

# PRODUCT INSERT



## TITLE: Covaris 96 microTUBE™ Plates

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### Operating Limits and Conditions:

Temperature (bath)	4°C min – 25°C max
Peak Incident Power	200 (E220) or 500 <sup>1</sup> (LE220) Watts maximum
Volume	96 microTUBE Plate: 130 µl maximum 96 microTUBE-50 Plate: 55 µl maximum
Water level (FILL/RUN)	E-Series: Level 6 for microTUBE Level 0 for microTUBE-50 LE220: Level 6 for microTUBE Level -2 for microTUBE-50
Centrifuge	180 RCF maximum



<sup>(1)</sup> As the Covaris LE220 processes multiple samples at a time, its PIP is distributed across microTUBEs and the power received by an individual microTUBE stays within the 200 W limit.

### Ordering Information:

Name	Description	Part Number
96 microTUBE Plate	96 microTUBE plate with AFA Fibers in a single use, pre-pierced seal plate, pre-assembled, ready to use	520078
96 microTUBE Plate (10)	Ten 96 microTUBE plates	520069
96 microTUBE AFA Fiber Plate Thin Foil	96 microTUBE plate with AFA Fibers in a single use, pre-pierced seal plate, pre-assembled, ready to use thin foil version for automation	520230
96 microTUBE AFA Fiber Plate Thin Foil (10)	Ten 96 microTUBE Thin Foil plates	520231
96 microTUBE-50 AFA Fiber Plate	96 microTUBE-50 plate with AFA Fibers in a single use, pre-pierced seal plate, pre-assembled, ready to use	520168
96 microTUBE-50 AFA Fiber Plate (10)	Ten 96 microTUBE-50 plates	520169
96 microTUBE-50 AFA Fiber Plate Thin Foil	96 microTUBE plate with AFA Fibers in a single use, pre-pierced seal plate, pre-assembled, ready to use thin foil version for automation	520232
96 microTUBE-50 AFA Fiber Plate Thin Foil (10)	Ten 96 microTUBE-50 Thin Foil plates	520233
Rack-XT 96 microTUBE Plate	For chromatin shearing applications in the LE220	500329

Product Name Part Numbers	96 microTUBE Plate 520078 and 520230 (Thin Foil)	96 microTUBE-50 AFA Fiber Plate 520168 and 520232 (Thin Foil)
<b>Compatible volume</b>	130 µl	55 µl
<b>E220: Plate definitions</b>	"E220_520078 96 microTUBE Plate - 6mm offset.plt" "E220_520230 96 microTUBE Plate Thin Foil -6mm offset"	"E220_520168 96 microTUBE-50 Plate - 10.5mm offset" "E220_520232 96 microTUBE-50 Plate Thin Foil -10.5mm offset"
<b>E220: Intensifier PN 500141</b>	Yes	Yes
<b>LE220 Plate definitions</b>	"LE220_520078 96 microTUBE Plate - 4mm offset.plt" "LE220_520230 96 microTUBE Plate Thin Foil -4mm offset"	"LE220_520168 96 microTUBE-50 Plate - 12mm offset" "LE220_520232 96 microTUBE-50 Plate Thin Foil -12mm offset"

**CAUTION:** Use of these products requires a unique Well Plate Definition for each instrument. If they aren't available in SonoLab, please contact customer service with your instrument serial number [TechSupport@covaris.com](mailto:TechSupport@covaris.com)

## Notes:

- Complies with the ANSI/SBS-4 standard for 96 well microplates
- Designed for use with automated 1, 8, and 96 channel pipettors
- The microTUBE plate is not recommended for sample storage
- Recommended instructions are subject to change without notice

## Revision History:

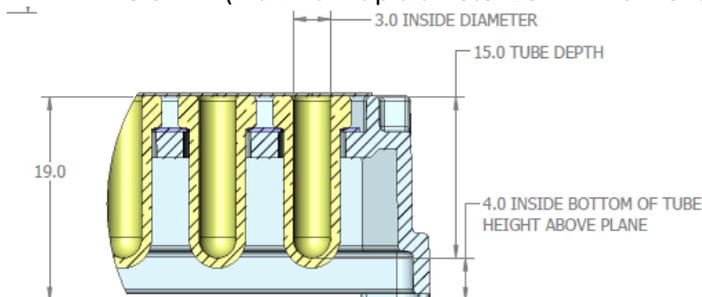
Part Number	Revision	Date	Description of change
010112	L	8/16	Addition of 96 microTUBE-50 AFA Fiber Plate to Covaris E-series
010112	M	1/17	Addition of 96 microTUBE AFA Fiber Plate Thin Foil and 96 microTUBE-50 AFA Fiber Plate Thin Foil
010112	N	8/17	Add the names of the well plates definition for 520230 & 520232.

