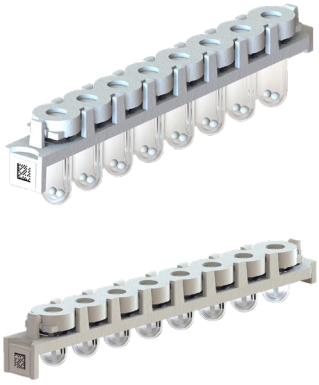
Product Insert: 8 microTUBE Strip V2

Introduction

The 8 microTUBE Strip V2 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.



The strips are manufactured with a slit septum for dispensing and aspirating samples. There is no additional cover needed to seal the tubes. The shape of the cut in the septum is the only difference between the similar products listed below. The "H slit" is cut in an "H" shape to allow for more room for the pipette tip and for greater air exchange when dispensing and aspirating samples. For DNA shearing, it is recommended to use the H slit septa for easier pipetting.

The 8 microTUBE Strip products have a 2D barcode which can be used for sample traceability.

The 8 microTUBE-15 Strip V2s and 8 microTUBE-50 Strip V2s are compatible with ME220, E- and L-Series Covaris instruments and requires the use of an instrument specific Rack. The 8 microTUBE-130 V2s are compatible with the ME220. Refer to the Covaris-certified Consumable Guide for further information (https://covaris.com/wp/wp-content/uploads/resources_pdf/M020065.pdf). The E220 and LE-series racks comply with the ANSI/SBS-4 standard for 96 well microplates. The 8 microTUBE Strip V2 is designed for use with automated 1, 8, and 96 channel pipettes.

DNA shearing protocols with the 8 microTUBE Strip V2 are also instrument specific. Do not store sheared samples in the microTUBEs. Recommended instructions are subject to change without notice.

Ordering Information

- 8 microTUBE-15 AFA Beads Strip V2 (12) (PN 520159)
- 8 microTUBE-15 AFA Beads Strip V2 Case (120) (PN 520162)
- 8 microTUBE-15 AFA Beads H Slit Strip V2 (12) (PN 520241)
- 8 microTUBE-15 AFA Beads H Slit Strip V2 Case (120) (PN 520244)
- 8 microTUBE-50 AFA Fiber Strip V2 (12) (PN 520174)
- 8 microTUBE-50 AFA Fiber Strip V2 Case (120) (PN 520175)
- 8 microTUBE-50 AFA Fiber H Slit Strip V2 (12) (PN 520240)
- 8 microTUBE-50 AFA Fiber H Slit Strip V2 Case (120) (PN 520243)
- 8 microTUBE-130 AFA Fiber Strip V2 (12) (PN 520217)
- 8 microTUBE-130 AFA Fiber H Slit Strip V2 (12) (PN 520239)
- 8 microTUBE-130 AFA Fiber H Slit Strip V2 Case (120) (PN 520242)
- Centrifuge 8 microTUBE Strip V2 Adapter (PN 500541)

DNA Shearing Protocols

- Quick Guide: DNA Shearing with ME220 (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)
- Quick Guide: DNA Shearing with LE220 (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)

Operating Limits and Conditions

Temperature (water bath)	4 °C minimum; 25 °C maximum
Recommended Sample Volume	• 8 microTUBE-15 V2: from 15 to 20 µL, ± 1 µL • 8 microTUBE-50 V2: 55 µL, ± 2.5 µL • 8 microTUBE-130 V2: 130 µL, ± 5 µL
Centrifuge	300 RCF (about 1200 RPM) in benchtop centrifuge; ThermoScientific™ mySPIN™ 12 mini centrifuge with Centrifuge 8 microTUBE Strip V2 Adapter (PN 500541)
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 microTUBEs.

ME220

Peak Power	75 W maximum
Duty Factor	25% maximum
Rack	500518 Rack 8 microTUBE Strip V2
Waveguide	500526 ME220 Waveguide 8 Place
Rack Definitions	• 8 microTUBE-15 Strip V2 PN 520159.2.rck • 8 microTUBE-15 H Slit Strip V2 PN 520241.2.rck • 8 microTUBE-50 Strip V2 PN 520175.2.rck • 8 microTUBE-50 H Slit Strip V2 PN 520240.2.rck • 8 microTUBE-130 Strip V2 PN 520217.2.rck • 8 microTUBE-130 H Slit Strip V2 PN 520239.2.rck

E-Series

Peak Incident Power	• 8 microTUBE-15: 100 W maximum • 8 microTUBE-50: 100 W maximum
Duty Factor	30% maximum
Intensifier	• 8 microTUBE-15: no intensifier (See ***Appendix A*** for details) • 8 microTUBE-50: 500141 required, installed on transducer (See ***Appendix A*** for details)
Water level (RUN scale)	• 8 microTUBE-15: Level 6 • 8 microTUBE-50: Level -2
E220 Rack	• 8 microTUBE-15: 500444 Rack 12 Place 8 microTUBE Strip V2 • 8 microTUBE-50: 500444 Rack 12 Place 8 microTUBE Strip V2
E220 Plate Definition	• 8 microTUBE-15: E220_500444 Rack 12 Place 8 microTUBE-15 Strip V2 -1.5mm offset • 8 microTUBE-50: E220_500444 Rack 12 Place 8 microTUBE-50 Strip V2 -10mm offset
E220 evolution Rack	• 8 microTUBE-15: 500437 Rack E220e 8 microTUBE Strip V2 • 8 microTUBE-50: 500437 Rack E220e 8 microTUBE Strip V2
E220 evolution Plate Definition	• 8 microTUBE-15: 500437 E220e 8 microTUBE-15 Strip V2 -1.58mm offset • 8 microTUBE-50: 500437 E220e 8 microTUBE-50 Strip V2 -10mm offset

