

LE220Rsc Focused-ultrasonicator

High-performance, Scalable, Automated Sample Preparation

As the highest power and fastest sample processing system in the Covaris portfolio, the LE220Rsc rapidly delivers AFA-energetics® to standard SBS format plates using the scanning mode. It offers tunable acoustic energy, integration with robotic platforms, and more power than the LE220-plus and R230 Focused-ultrasonicators. This instrument enables a variety of novel high power, fast process applications such as lysis of difficult to lyse microorganisms (for example, yeast) in the 96 AFA-TUBE TPX plate and dissolution of difficult to solubilize compounds.

Feature	Benefit
Automated workflows with full robotic integration	<ul style="list-style-type: none"> Accurate, reproducible, and robust sample preparation Versatile High-throughput
Powered by AFA-energetics	<ul style="list-style-type: none"> Tuneable, non-contact processing Multiple sample types
Multiple isothermal energy delivery modes	<ul style="list-style-type: none"> Compatible with most processes Simplify highly complex workflows
Broad temperature range at high power	<ul style="list-style-type: none"> Multiple applications: nanoparticle formulation, microbe lysis, and hydrophobic compound dissolution

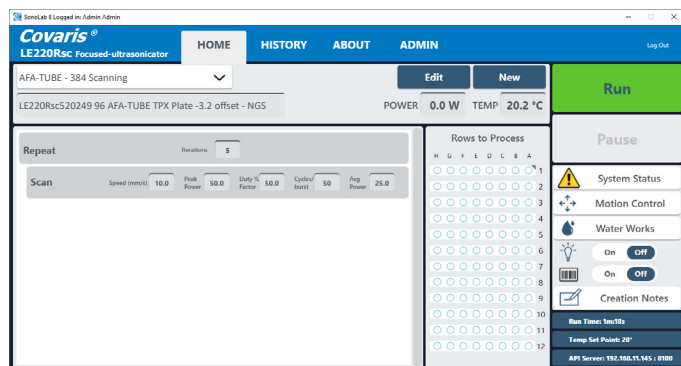
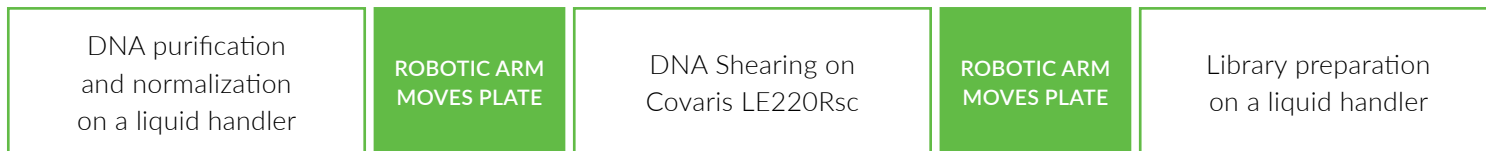
Supported Applications:

- DNA/Chromatin shearing
- Cell Lysis: mammalian, bacterial, yeast
- Biomolecule extraction: FFPE, tissue, and whole blood
- Sample processing: bead mixing
- Compound screening
- Hit validation
- Target ID & validation



Fully Automated NGS Library Preparation Workflow

The LE220Rsc Focused-ultrasonicator aids in the movement of samples through numerous steps in a workflow on multiple instruments without human intervention. Processing time for a 96 and 384 plate ranges from 5 to 16 minutes, depending on desired fragment size.



API Integration

The Covaris API integration toolkit contains everything needed to write a driver for SonoLab 8.4.

This includes:

- Emulation user interface showing all the remote commands needed to integrate
- Example code for scripting each command
- Cut and paste capability for ease of implementation
- Simulation interface for testing

Extract HMW DNA from Microbial Samples

Reproducible and robust data for cell lysis and HMW DNA extraction from difficult-to-lyse organisms including yeast and bacteria. (Figure 1 and 2)

