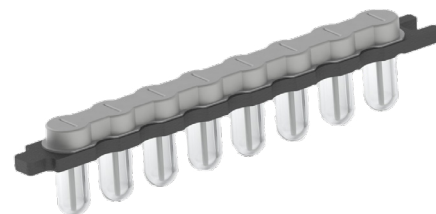


# Product Insert: 8 microTUBE Strip

## Introduction

The 8 microTUBE Strip ([PN 520053](#)) is a ready-to-use sample processing consumable optimized for use with Covaris Adaptive Focused Acoustics® (AFA®). Each strip contains 8 microTUBEs and allows great flexibility when processing samples in varying batch sizes. Each tube contains an AFA fiber that improves reproducibility, promotes an isothermal process, reduces fragmentation times, and allows small sample volumes to be processed.



The strips are manufactured with an easy-to-pierce, pre-slit foil seal that keeps the AFA fibers in place. This product contains the required foil seals to reseal the 8 microTUBE Strip after sample addition.

The 8 microTUBE strip is compatible with ME220, E- and L-Series Covaris instruments and requires the use of an instrument specific Rack. DNA shearing protocols with the 8 microTUBE Strip are also instrument specific. It is recommended to use 130 µl sample volume for shearing. Do not store sheared samples in the microTUBEs.

**NOTE:** Covaris recognizes that the 8 microTUBE Strip (PN 520053) may be included in other manufacturer's workflows using 50 to 52 µl sample volumes. We recommend using the 8 microTUBE-50 AFA Fiber Strip V2 product line for volumes of 52.5 to 57.5 µl.

## Ordering Information

- 8 microTUBE Strip (12) (contains Sealing Foils) ([PN 520053](#))
- 8 microTUBE Strip (120) (contains Sealing Foils) ([PN 520109](#))
- 8 microTUBE Strip Sealing Foil (12) ([PN 520108](#))
- 8 microTUBE Strip Prep Station ([PN 500327](#))

## DNA Shearing Protocols

- Quick Guide: DNA Shearing with S2 and E210 ([https://covaris.com/wp/wp-content/uploads/resources\\_pdf/pn\\_010158.pdf](https://covaris.com/wp/wp-content/uploads/resources_pdf/pn_010158.pdf))
  - Covaris no longer supports the S2 and E210 as these instruments are obsolete.
- Quick Guide: DNA Shearing with ME220 ([https://covaris.com/wp/wp-content/uploads/resources\\_pdf/pn\\_010349.pdf](https://covaris.com/wp/wp-content/uploads/resources_pdf/pn_010349.pdf))
- Quick Guide: DNA Shearing with E220 ([https://covaris.com/wp/wp-content/uploads/resources\\_pdf/pn\\_010308.pdf](https://covaris.com/wp/wp-content/uploads/resources_pdf/pn_010308.pdf))
- Quick Guide: DNA Shearing with LE220 ([https://covaris.com/wp/wp-content/uploads/resources\\_pdf/pn\\_010156.pdf](https://covaris.com/wp/wp-content/uploads/resources_pdf/pn_010156.pdf))
- Quick Guide: DNA Shearing with LE220-plus/R-plus/Rsc ([https://covaris.com/wp/wp-content/uploads/2020/06/pn\\_010433.pdf](https://covaris.com/wp/wp-content/uploads/2020/06/pn_010433.pdf))

## Operating Limits and Conditions

Temperature (water bath)	4 °C minimum; 25 °C maximum
Recommended Sample Volume	130 ul +/- 5ul
Centrifuge	180 RCF
Storage	Room temperature (15 °C to 30 °C)

**CAUTION:** All Covaris microTUBEs must operate within energy constraints. The power maximum levels are guides and should not be exceeded. Operating outside of these limits or limits published in Covaris protocols may compromise the integrity of the microTUBE.

### ME220

Peak Power	75 W maximum
Duty Factor	25% maximum
Rack	500514 Snap-Cap/Crimp-Cap/8 microTUBE Strip V1 Rack
Waveguide	500526 ME220 Waveguide 8 Place
Rack Definition	8 microTUBE-130 Strip V1 PN 520053

### E-Series

Peak Incident Power (E220)	175 W maximum (Intensity 5 for E210)
Duty Factor	10% maximum
Intensifier	500141 required, installed on transducer (See Appendix A for details)
Water level (RUN scale)	Level 6
E220 Rack	500191 Rack 12 Place 8 microTUBE Strip
E220 Plate Definition	E220_500191 Rack 12 Place 8 microTUBE Strip -6mm offset
E220evolution Rack	500430 Rack E220e 8 microTUBE Strip
E220evolution Plate Definition	500430 E220e 8 microTUBE Strip -6mm offset

