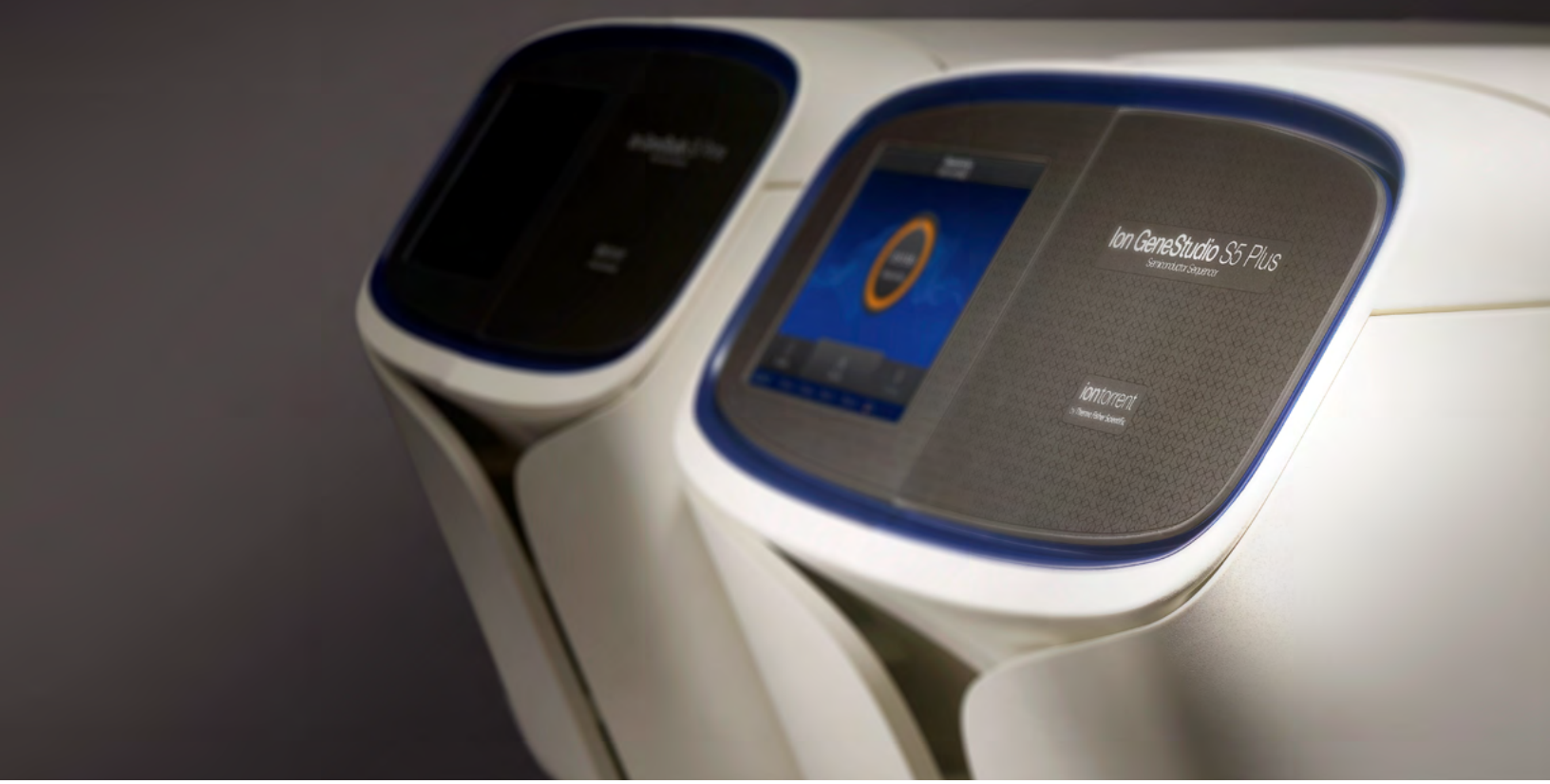
ion torrent

Introducing the Ion GeneStudio S5 series for next-generation sequencing



Same simple workflow, same flexibility.
Now faster and more scalable than ever.