## In This Package:

- Ready-to-use 96 microTUBE plate with AFA Fibers
- One aluminum-film seal
- Desiccant pouch

## Nominal Plate Dimensions:

Overall Plate Height (top of tubes)	19.0 mm above mounting plane
Tube center-to-center spacing	9.0 mm (SBS standard pattern)
Tube depth:	
96 microTUBE Plate	15.0 mm (bottom is 4.0 mm above mounting plane)
96 microTUBE-50 Plate	7.0 mm (bottom is 12.0 mm above mounting plane)
Interior clearance diameter	3.0 mm (maximum tip diameter 15 mm from end)



**NOTE:** This diagram depicts the 96 microTUBE Plate with 130  $\mu$ l volume tubes.

**NOTE:** Store the plates in a cool, dry place before use.

## 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. A 200  $\mu$ l tip such as Axygen<sup>®</sup> TR-222CL-STK (VWR 22234-076), or equivalent, is recommended.

Many robotic systems use proprietary tips, so this diameter should be verified prior to use.

## Instructions for Use:

**CAUTION: REMOVE THE SHRINK FILM AND DESICCANT PACK PRIOR TO USE**

The microTUBE plate is a ready-to-use sample processing device. The specially-designed glass tubes are optimized for use with Covaris Adaptive Focused Acoustics® (AFA™). Each tube contains an AFA Fiber that improves precision, reduces fragmenting times, and allows small sample volumes to be processed.

The plate is manufactured with an easy-to-pierce, pre-slit aluminum seal that keeps the AFA Fiber in place.

**CAUTION: DO NOT REMOVE THIS ALUMINUM SEAL FROM THE PLATE**

In order to ensure proper sample processing, the recommended sample volumes should be used. A narrow 200 µl tip is recommended. If the 200 µl tip diameter is too large for the 3 millimeter interior tube diameter, 100 µl tips may be used by dispensing and aspirating twice for volume larger than 100 µl.

The plate is designed for automation, allowing multi-pipette heads to simultaneously pierce the seals. However, the plate may also be used with manual pipettes. 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.

**CAUTION: In automated liquid handling systems, friction between the 96 pipettes and foil may cause the plate to lift off the deck as pipettes are raised. A hold-down clamp for SBS plates is recommended.**

**For use with automated liquid handling systems, we recommend to use the Thin Foil versions (PN 520230 and 520232)**

## Recommended Sequence for Automated Use:

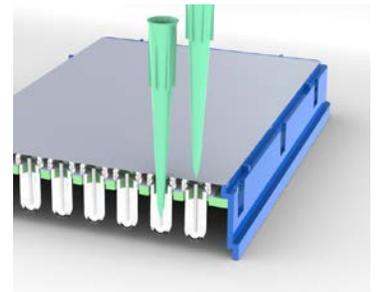
### 1. Pierce the aluminum seal:

Load pipette tips and, prior to aspirating sample, 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.

**CAUTION: To prevent the AFA Fiber from falling out, do not tip the plate once the seal has been pierced.**

### 2. 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. To avoid fluid displacement and bubble formation either, 1) extract the tip as the sample is dispensed, or 2) dispense slowly with the tip located just below the top of the tube.



### 3. Re-Seal the plate for processing:

Remove the backing from the spare aluminum seal and carefully align it over the plate. 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. The plate is now ready to be processed in your Covaris instrument.

### 4. Sample Aspiration:

After processing, the samples are ready to be aspirated. Sample should be aspirated as soon as is practical after treatment. Do not use the microTUBE plate for long term storage. Since the tubes are full, be careful not to displace the sample by putting the tip directly to the bottom of the plate. 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.

### 5. Centrifugation:

If necessary, centrifugation is permitted (up to 180g (RCF)). This is about 1000 RPM in a benchtop centrifuge with a swinging bucket rotor. DO NOT STACK PLATES IN CENTRIFUGE.

## Removing or Installing the Intensifier (Covaris PN 500141) from an E-Series 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 by in 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 E-Series and start the SonoLab software.
2. Wait for the homing sequence to complete (the transducer will be lowered with the rack holder at its 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 System 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:

1. 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).
2. 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.
3. Refill the tank. Degas and chill the water before proceeding.

### Technical Assistance

- By telephone (+1 781 932 3959) during the hours of 9:00am to 5:00pm, Monday through Friday, United States Eastern Standard Time (EST) or Greenwich Mean Time (GMT) minus 05:00 hours
- By e-mail at [techsupport@covaris.com](mailto:techsupport@covaris.com)