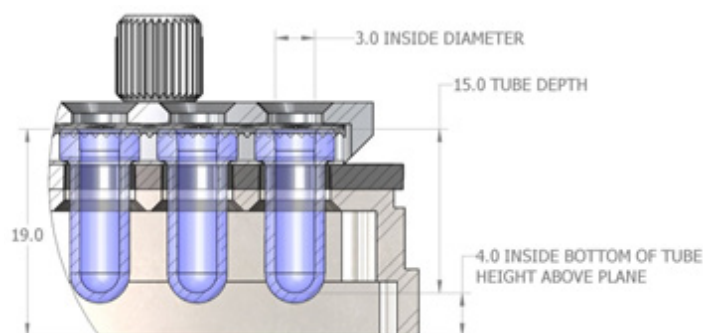
### LE-Series

Peak Incident Power (PIP)	450 W maximum
Duty Factor	30% maximum
LE220 Water level (RUN scale)	Level 6
LE220 Plate Definition	500191 Rack 12 Place 8 microTUBE Strip
L-series Rack	LE220_500191 Rack 12 Place 8 microTUBE Strip -4mm offset
LE220Rsc-plus	LE220plus_500191 Rack 12 Place 8 microTUBE Strip -4mm offset
LE220-plus/R-plus Plate Definition	LE220plus_500191 Rack 12 Place 8 microTUBE Strip -4mm offset

**NOTE:** If the plate definition is not present on the system, contact Covaris Technical Support (TechSupport@covaris.com) with the system serial number.

## 500191 Nominal Rack Dimensions (E220 and LE-series)

- Overall Rack Height (top of tubes) 19.0 mm above mounting plane
- Tube center-to-center spacing 9.0 mm (SBS standard pattern)
- Tube depth 15.0 mm (bottom is 4.0 mm above mounting plane)
- Interior clearance diameter 3.0 mm (maximum tip diameter 15 mm from end )



## Recommended Pipette Tips

To avoid binding against the tube interior when fully inserted into the microTUBE, use pipette tips that maintain a diameter no greater than 3 mm within 15 mm of their dispensing end.

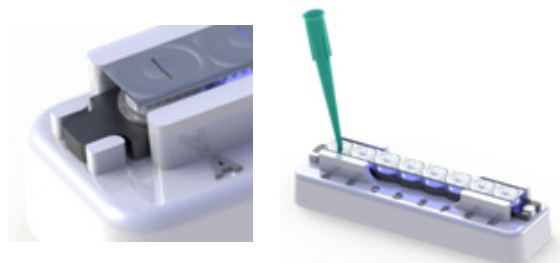
**NOTE:** Many robotic systems use proprietary tips so this diameter should be verified prior to use.

Please refer to the following documents for pipette recommendations.

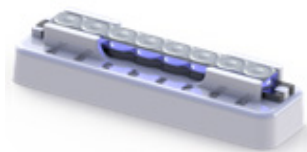
- Automated NGS Sample Preparation Workflows: Combining the Agilent Bravo Liquid Handling Platform with Covaris Focused-Ultrasonicators for Complete Automation of SureSelect Workflows: ([www.agilent.com/cs/library/whitepaper/public/whitepaper-automated-ngs-sample-preparation-bravo-covaris-5994-0130en-agilent.pdf](http://www.agilent.com/cs/library/whitepaper/public/whitepaper-automated-ngs-sample-preparation-bravo-covaris-5994-0130en-agilent.pdf))
- Pipetting Best Practices for Covaris 96 microTUBE Plate and 8 microTUBE Strip in Automated Liquid Handlers: ([covaris.com/wp-content/uploads/M020085\\_RevA\\_PipettingBestPractices.pdf](http://covaris.com/wp-content/uploads/M020085_RevA_PipettingBestPractices.pdf))

## Recommended Sequence for Use

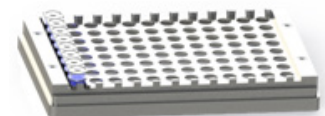
1. Pierce the Aluminum Seal and Load the microTUBE
  - a. Load the 8 microTUBE Strip into the prep station, oriented so the single tab is at the A position and the split tab is at the H position.
  - b. Do not remove the aluminum seal from the strip.
  - c. Prior to aspirating sample into the pipette tip, press the tips through the aluminum seal, fully piercing the foil by going to the bottom of the tube. This will allow air to flow out of the tube during filling.
  - d. **Fill the tubes:** Aspirate sample and dispense into the open tubes. Since the recommended sample and tube volume are nearly identical, you will need to take care that the pipette tip does not displace the sample as it is loaded. Extract the tip as the sample is dispensed to avoid fluid displacement and bubble formation.



