

**ion torrent**  
Sequencing for all.™

# The Ion PGM™ System

## High quality, accessible sequencing

The Ion PGM™ System makes affordable, high quality next-generation sequencing accessible to human disease researchers and microbiologists around the world. The Ion PGM™ System is a reliable sequencing platform that combines simple sample preparation and data analysis solutions with flexible chip output for ultimate project flexibility.



### Ion PGM™ System Performance Specifications

		Ion 314™ Chip v2	Ion 316™ Chip v2	Ion 318™ Chip v2
<b>Output*</b>	200 base	30-50 Mb	300-600 Mb	600 Mb-1 Gb
	400 base	60-100 Mb	600 Mb-1 Gb	1.2-2 Gb
<b>Reads</b>		400-550 thousand	2-3 million	4-5.5 million
<b>Run time</b>	200 base	2.3 hr	3.0 hr	4.4 hr
	400 base	3.7 hr	4.9 hr	7.3 hr
<b>Research areas</b>		Cancer research Genetic disease research Microbiology	Stem cell research Agriculture Epigenomics	Metagenomics Forensic science Ancient DNA genomics
<b>Key applications</b>		Targeted DNA sequencing Copy number analysis Targeted RNA sequencing Small RNA sequencing	<i>de novo</i> microbial sequencing Bacterial typing Viral typing Metagenomics	ChIP sequencing Methylation analysis SNP validation Sequencing by genotyping
<b>Target selection solutions</b>		Ion AmpliSeq™ Technology	Ion TargetSeq™ Technology	
<b>Library solutions</b>		Ion AmpliSeq™ Library Kit Ion Xpress™ Plus Fragment Library Kit	Ion Total RNA-Seq Kit v2 Ion Library Equalizer™ Kit	384 barcodes supported by Torrent Suite™ Software

<b>Data analysis solutions</b>	<p>Torrent Suite™ Software processes signals, calls bases, aligns sequences and performs basic variant calling as the primary analysis software for the Ion PGM™ Sequencer.</p> <p>Optimized data analysis workflows have been developed for targeted DNA sequencing, targeted RNA sequencing, microbial <i>de novo</i> sequencing, microbial typing, and other applications using 3rd party software solutions and freely downloadable plug-ins.</p> <p>Ion Reporter™ Software performs controlled analysis, annotation, and reporting of variants along with application specific workflows to support single, trio and paired tumor normal analysis. The Ion Reporter™ OncoPrint® workflow coupled with Ion AmpliSeq™ DNA panels, enables cancer researchers to address the key challenge of discerning cancer driver mutations from passenger mutations.</p>
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\*Expected output with >99% aligned/measured accuracy. Output is dependent on read length and application.

## Ion PGM™ Sequencer Specifications

Working environment (for indoor use only)	Temperature: 68–77°F (20–25°C)	Clearances:	
	Humidity: 40–60%, noncondensing	12 in (30.5 cm) in rear	4 in (10 cm) on left side
	Altitude: <6,500 ft (2,000 m)	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	8 in (20 cm) from front edge of bench to the conical tubes
Gas supply	Connection: 0.25 in push-to-connect fitting	Pressure: 35–45 psi	Composition: nitrogen (grade 4.5, 99.995% or better)
Other connections	Ethernet: 1 GigE	USB: 2x USB 2.0	
Power	Voltage: 100 V (min) to 240 V (max) Current: 9 A (max)	Frequency: 50/60 Hz Power draw: 200–300 W	
Dimensions	Width: 24 in/61 cm	Depth: 20 in/51 cm	Height: 21 in/53 cm
Weight	Crated for shipment: 85 lb/39 kg	Free-standing: 65 lb/30 kg	

## PGM™ Torrent Server Specifications

Product configuration	A single free-standing tower computer appliance, included with the purchase of the Ion PGM™ System. Includes Torrent Suite™ Software with all necessary software components to deliver signal processing, base calling, read alignment, and variant calling.		
Processor	Dual 6-core 2.66 GHz CPUs		
Memory	48 GB RAM		
GPU processor	1x NVIDIA® Tesla® GPUs		
Storage (approx.)	16 TB		
Operating system	Ubuntu® 10.04		
Dimensions (approx.)	Width: 8.5 in/21.6 cm	Depth: 22.3 in/56.6 cm	Height: 22.3 in/56.6 cm
Weight (approx.)	100 lb/45 kg		
Power	Voltage: 100 V (min) to 240 V (max) Current: 6.7 A (max)	Frequency: 50/60Hz Power Draw: 1,100 W	
Data formats	Industry-standard FASTQ, SFF, BAM, and VCF format outputs		

## Ordering information

Description	Cat. No.
Ion PGM™ System (includes Ion PGM™ Sequencer and PGM™ Torrent Server)	4462921
Automation Options	
Ion Chef™ System	4484177
Ion OneTouch™ 2 System	4474779

Find out more about the Ion PGM™ System at [lifetechnologies.com/PGM](http://lifetechnologies.com/PGM)

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