

Applied Biosystems® SOLiD® EZ Bead™ System

Simplifying next-generation sequencing



Key Benefits

- **Automated**—simplified workflow with less than 1 hour of hands-on time
- **Reproducible**—increased reproducibility for larger yields of sequencing-ready beads
- **Modular**—customizable instrument configurations for individual throughput and application-specific needs
- **Cost-effective**—multiplexing of up to 96 samples to maximize time and cost savings
- **Scalable**—a variety of bead scales to support application-specific analysis and sample multiplexing
- **Quality control**—check points throughout the workflow for greater experimental control

Overview

The new SOLiD® EZ Bead™ System simplifies next-generation sequencing workflows by providing an automated solution for reproducible bead preparation with less than 1 hour of hands-on time. The system is specifically designed with system modularity and quality control check points for greater experimental control. The SOLiD® EZ Bead™ System delivers a cost-effective solution for streamlining the sequencing workflow with significant time savings and support for multiplexed libraries.

System attributes

Automated workflow

The SOLiD® EZ Bead™ System automates the SOLiD® System workflow from emulsion PCR (ePCR) to templated bead deposition. The availability of pre-packaged reagents minimizes handling errors and improves the quality and quantity of templated beads. With less than 1 hour of hands-on time, sample preparation time is reduced by up to 80% (Figure 1).

Quality control

The open architecture of the SOLiD® EZ Bead™ System offers quality control checkpoints to enable high-quality sequencing results. Self-contained consumables and automated decontamination procedures help minimize cross-contamination between samples, further increasing data quality.

Modular design

Specifically designed to fit individual throughput and laboratory needs, the SOLiD® EZ Bead™ System facilitates customizable instrument configurations to align with your research. The system's three modules, the SOLiD® EZ Bead™ Emulsifier, the SOLiD® EZ Bead™ Amplifier, and the SOLiD® EZ Bead™ Enricher, support multiple sequencing instruments and extend to the entire family of SOLiD® Analyzers.

Scalable throughputs

The SOLiD® EZ Bead™ System supports a variety of bead outputs to accommodate low-, medium-, and high-throughput applications for the 5500 Series Genetic Analysis Systems or the SOLiD® 4 System. Reagents are prepackaged as E10, E20, E80, and E120 accordingly.

Higher-quality, cost-effective sequencing

The SOLiD® EZ Bead™ System produces more high-quality "sequencing-ready" beads than ever before at a fraction of the cost. The system's compatibility with 96 sample multiplexing promotes higher sample throughput per run and further reduces the cost to process each sample. With automation, minimal costs, and seamless effort, the SOLiD® EZ Bead™ System enables dramatic increases in sequencing productivity to further accelerate scientific discovery.

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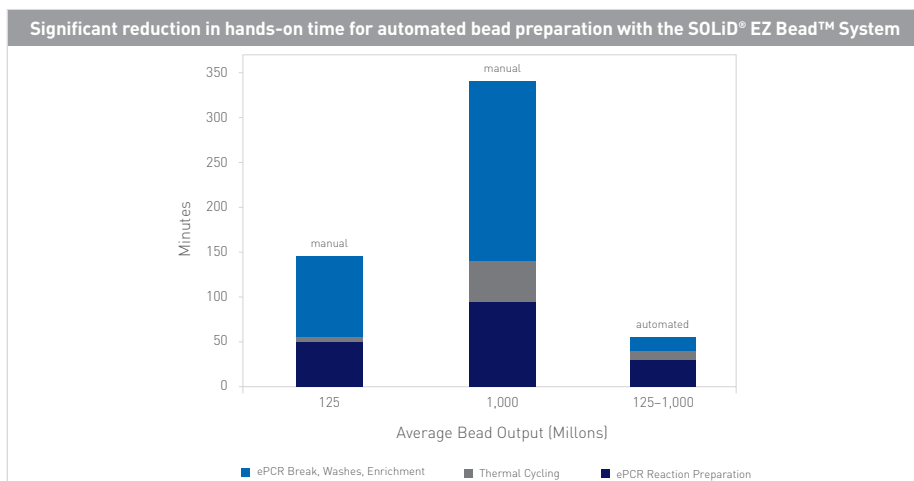


Figure 1. Comparison of hands-on time for manual versus automated bead generation for SOLiD® System sequencing. Relative times for emulsion generation (dark blue), clonal amplification (grey), and bead break and enrichment (light blue) are shown for two different templated bead scales.

SOLiD® EZ Bead™ System Specifications

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|------------------------------|---|
| System | SOLiD® EZ Bead™ System (PN 4448417) includes: <ul style="list-style-type: none">• SOLiD® EZ Bead™ Emulsifier (PN 4448419)• SOLiD® EZ Bead™ Amplifier (PN 4448418)• SOLiD® EZ Bead™ Enricher (PN 4448420) |
| Dimensions and weight | <ul style="list-style-type: none">• SOLiD® EZ Bead™ Emulsifier, 40 cm x 28.1 cm x 33 cm, 15.9 kg• SOLiD® EZ Bead™ Amplifier, 56.2 cm x 47.9 cm x 49.1 cm, 32 kg• SOLiD® EZ Bead™ Enricher, 73 cm x 49.5 cm x 52.3 cm, 39 kg |
| System run time | <ul style="list-style-type: none">• SOLiD® EZ Bead™ Emulsifier, 30 min• SOLiD® EZ Bead™ Amplifier, 3.5 hr• SOLiD® EZ Bead™ Enricher, 3.5 hr |
| System hands-on time | Less than 1 hour |
| Throughput | <ul style="list-style-type: none">• E10 scale: 125 M beads/run• E20 scale: 250 M beads/run• E80 scale: 1 B beads/run• E120 scale: 2.2 B beads/run |
| Library types | <ul style="list-style-type: none">• Fragment (supporting fragment and paired-end sequencing)• Mate-paired |
| Starting material | 500 pM amplifiable library DNA derived from source DNA or RNA |
| Operating environment | Temperature: 15–25°C; Humidity: 20–80%, noncondensing |
| Consumables | Prepackaged consumables kits for various templated bead outputs |
| Power requirements | 110/220 V (US/International) |
| Multiplexing | Up to 96 barcoded libraries for DNA- or RNA-based applications |
| Supported bead size | 1 micron |
| Template load | >60,000 copies per bead |

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