The Ion GeneStudio™ S5 series is a new line of benchtop next-generation sequencing (NGS) systems that enable you to efficiently run small and large projects across multiple research applications, with the simplest sample-to-data NGS workflow and superior speed. With flexibility powered by the ability to choose from five Ion Torrent™ chips, these systems offer the opportunity to conduct wide-ranging experiments on a single platform.

ThermoFisher SCIENTIFIC

Sequence fast

Ion GeneStudio S5 System
Turnaround time: 19 hr*

and faster

Ion GeneStudio S5 Plus System
Turnaround time: 10 hr*

and faster

Ion GeneStudio S5 Prime System
Turnaround time: 6.5 hr*

Throughput scalability and application flexibility—on the same platform. Choose the system configuration that best fits your budget and turnaround time needs.

* Sequencing and analysis time based on Ion 540 Chip.

Focus Application

Ion Torrent™ sequencing chips—the key to system versatility

How can a single instrument scale so easily to accommodate multiple applications, throughputs, and data outputs? The answer is in the chip.

Just consider the number of samples you need to run and the desired data output that is optimal for your application.

Then simply select a sequencing chip that fits your throughput or application needs. This versatility enables you to run both small and large-scale projects without the need to change platforms.

"In my institute, many customers come to me for speed, and flexibility for different gene panels, tailored to disease areas of interest. This is the most elegant workflow on the market today, and I can now offer a range of applications and deliver the data in the fastest turnaround time in the market, at costs that are competitive."

- Morten Dunoe
Lab Manager, Molecular Genetic Laboratory,
Rigshospitalet,
Copenhagen University Hospital, Denmark

	Ion 510™ Chip	Ion 520™ Chip	Ion 530™ Chip	Ion 540™ Chip	Ion 550™ Chip
Max. output (reads)	3 M	6 M	20 M	80 M	130 M
Targeted DNA sequencing ** e.g., Ion Torrent™ Oncomine™ Focus Assay	•	•	•	•	•
Small genome sequencing† e.g., Bacterial typing using Ion Xpress™ Plus Fragment Library Kit		•	•		
16S metagenomics sequencing†† e.g., Ion 16S™ Metagenomics Kit		•	•		
Exome sequencing e.g., Ion AmpliSeq™ Exome Panel				•	•
Targeted RNA sequencing e.g., Ion AmpliSeq™ made-to-order RNA panels	•	•	•	•	•
miRNA/small RNA profiling e.g., Ion Total RNA-Seq v2 Kit	•	•	•		
Targeted transcriptome sequencing e.g., Ion AmpliSeq™ Transcriptome Human Gene Expression Kit				•	•
Whole transcriptome sequencing e.g., Ion Total RNA-Seq v2 Kit				•	•
Low-pass whole genome sequencing (PGS) e.g., Ion ReproSeq™ PGS Kit	•	•	•		

Five Ion Torrent™ sequencing chips achieve 2–130 M reads per run (or 2–260 M reads per day) to enable a broad range of sequencing applications.

** Assumes up to 275 bp insert size. Optimal chip selection based on the size of the panel.
† Assumes 600 bp sequencing only.
†† Assumes 400 bp sequencing only.

Simple, rapid NGS workflow with less than 45 minutes of hands-on time

Together with Ion AmpliSeq™ technology for target selection and the Ion Chef™ System for automated library and template preparation, the Ion GeneStudio S5 series helps you streamline your targeted NGS workflow, so you can focus on finding meaningful answers to your research questions.

Prepare
- Automated Ion AmpliSeq library prep, template prep, and chip loading using Ion Chef System

Sequence
- Ion GeneStudio S5 series

Analyze
- Torrent Suite™ Software
- Ion Reporter™ Software

Ion Torrent™ technology has been referenced in over 4,000 publications to date. Now you can drive your research forward using this highly cited technology with the latest innovations in leading-edge benchtop NGS.

