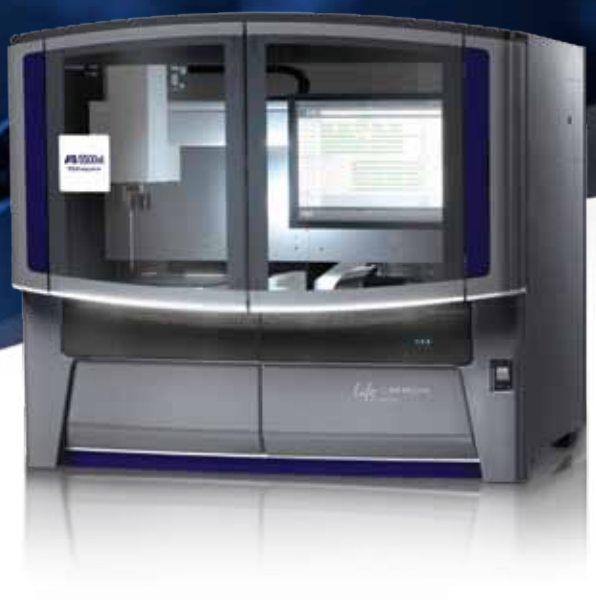
applied biosystems™
by life technologies™

5500xl SOLiD™ System

Transformative accuracy for translational research



5500xl SOLiD™ System

Preliminary Information Sheet

Key Benefits

- **Superior variant discovery**
  99.99% accuracy with the Exact Call Chemistry (ECC) Module
- **Powerful benchtop system**
  Delivery of up to 30 Gb/day
- **Superior data quality**
  Embedded controls, reagent usage tracking, and simplified software user interface
- **Cost effective research**
  Lower cost per Gb of mappable sequence with two configurable FlowChips
- **Robust "Six Sigma" design**
  Co-developed with Hitachi-Hi Technologies for the ultimate in instrument quality

Overview

Never before has a next-generation sequencing platform provided the combination of accuracy, sensitivity, and cost effectiveness to support your large translational research studies–until now. The new 5500xl SOLiD™ System ensures optimal productivity with two flexible FlowChips, embedded quality controls, intuitive user workflows, and project scalability. With the 5500xl SOLiD™ System, you are empowered to discover rare genetic events or sub-populations of somatic mutations at an unprecedented pace.

When coverage is not enough

Additional sequence coverage fails to compensate for poor accuracy in the detection of rare variants that may hold the key to understanding cancer progression, disease penetrance, or drug resistance. The 5500xl SOLiD™ System means performing 25% less sequencing than a next-generation sequencing platform with 99.9% system accuracy in order to detect somatic variant present at 1%. The industry-leading accuracy of the SOLiD™ System enables detection of significant biological variation for applications like whole genome resequencing, targeted resequencing, and whole transcriptome analysis.

When flexibility, speed, and cost are crucial

Multidisciplinary translational research programs often require processing of multiple samples across multiple applications. The 5500xl SOLiD™ System provides you the flexibility to configure your sequencing runs to your project and throughput needs. The system's two configurable microfluidic FlowChips process up to 12 independent samples and the intelligent barcoding kits multiplex up to hundreds of samples in a single run. "Pay per use" sequencing and independent run lanes tailor the system to any project scale. With the 5500xl SOLiD™ System, you won't delay projects anymore by optimizing your

run configurations to attain the lowest cost per sample.

When the utmost productivity and efficiency are essential

Ease of use, quality control, and speed are integral components of any next–generation sequencing workflow. Co-developed with Hitachi-Hi Technologies, the 5500xl SOLiD™ System's elegant benchtop design (Figure 1) relays "Six-Sigma" processes to streamline your research. The 5500xl SOLiD™ System delivers streamlined fluidics and a simple, intuitive graphical user interface (GUI) for easy set-up and run monitoring. Real-time analysis and 60% smaller data footprints expedite data export and analysis time. Additionally, with embedded sequencing controls and reagent usage tracking, the 5500xl SOLiD™ System empowers you to get extremely high quality and biologically-meaningful data out of every sequencing run.

Take comprehensive research to new heights

The superior accuracy, flexibility, and maximum productivity of the 5500xl SOLiD™ System accelerate comprehensive research. Larger translational medicine initiatives, genome consortiums, and disease-subtype stratification projects with resulting ground-breaking publications are now within your grasp. Catch them all with the new 5500xl SOLiD™ System.

Figure 1. Key attributes of the 5500xl SOLiD™ System.
The system features, contributing to the system robustness, reproducibility, efficiency, and cost-effectiveness are illustrated: (1) intuitive software, (2) configurable microfluidic FlowChips, (3) reagent slider deck, (4) reagent usage tracking, (5) rapid robotic fluidic arm, and (6) embedded sequencing controls.

5500xl SOLiD™ System Specifications*

System Components	• Benchtop instrument and control software with user-friendly design • 5500xl-u SOLiD™ System, Upgrade from SOLiD 4 (P/N 4452848)	
Dimensions (W x D x H)	1200mm x 750mm x 800mm	
Configuration	2 configurable microfluidic FlowChips each with 6 independent run lanes	
System Accuracy	99.99%**	
Throughput/Day	Microbeads: Up to 20–30 Gb Nanobeads: Up to 30-45 Gb	
Throughput/Run	Microbeads: Up to 180 Gb or greater than 2.8 B tags (paired-end or mate-paired runs) Nanobeads: Up to 300 Gb or greater than 4.8 B tags (paired-end or mate-paired runs)	
Samples/Run* **	Microbeads: • 2 Genomes • 24 Exomes • 12 Transcriptomes	Nanobeads: • 3 Genomes • 40 Exomes • 20 Transcriptomes
Read Length	• 75 bp (fragment) • 75 bp x 35 bp (paired-end) • Up to 60 bp x 60 bp (mate-paired)	
Run Time** **	• 1 day for 35 bp, 1 lane • 7 days for 75 bp x 35 bp or 60 bp x 60 bp, 12 lanes	
System Features	• Internal controls to enable pre- and real time run checks to help maximize data quality and performance • Flexible system configuration allows cost effective consumable usage • Reduced data footprint for faster data transfer and analysis	
Consumables	Easy-to-use, application-specific kits	
Multiplexing	96 barcodes for DNA and RNA applications	

*Specifications subject to change. **Requires use of ECC module. ***30x coverage for human genome; 100x-200x coverage for Exome; Whole Transcriptome ≥100 M reads/sample. ****Longer run times may result with the use of the ECC module.

Learn more about the 5500xl SOLiD™ System at www.appliedbiosystems.com/solid5500

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