



## LE220

- **Format independent - tube, microplate sample preparation**
- **Multi-sample parallel processing**
- **High throughput**
- **High Recovery**
- **High Reproducibility**
- **Superior Technology**
  - Isothermal processing eliminates heat induced molecular changes
  - Non-contact, closed vessels ensure contamination free preparation
  - Focused acoustic energy provides controlled sample preparation across a wide range of applications
- **Broad Capabilities**
  - Disruption
  - Extraction
  - Dissolution

## High Throughput nucleic acid fragmentation for High Throughput next-gen sequencing applications

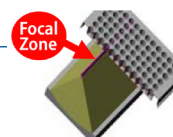
**The LE220 brings the proven Covaris AFA technology in a parallel sample processing format for DNA fragmentation**

### Application

The LE220 is specifically designed for next-gen nucleic acid sequencing operations requiring a Covaris AFA solution in a higher throughput format. With performance characteristics matching Covaris serial processing instruments (S-series and E-series), the LE220 reproducibly shears DNA to desired lengths, in a multi-sample parallel-processing mode. For example, in a 96 well microplate or tube array, a row of 8 samples is processed simultaneously by the line transducer in the LE220. By indexing across all 12 rows, the 96 samples are actually processed 8X faster than with a single-sample instrument. The LE220 can process a wide variety of sample formats (including 24, 48, 96, 384 and beyond) an entire row at a time.

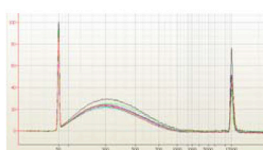
### Technology

The LE220 utilizes proven industry-standard Covaris Adaptive Focused Acoustic® (AFA®) technology to concurrently shear multiple DNA samples. The Covaris non-contact process focuses high frequency acoustic energy into a small, well defined zone within the sample vessel to create rapid and very complete sample processing. Covaris AFA technology eliminates operator induced variation, improves recoveries, increases efficiency and provides reproducible standardized results. The Advanced Acoustics of the LE220 utilizes a line-shaped focal zone to expand the effective acoustic field across an entire row or rows of samples in a microplate. This enables the LE220 to process rows of samples at a time, significantly reducing total AFA processing times.

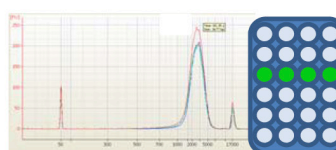
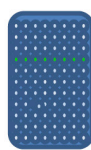


### Performance

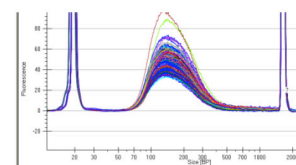
The unique Covaris line shaped acoustic field enables the LE220 to provide the same industry proven DNA fragmentation performance as the S220 and E220 workstations.



**300bp protocol**  
One row –8 microTUBES



**3kb protocol**  
One row –4 miniTUBES



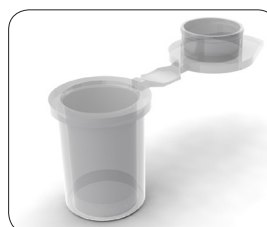
**150bp protocol**  
96 samples  
(electropherogram)

### Consumables

The LE220 is designed to use the standard Covaris DNA consumables (miniTUBE, microTUBE, and 96 microTUBE Plate).



microTUBE



miniTUBE



96 microTUBE Plate

## Instrument Models

The Covaris LE220 can be operated in stand-alone mode or may be integrated with a liquid handler or as a module on an automated platform. Please contact Covaris for details.

## Specialized Consumables

The sample vial is a key component of the AFA acoustic circuit. The vessel material, thickness, geometry and the solution in the vessel all play an important role in delivering superior sample processing results. In addition, factors such as the solution vapor pressure, temperature, viscosity and volume, can also impact acoustic dose.

Covaris has engineered a broad range of specialized consumables for key applications.

For optimal results, only use the appropriate sample vessels and protocols recommended by Covaris.

▶ Key features	▶ Benefits
<b>Multi-sample format</b>	Designed specifically for High Throughput DNA Fragmentation for sample volumes $\leq 200 \mu\text{l}$ .
<b>Higher throughput</b>	Up to 8X higher throughput for targeted applications in a 96 sample format. Capable of 384 sample density and beyond.
<b>Same proven AFA Technology</b>	Highest quality performance, reproducibility, and reliability. Higher recoveries, isothermal, non-contact, controlled energy delivery, random fragmentation.
<b>Compatible platform design</b>	Protocols are easily developed for the LE220.
<b>Scalable protocols</b>	Process entire rows of samples simultaneously, ensures rapid and consistent sample prep regardless of sample array format.
▶ Product Specifications	
<b>Dimensions</b>	24 W x 30 D x 19 H (61 cm x 76 cm x 48 cm)
<b>Product Specifications</b>	Weight approximately 110 lbs (50 Kg)
<b>Operating Environment</b>	Ambient temperature: 19° C to 25° C (66° F to 77° F) Relative humidity: 30% to 70%
<b>Power Requirements</b>	100-240 V, ~50-60 Hz, 500 VAC maximum
<b>Regulatory Labeling</b>	CE and ETL Mark
<b>Product Safety</b>	Complies with Low Voltage Directive 2006/95/EC. Tested to IEC/EN/UL/CSA 61010-1:2004
<b>EMC</b>	Complies with Class A standards for EU Directive 2004/108/EC, FCC 47CFR 15B, and ICES 003.
<b>RoHS</b>	Exempt under Category 9 for EU Directive 2002/95/EC
<b>Water Bath</b>	Distilled or de-ionized water only
<b>System Control</b>	Notebook computer interface via USB, operating Microsoft Windows XP SP3 or 7 Professional, with Covaris SonoLAB control software installed. Computer may be supplied by Covaris (US only) or the user.
<b>Accessories</b>	Chiller/heater re-circulating system may be supplied by Covaris (US only) or the user. Covaris Water Conditioning System (WCS) is recommended to maintain water purity in higher throughput applications.

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