

The Ion Proton™ System

Rapid, high-throughput benchtop sequencing

The Ion Proton™ System minimizes the high cost and complexity of high-throughput sequencing, bringing it to your research lab, on your budget, and on your schedule. This system enables high-quality exome and transcriptome sequencing in just a few days.



Ion Proton™ System performance specifications with Ion PI™ Chip

Output	Up to 10 Gb		
Reads	60–80 million reads		
Read length	Up to 200-base reads		
Run time	2–4 hours		
Research areas	Cancer Genetic disorders	Agriculture Stem cells	Epigenetics
Key applications	Human-scale genome sequencing Exome sequencing	Transcriptome sequencing Copy number analysis	ChIP sequencing Targeted RNA sequencing
Library solutions	Ion AmpliSeq™ Library Kit Ion AmpliSeq™ Exome RDY Kit	Ion TargetSeq™ Exome Kit Ion Xpress™ Plus Fragment Library Kit	Ion Total RNA-Seq Kit v2 Ion Xpress™ RNA-Seq Barcode Kit Ion AmpliSeq™ Transcriptome Human Gene Expression Kit
Barcoding solutions	384 barcodes supported by Torrent Suite™ Software 96 off-the-shelf barcodes for DNA 16 off-the-shelf barcodes for RNA		
Data analysis solutions	<p>Torrent Suite™ Software processes signals, calls bases, aligns sequences, and performs basic variant calling as the primary analysis software for the Ion Proton™ Sequencer.</p> <p>Optimized data analysis workflows have been developed for genome sequencing, targeted RNA and DNA sequencing, transcriptome sequencing, exome sequencing, and other research applications using third-party software solutions and freely downloadable plugins.</p> <p>Ion Reporter™ Software performs controlled analysis, annotation, and reporting of variants along with application-specific workflows to support single, paired (tumor-normal), and trio analysis.</p>		

Specifications for the Ion Proton™ Sequencer

Working environment (for indoor use only)	Temperature: 68–77°F (20–25°C) Humidity: 40–60%, noncondensing Altitude: <6,500 ft (2,000 m)	Clearances: 12 in (30.5 cm) in rear 4 in (10 cm) on left side 4 in (10 cm) on right side 4 in (10 cm) from front edge of bench to sequencer bezel 36 in (90 cm) aisle in front of bench for operator access	Optional rack mounting with two Ion Proton™ Sequencers per rack*
	Gas supply	Connection: 0.25 in push-to-connect fitting	Pressure: 30 psi Composition: nitrogen (grade 4.8, 99.998% or better)
Other connections	Ethernet: 1 GigE	USB: 2x USB 2.0	
Power	Voltage: 100 V (min) to 240 V (max) Current: 14 A (max)	Frequency: 50/60 Hz Power draw: 1,350 W	
Dimensions	Width: 21.3 in/54.2 cm	Depth: 30.5 in/77.5 cm	Height: 18.7 in/47.4 cm
Weight	Crated for shipment: 200 lb/90.7 kg	Free-standing: 130 lb/59 kg	
Instrument computer hardware	Processor: Dual 8-core Intel® Xeon® Sandy Bridge Memory: 128 GB RAM	FPGA: Dual Altera® Stratix® V GPU processor: 1x NVIDIA® Tesla® C2075	Storage: 11 TB (SSD and HDD) Operating system: Ubuntu® 11.10

Specifications for Proton™ Torrent Server

Product configuration	A single free-standing tower computer, included with the purchase of the Ion Proton™ System. Includes Torrent Suite™ Software with all necessary software components to deliver signal processing, base calling, read alignment, and variant calling.		
Processor	Dual 8-core 2.9 GHz CPUs		
Memory	128 GB RAM		
GPU processor	2x NVIDIA® Tesla® GPUs		
Storage (approx.)	27 TB (sufficient for storage of >50 Ion PI™ Chip runs)		
Operating system	Ubuntu® 10.04		
Dimensions (approx.)	Width: 8.5 in/21.8 cm	Depth: 28 in/71.4 cm	Height: 17 in/43 cm
Weight (approx.)	120 lb/55 kg		
Power	Voltage: 100 V (min) to 240 V (max) Current: 12 A (max)	Frequency: 50/60 Hz Power Draw: 1,100 W	

Ordering information

Product	Cat. No.
Ion Proton™ System (includes Ion Proton™ Sequencer and Ion Proton™ Torrent Server)	4476610
Additional equipment	
Ion Chef™ Instrument	4484177
Ion OneTouch™ 2 System	4474779
Ion Reporter™ Server System	4487118
Ion Torrent Storage™ 20T (7 x 4 TB drives, ~20 TB usable storage)	4488124
Ion Torrent Storage™ 40T (12 x 4 TB drives, ~40 TB usable storage)	4488142

Find out more about the Ion Proton™ System at lifetechnologies.com/proton



* Space-saving rack can be purchased for the Ion Proton™ System. Contact your sales representative for details.

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