

USER MANUAL: 8 microTUBE Strip

Introduction

The 8 microTUBE Strip is a ready-to-use sample processing device optimized for use with Covaris Adaptive Focused Acoustics™ (AFA™). Each strip contains 8 microTUBE 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 fragmenting times, and allows small sample volumes to be processed.

The strips are manufactured with an easy-to-pierce, pre-slit aluminum seal that keeps the AFA fibers in place.

The 8 microTUBE strip is compatible with E and L-Series Covaris instruments and requires the use of the purpose-designed Rack (PN 500191). DNA shearing with the microTUBE Strip employs the same protocols used with other microTUBE consumable products.

DNA shearing protocols

Quick Guide: DNA Shearing with S220 and E220 www.covarisinc.com/wp-content/uploads/pn_010308.pdf

Quick Guide: DNA Shearing with S2 and E210 www.covarisinc.com/wp-content/uploads/pn_010158.pdf

Quick Guide: DNA Shearing with LE220 www.covarisinc.com/wp-content/uploads/pn_010156.pdf

Supplies:

	Part Number
8 microTUBE Strip (12)	520053
8 microTUBE Strip (120)	520109
Rack 12 Place 8 microTUBE Strip	500191
8 microTUBE Strip Sealing Foil (12)	520108
8 microTUBE Strip Prep Station	500327
Intensifier: IE-DNA (required for E-series)	500141

Note: Use of this product requires the Well Plate Definition named “500191 Rack 12 Place 8 microTUBE Strip”. If this plate definition is not present on your system, contact Covaris Technical Support (TechSupport@covarisinc.com) with your system serial number. A well plate definition will be provided.

In this package:

- Ready-to-use 8 microTUBE strip (12x)
- 8 microTUBE Strip Foil seals (12x)
- Desiccant pouch

Operating Limits and Conditions

Temperature (bath)	4°C minimum 25°C maximum
Sample Volume	130 µl maximum
Centrifuge	180 RCF
Storage	Room temperature (15°C to 30°C)

E-Series

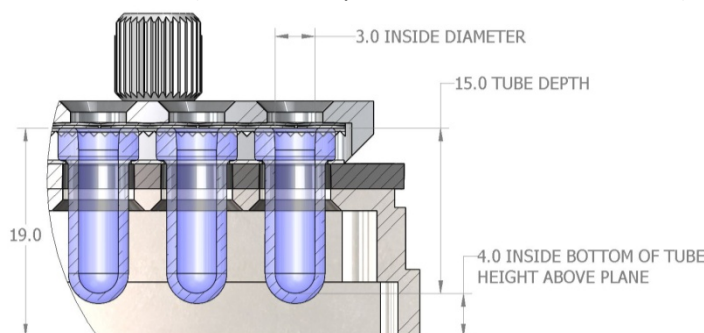
Intensity (E210)	5 maximum
Peak Incident Power (E220)	175W maximum
Duty Cycle	10% maximum
Intensifier	500141 required, installed on transducer (see page 4 for details)
Water level (RUN scale)	Level 6

LE-Series

Peak Incident Power (PIP)	450W maximum
Duty Cycle	30% maximum
Water level (RUN scale)	Level 6

Nominal Rack Dimensions

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

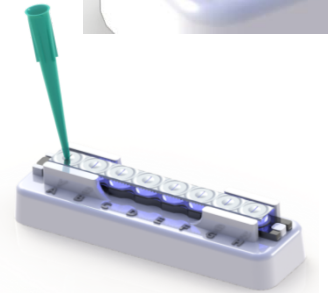
To avoid binding against the tube interior when fully inserted into the microTUBE, use pipette tips that maintain a diameter no greater than 3 mm within 15 mm of their dispensing end. A 200 µl tip such as Axygen® TR-222CL-STK (VWR 22234-076), or equivalent, is recommended. A narrow 200µl tip is recommended. If the 200µl tip diameter is too large for the 3 millimeter interior tube diameter, 100µl tips may be used by dispensing and aspirating twice.

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

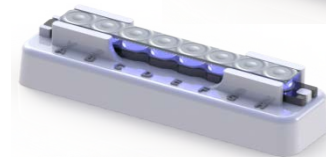
Recommended Sequence for Use:

1. Pierce the aluminum seal and load the microTUBE

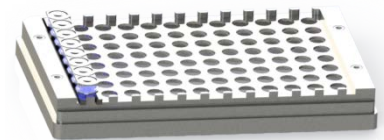
- Load the 8 microTUBE Strip into the prep station, oriented so the single tab is at the A position and the split tab is at the H position.
- Do not remove the aluminum seal from the strip.
- Prior to aspirating sample in the pipette tip, press the tips through the aluminum seal, fully piercing the foil by going to the bottom of the tube. This will allow air to flow out of the tube during filling.
- 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.



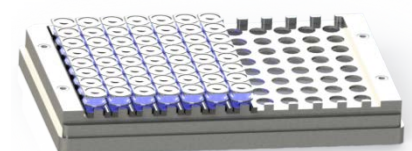
- ### 2. Re-Seal the 8 microTUBE strip for processing:
- Remove the backing from a spare aluminum seal and carefully align it over the 8 microTUBE Strip. Using a sealing paddle or a roller (or your fingers), thoroughly press the new seal over the pierced seal, verifying that the seal is adhered to the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



- ### 3. Load the 8 microTUBE Strip in the rack.
- Note that the strip is keyed to insert one way. Orient the strip to fit between the locating features in the rack.



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

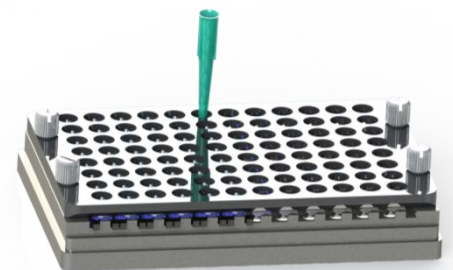


- ### 5. Place the top part of the rack in position



- ### 6. Process your samples

- ### 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.



- 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.
- 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.
- For hand multi-pipetting, angle the pipettor slightly to pierce the foils sequentially, not all at the same time.
- Do not use the 8 microTUBE Strips for long term storage.
- If necessary centrifugation is permitted (up to 180g (RCF)). Do not stack racks in centrifuge.

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 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 instrument 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 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@covarisinc.com