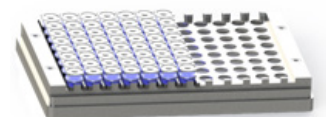
2. Re-seal the 8 microTUBE strip for processing: Remove the backing from a spare aluminum seal and carefully align it over the 8 microTUBE Strip. Using a sealing paddle or a roller (or your fingers), thoroughly press the new seal over the pierced seal, verifying that the seal is adhered to the top of each tube.



3. Load the 8 microTUBE Strip in the rack. Note that the strip is keyed to insert one way (A1 position is tabbed and H1 position is notched). Orient the strip to fit between the locating features in the rack.



4. Repeat step 1 to 3 for each 8 microTUBE Strip and fill up the rack with the desired number of 8 microTUBE Strips.



5. Place the top part of the rack in position.



6. Process your samples. Be sure to orient the A1 position of the first strip in the Rack with the A1 position of the Focused-ultrasonicator sample holder.

7. Sample Aspiration. After processing, the samples are ready to be aspirated. Sample should be aspirated as soon as is practical after treatment. We recommend pipetting directly through the rack cover.

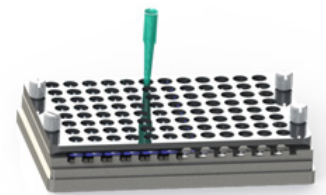
a. Since the tubes are full, air must also be allowed to enter the tube during sample withdrawal. Carefully pierce the foil and aspirate as you lower the tip into the tube, maintaining contact with the fluid to avoid aspirating air. You may have to raise the tip once or twice during aspiration to allow the tube to vent. Due to the sample volume required for optimal processing, care must be taken in both the loading and in the aspirating methods to ensure the pipette tip does not displace the sample in the tube.

b. The 8 microTUBE Strips, when placed in the rack, are compatible with automation, allowing multi-pipette heads to simultaneously pierce the seal. In automated liquid handling systems, friction between the 96 pipettes and foil may cause the rack to lift off the deck as pipettes are raised. A hold-down clamp for SBS plates is recommended.

c. For hand multi-pipetting, angle the pipettor slightly to pierce the foils sequentially, but not all at the same time.

d. Do not use the 8 microTUBE Strips for long term storage.

e. If necessary, centrifugation is permitted (up to 180 g (RCF)). Do not stack racks in centrifuge.



## Revision History

Document Part #	Revision	Date	Description of change
010167	F	2/2020	User Manual is now Product Insert. Power limits for the 8 microTUBE part numbers; Add Introduction; Update document template.
010167	G	10/2020	Update hyperlinks

## Appendix A: Removing or Installing the Intensifier (Covaris PN 500141) from a Covaris E System

The 500141 Intensifier is a small inverted stainless steel cone centered over the E Series transducer by four stainless wires. The wires are held in place by a black plastic ring pressed into the transducer well.

If an AFA protocol requires “no Intensifier”, please remove the Intensifier, using the following steps:

1. Empty the water bath. Start the instrument and start the SonoLab™ software.
2. Wait for the homing sequence to complete (the transducer will be lowered with the rack holder at the home position, allowing easy access to the Intensifier).
3. Grasp opposite sides of plastic ring and gently pull the entire assembly out of the transducer well. Do not pull on the steel cone or the wires. The ring is a friction fit in the well – no hardware is used to hold it in place.



The 500141 Intensifier (left) shown installed in the E-Series transducer well and (right) removed. Note the “UP” marking at the center of the Intensifier.

If a protocol requires the Intensifier to be present, simply reverse this process:

4. Align the black plastic ring with the perimeter of the transducer well. Note that the flat side of the center cone (marked UP) should be facing up (away from the transducer).
5. Gently press each section of the ring into the well until the ring is seated uniformly in contact with the transducer, with approximately 2 mm of the ring evenly exposed above the transducer assembly. Do not press on the cone or wires. The rotation of the ring relative to the transducer assembly is not important.
6. Refill the tank. Degas and chill the water before proceeding.

**Technical Support** – Ongoing assistance with the operation or application of the equipment and/or troubleshooting is provided via:

- Telephone
  - United States: Tel: +1 781.932.3959 during the hours of 9:00 a.m. to 5:00 p.m., Monday through Friday, Eastern Standard Time (EST), Greenwich Mean Time (GMT-05:00)
  - Europe: Tel: 44 (0) 845 872 0100, during the hours of 9:00 a.m. to 5:00 p.m., Monday through Friday, Greenwich Mean Time
- E-mail queries to [techsupport@covaris.com](mailto:techsupport@covaris.com) or [applicationsupport@covaris.com](mailto:applicationsupport@covaris.com)