Ion GeneStudio S5 series specifications

Chip type	Number of reads	Read length (output*)	Ion GeneStudio™ S5 System	Ion GeneStudio™ S5 Plus System	Ion GeneStudio™ S5 Prime System
			Turnaround time (sequencing run** plus analysis time)		
Ion 510 Chip	2–3 million	200 bp (0.3–0.5 Gb)	4.5 hr	3 hr	3 hr
		400 bp (0.6–1 Gb)	10.5 hr	5 hr	5 hr
Ion 520 Chip	4–6 million	200 bp (0.6–1 Gb)	7.5 hr	3.5 hr	3 hr
		400 bp (1.2–2 Gb)	12 hr	5.5 hr	5.5 hr
	3–4 million	600 bp (0.5–1.5 Gb)	12 hr	5.5 hr	5.5 hr
Ion 530 Chip	15–20 million	200 bp (3–4 Gb)	10.5 hr	5 hr	4 hr
		400 bp (6–8 Gb)	21.5 hr	8 hr	6.5 hr
	9–12 million	600 bp (1.5–4.5 Gb)	21 hr	8 hr	7 hr
Ion 540 Chip	60–80 million	200 bp (10–15 Gb)	19 hr	10 hr	6.5 hr
		200 bp (20–30 Gb) 2 runs in 1 day	NA	20 hr	10 hr†
Ion 550 Chip	100–130 million	200 bp (20–25 Gb)	NA	11.5 hr	8.5 hr
		200 bp (40–50 Gb) 2 runs in 1 day	NA	NA	12 hr†

* Expected output with >99% aligned or measured accuracy. Output dependent on read length and application.
** Sequencing run times are between 2.5 and 4 hr.
† Analysis of first run occurs concurrently with the second sequencing run.

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	Ion GeneStudio S5 System	Ion GeneStudio S5 Plus System	Ion GeneStudio S5 Prime System
Compatible chips	Ion 510, 520, 530, and 540 Chips	Ion 510, 520, 530, 540, and 550 Chips	
Dimensions (W x D x H)	54.2 x 80.6 x 50.9 cm		
Weight	63.5 kg		
Power	100–240 VAC, 50/60 Hz, 6.5–14.5 A	100–240 VAC, 50/60 Hz, 6.5–14.5 A	100–240 VAC, 50/60 Hz, 6.5–14.5 A
Instrument clearance	Top = 30.5 cm (12.0 in.) Left = 10.0 cm (4.0 in.) Right = 30.5 cm (12.0 in.) Front = 30.5 cm (12.0 in.) Back = 30.5 cm (12.0 in.)		
Working environment	• Temperature: 20–30°C (68–86°F) • Humidity: 40–60%, noncondensing • Altitude: Up to 2,000 m (6,500 ft) above sea level • Thermal output at typical power draw of 1,200 W: 4,094 BTU/hr	• Temperature: 15–30°C (59–86°F) • Humidity: 10–80%, noncondensing • Altitude: Up to 2,500 m (8,200 ft) above sea level • Thermal output at typical power draw of 1,200 W: 4,094 BTU/hr	• Temperature: 15–30°C (59–86°F) • Humidity: 10–80%, noncondensing • Altitude: Up to 2,500 m (8,200 ft) above sea level • Thermal output at typical power draw of 1,200 W: 4,094 BTU/hr (instrument) and 1100 W: 3,752 BTU/hr
Other connections	1 GigE Ethernet; 2 x USB 2.0; RJ45-type connector		
Server storage	~12 TB	~24 TB	~25 TB
Server dimensions (W x D x H) and weight	NA	NA	30.5 x 70.9 x 44.4 cm, 41.8 kg
Software	Alignment and variant calling with Torrent Suite Software; compatibility with laboratory information management systems as well as native integration with Ion Reporter Software (cloud and local server)		

Ordering information

Product	Cat. No.
Ion GeneStudio S5 series	
Ion GeneStudio S5 System	A38194
Ion GeneStudio S5 Plus System	A38195
Ion GeneStudio S5 Prime System	A38196
Instruments for sample prep automation	
Ion Chef System	4484177
Ion OneTouch 2 System	4474779