

Ion PGM Dx System

Empowering development of molecular diagnostic tests with next-generation sequencing



The Ion PGM™ Dx System* brings the power of next-generation sequencing (NGS) into your molecular diagnostics laboratory. This reliable combined-function NGS platform offers key workflow advantages designed specifically for regulated laboratory environments and enables *in vitro* diagnostics applications with the speed and simplicity of the Ion Torrent™ platform.

Key benefits

- A complete NGS instrument system developed under design control and in accordance with ISO 13485 requirements for targeted sequencing of human genomic DNA. Includes the following: Ion PGM™ Dx Sequencer, Ion OneTouch™ Dx Instrument, Ion OneTouch™ ES Dx Instrument, Ion PGM™ Dx Chip Minifuge, and Ion Torrent™ T430 Server with Ion PGM™ Dx Software Pack v5.0
- Enables 21 CFR Part 11 compliance, offering role-based workflows, sample and reagent tracking, QC metrics, and audit trail
- Optimized data analysis workflows developed for targeted DNA sequencing, enabling users to create protocols that are run in a locked workflow environment, from library construction to variant calling
- Includes in-run controls for automatic assessment of run success
- Supports key applications such as targeted DNA sequencing and SNP and indel analysis
- Compatible with many laboratory information management systems, providing XML input and manager-controlled data output

Ion PGM Dx System performance specifications

Ion 318 Dx Chip	
Output†	600 Mb–1 Gb (200-base)
Reads	4–5.5 million
Run time	4.4 hr (200-base)



Data analysis solutions included with the Ion PGM Dx Software Pack

- Torrent Suite™ Dx Software v5.0 is for *In Vitro* Diagnostic Use, and processes signals, calls bases, aligns sequences, and performs basic variant calling as the primary analysis software for the Ion PGM™ Dx Sequencer
- Torrent Suite™ Assay Development Software v5.0** offers greater system utility for clinical research

Ion PGM Dx Sequencer

Working environment (for indoor use only)	Temperature: 59–86°F (15–30°C) Humidity: 12–89%, noncondensing Altitude: <6,500 feet (0–2,000 m)
Storage	Temperature: –22–86°F (–30–60°C) Humidity: 20–80%, noncondensing
Clearances	12 in. (30.5 cm) in rear 4 in. (10 cm) left and right sides 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: 25–45 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 (approx.)	Width: 24 in./61 cm Depth: 20 in./51 cm Height: 21 in./53 cm
Weight	85 lb/39 kg (crated for shipment) 65 lb/30 kg (freestanding)

* For *In Vitro* Diagnostic Use. Available in the US and other selected countries globally. Please inquire with your sales representative for local availability.

** Torrent Suite Assay Development Software is For Research Use Only. Not for use in diagnostic procedures. Users developing assays are advised to use Analyte Specific Reagents.

† Expected output with >99% aligned/measured accuracy. Output is dependent on read length and application.

	Ion OneTouch Dx	Ion OneTouch ES Dx	Ion OneTouch Dx Chip Minifuge
Operating environment (for indoor use only)	Temperature: 68–86°F (20–30°C) Humidity: 10–80%, noncondensing Altitude: <6,500 feet (0–2,000 m)	Temperature: 68–86°F (20–30°C) Humidity: 10–80%, noncondensing Altitude: <6,500 feet (0–2,000 m)	Temperature: 68–86°F (20–30°C) Humidity: 10–80%, noncondensing Altitude: <6,500 feet (0–2,000 m)
Storage	Temperature: -22–86°F (-30–60°C) Humidity: 20–80%, noncondensing	Temperature: -22–86°F (-30–60°C) Humidity: 20–80%, noncondensing	Temperature: -22–86°F (-30–60°C) Humidity: 20–80%, noncondensing
Other connections	Ethernet: 1 100 Mb/s USB: 1x USB 2.0	n/a	n/a
Power	Voltage: 100 V (min) to 240 V (max) Current: 5.5 A (max) Frequency: 50/60 Hz Power draw: <650 W	Voltage: 100 V (min) to 120 V (max) or 220 V (min) to 240 V (max) Current: 0.5 A (max) Frequency: 50/60 Hz Power draw: <30 W	Voltage: 100 V (min) to 120 V (max) or 220 V (min) to 240 V (max) Current: 130 mA (max, 120 V model) 65 mA (max, 230 V model) Frequency: 50/60 Hz Power draw: <16 W
Dimensions	Width: 16 in./40.6 cm Height: 13 in./33 cm Depth: 18 in./45.7 cm	Width: 11.5 in./29.2 cm Height: 9.5 in./24.1 cm Depth: 16 in./40.6 cm	Width: 6 in./15.2 cm Height: 4 in./10.2 cm Depth: 6 in./15.2 cm
Weight	40 lb/18.1 kg	11 lb/5 kg	2 lb/0.9 kg

Ion Torrent T430 Server specifications

Product configuration	A single freestanding tower computer is included with the purchase of the Ion PGM Dx System. Includes Ion PGM Dx Software Pack v5.0 with all necessary software components to deliver signal processing, base calling, read alignment, and variant calling.		
Processor	Dual processor 2 x E5-2660 v3	Memory: 128 GB RAM	Storage: 24 TB
Operating system	Ubuntu™ 14.04	Data formats: Industry-standard FASTQ, BAM, and VCF format outputs	
Power	Voltage: 100 V (min) to 240 V (max) Current: 6.7 A (max)	Frequency: 50/60 Hz	Power draw: 1,100 W
Dimensions	Width: 11.98 in./30.5 cm Height: 17.5 in./44.4 cm Depth: 22 in./55.9 cm		
Weight	66.49 lb/30.16 kg		

Ordering information

Ion PGM Dx Instrument System		Cat. No.
Ion PGM Dx Sequencer	Ion PGM Dx Chip Minifuge	A25511
Ion OneTouch Dx Instrument	Ion Torrent Server with Ion PGM Dx Software Pack v5.0 (includes Torrent Suite Dx Software v5.0 and Torrent Suite Assay Development Software** v5.0)	A25511
Ion OneTouch ES Dx Instrument	Ion PGM Dx System Installation & Training Kit	A25511
Ion PGM Dx Instrument System consumables		
Ion PGM Dx Library Kit	Ion PGM Dx Sequencing Kit	A25512
Ion OneTouch Dx Template Kit	Ion 318 Dx Chip Kit	A25512

Find out more about the Ion PGM Dx System at
thermofisher.com/pgm-dx

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