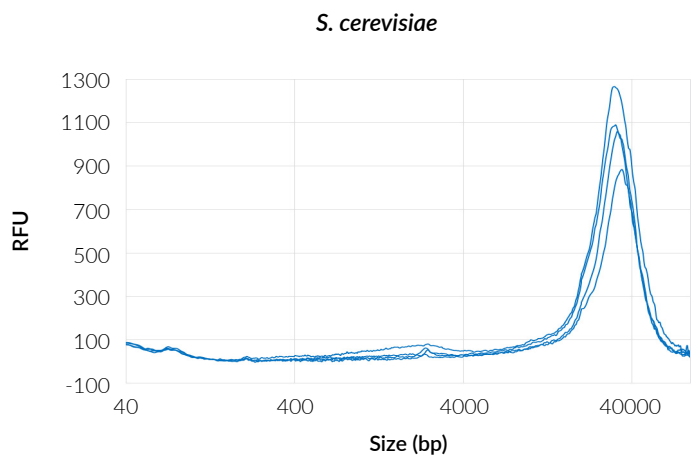


Figure 1. Superposition of electropherograms (AATI - Fragment Analyzer DNF-492-33 - SS Large Fragment) showing an extremely narrow DNA fragment distribution directly extracted from a primary *S. cerevisiae* (~ 5×10^7 cells, buffer volume = 30 μ L) sample without purification. In scanning mode, processing time less than 15 minutes for 96 samples.

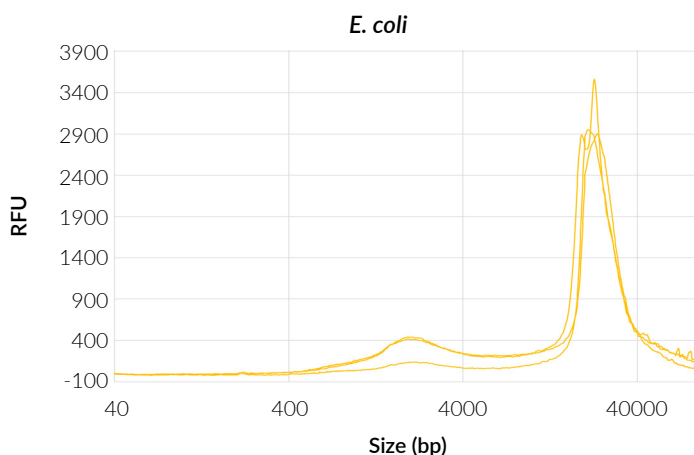


Figure 2. Superposition of electropherograms (AATI - Fragment Analyzer DNF-492-33 - SS Large Fragment) showing an extremely narrow DNA fragment distribution directly extracted from a primary *E. coli* (~ 4×10^9 cells, buffer volume = 30 μ L) sample without purification. In scanning mode, processing time less than 1 minute for 96 samples.

Product Specifications

In addition to scanning protocols, LE220Rsc is compatible with existing LE220, LE220-plus, and LE220R-plus protocols and consumables

Part Number	500652
Treatment Power	2.5 to 500 Watts peak incident power, 0.1 to 250 Watts average incident power
Dimensions	61 cm (width), 90 cm (depth), and 48 cm (height)
Power Requirements	100 to 240 VAC 500VA, 50 to 60 Hz
Operating Environment	Ambient temperature: 19 to 25 °C (66 to 77 °F) Relative humidity: 30 to 70%
Operating Temperature	5 to 40 °C
Regulatory Labeling	CE, ETL Mark (for Product Safety), WEEE
Operating System	Includes: Notebook computer interface via USB with Microsoft Windows and Covaris SonoLab™ 8 Operating, Software installed
Chiller	ultraCUBE and WCS 2.0 required
Sample Volumes (dependent on protocol)	<ul style="list-style-type: none"> • NGS from 5 to 320 μL • truXTRAC® FFPE = LCM 5 to 20 micron slides, up to 80 micron slices, and 1.2 mm cores, • truXTRAC cfDNA = up to 4 ml plasma • truXTRAC DBS (dried blood spots) = up to seven 3 mm punches • truCHIP® (chromatin) = up to 1 mL for mammalian cells • truCOLLECT™ = up to 35 μL fresh whole blood
Recommended Batch Size	8 to 1536 samples
Covaris-qualified Consumables	<ul style="list-style-type: none"> • Individual microTUBES; 8 microTUBE strips (rack required); 96 microTUBE plate • miniTUBES • milliTUBES • 96 AFA-TUBE TPX Plate™ (with RFID) • 384 AFA-TUBE Plate (with RFID) - In development • 1536 AFA-TUBE Plate (with RFID) - In development
Integration with Lab Automation	Yes: SonoLab 8 API

Ordering Information

Part Number	Product Name	Description
500652	LE220Rsc Focused-ultrasonicator	High-performance, robotic AFA Focused-ultrasonicator with both scanning and indexing sample processing modes for SBS plates. The system comes with a dedicated notebook computer with SonoLab software, ultraCUBE water chiller, and water conditioning module.