	≤30	≥368	≥1,104	≥40 to ≤120	<0.50	NA‡	NA‡

* Throughput is an estimate extrapolated from the average run time.

** Resolution range: The range of bases over which the resolution is ≥1. Resolution is the peak spacing interval divided by the peak width at half-maximum recorded with an Applied Biosystems™ GeneScan™ 600 LIZ™ or GeneScan™ 1200 LIZ™ size standard sized with a third order fit. The table shows the resolution range for ≥90% of samples.

† Sizing precision: standard deviation in size for one allele in the DS-33 install standard sized with the GeneScan 600 LIZ size standard across multiple capillaries in the same run. For an injection to pass, 100% of the alleles in that injection must meet the intra-run sizing precision specifications. The table shows the sizing precision for 100% of alleles in ≥90% of samples.

‡ Not applicable due to the size of the fragments collected in the run.

Ordering information

Description	Cat. No.
SeqStudio 8 Flex Genetic Analyzer System, which includes a SeqStudio 8 Flex Genetic Analyzer with data collection software, a 1-day on-site SmartStart orientation, DNA sequencing and fragment analysis reagent kits for system performance check, and a 1-year warranty	A53627
SeqStudio 8 Flex Genetic Analyzer System plus 1-year extended warranty, which includes all items from Cat. No. A53627 plus an additional 1-year warranty	A53789
SeqStudio 24 Flex Genetic Analyzer System, which includes a SeqStudio 24 Flex Genetic Analyzer with data collection software, a 1-day on-site SmartStart orientation, DNA sequencing and fragment analysis reagent kits for system performance check, and a 1-year warranty	A53630
SeqStudio 24 Flex Genetic Analyzer System plus 1-year extended warranty, which includes all items from Cat. No. A53630 plus an additional 1-year warranty	A53792
IQ/OQ/IPV for a SeqStudio 8 Flex Genetic Analyzer System	A53769
IQ/OQ/IPV for a SeqStudio 24 Flex Genetic Analyzer System	A53771
SAE Administrator Console Software v2.1 (optional)	A53717

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Ordering information

Description	Unit size	Cat. No.
Capillary arrays		
SeqStudio Flex 24-Capillary Array (36 cm)	160 injections	A49105
SeqStudio Flex 8-Capillary Array (36 cm)	160 injections	A49104
SeqStudio Flex 24-Capillary Array (50 cm)	160 injections	A49107
SeqStudio Flex 8-Capillary Array (50 cm)	160 injections	A49106
96-well plates and accessories		
SeqStudio Flex 96-well Retainer & Base Set (standard)	4 sets	A49316
MicroAmp Optical 96-Well Reaction Plate with Barcode	20 plates*	4306737
Septa, for 96-well plates	20 units	4412614
384-well plates and accessories		
SeqStudio Flex 384-well Retainer & Base Set (standard)	4 sets	A49496
MicroAmp Optical 384-Well Reaction Plate with Barcode	50 plates*	4309849
Septa, for 384-well plates	20 units	4334868
8-tube strips and accessories		
SeqStudio Flex 8-Tube Strip Retainer & Base Set (standard)	4 sets	A49296
MicroAmp 8-Tube Strip, 0.2 mL	125 strips	N8010580
Septa, for 8-Tube Strip	20 units	4410701
System consumables		
POP-4 Polymer	384 samples	4393715
	960 samples	4393710
POP-6 Polymer	384 samples	4393717
	960 samples	4393712
POP-7 Polymer	384 samples	4393708
	960 samples	4393714
Anode Buffer Container (ABC)	4 packs	4393927
Cathode Buffer Container (CBC)	4 packs	4408256
Septa Cathode Buffer Container	10 units	4410715
Conditioning Reagent	1 pouch	4393718
Hi-Di Formamide	25 mL	4311320
Sequencing reagents		
Sequencing Standards, BigDye Terminator v3.1	4 tubes	4404312
Sequencing Standards, BigDye Terminator v1.1	4 tubes	4404314
BigDye Terminator v1.1 Cycle Sequencing Kit	1000 rxns	4337451
BigDye Terminator v3.1 Cycle Sequencing Kit	1000 rxns	4337456
BigDye XTerminator Purification Kit	1000 rxns	4376487
Fragment analysis reagents		
GeneScan 600 LIZ Size Standard v2.0	800 rxns	4408399
GeneScan 1200 LIZ Size Standard	800 rxns	4379950
GeneScan 500 LIZ Size Standard	800 rxns	4322682
GeneScan 120 LIZ Size Standard	800 rxns	4324287
GeneScan 500 ROX Size Standard	800 rxns	401734
DS-33 GeneScan Installation Standards with GeneScan 600 LIZ Size Standard v2.0	1 kit	4376911

* Additional bulk packs available for high-throughput users.

** Additional 96- and 960-sample polymer packs available.

Learn more at **thermofisher.com/seqstudioflex**