LE-Series

Peak Incident Power (PIP)	450 W maximum
Duty Factor	30% maximum
LE220 Water level (RUN scale)	• 8 microTUBE-15: Level 4 • 8 microTUBE-50: Level -2
L-series Rack	• 8 microTUBE-15: 500445 Rack-LV 12 Place 8 microTUBE-15 V2 • 8 microTUBE-50: 500485 Rack-XT 12 Place 8 microTUBE V2
LE220 Plate Definition	• 8 microTUBE-15: LE220_500445 Rack-LV 12 Place 8 microTUBE-15 Strip V2 -4mm offset • 8 microTUBE-50: LE220_500485 Rack-XT 12 Place 8 microTUBE-50 Strip V2 -12mm offset
LE220-plus/R-plus Plate Definition	• 8 microTUBE-15: LE220plus_500445 Rack-LV 12 Place 8 microTUBE-15 Strip V2 -4mm offset • 8 microTUBE-50: LE220plus_500485 Rack-XT 12 Place 8 microTUBE-50 Strip V2 -12mm offset
LE220Rsc-plus	• 8 microTUBE-15: LE220PRSC_500445 Rack-LV 12 Place 8 microTUBE-15 Strip V2 -4mm offset • 8 microTUBE-50: LE220PRSC_500485 Rack-XT 12 Place 8 microTUBE-50 Strip V2 -12mm offset

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

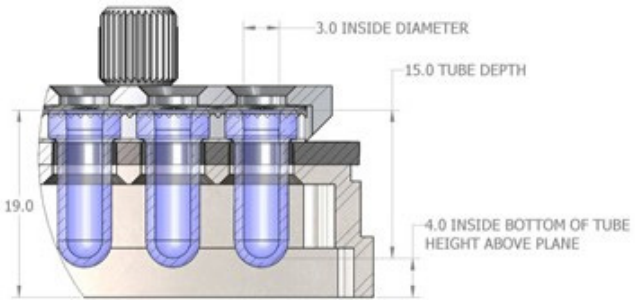
Centrifugation

8 microTUBE-15 AFA Beads Strip V2

- The 8 microTUBE-15 AFA Beads Strip V2 will fit into the Covaris Centrifuge 8 microTUBE Strip V2 Adapter (PN 500541) for the Thermo Scientific™ mySPIN™ 12 mini centrifuge. Place the strip in the adapter and spin for a minimum of 1 minute.

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)
- Interior clearance diameter 3.0 mm (maximum tip diameter 15 mm from end)
- 8 microTUBE-15 V2 and 8 microTUBE-130 V2: Tube depth 15.0 mm (bottom is 4.0 mm above mounting plane) (pictured)
- 8 microTUBE-50 V2: Tube depth 7.0 mm (bottom is 4.0 mm above mounting plane)



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 the diameter should be verified prior to use.

CAUTION: In automated liquid handling systems, friction between the pipette tips and septa may cause the Rack to lift off the deck as pipette tips are raised. A hold-down clamp for SBS plates is recommended.

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)
- Pipetting Best Practices for Covaris 96 microTUBE Plate and 8 microTUBE Strip in Automated Liquid Handlers: (covaris.com/wp-content/uploads/M020085_RevA_PippetingBestPractices.pdf)

Recommended Sequence for Automated Use

1. Load the required number of 8 microTUBE Strip V2s in processing rack. The Strips will only orient themselves in one direction on the rack. Note, the A1 position of the strip is tabbed and the H1 position has the 2D barcode.
2. ***Fill the tubes***: Aspirate sample and dispense through the split septa. If 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. ***Treat samples***: The rack is now ready to be processed in the Covaris Focused-ultrasonicator. Check the website for current protocols. (https://www.covaris.com/protocols?filter_tag=DNA%20Shearing%20Protocols)
4. ***Sample aspiration***: After processing, the samples are ready to be aspirated. Samples should be aspirated as soon as is practical after treatment. Do not use the 8 microTUBE Strip for long term storage. Be careful not to displace the sample by inserting the tip directly to the bottom of the microTUBE. Air must also be allowed to enter the tube during sample withdrawal. Carefully pierce the septum 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 300 g (RCF)). This is about 1200 RPM in a benchtop centrifuge with a swinging bucket rotor.

Revision History

Document Part #	Revision	Date	Description of change
010283	G	2/2017	Addition of 8 microTUBE-15 AFA Beads H Slit Strip V2 & 8 microTUBE-50 AFA Fiber H Slit Strip V2
010283	H	10/2018	Correct typo on page 3 and change email/website from covarisinc to covaris
010283	I	6/2020	Addition of 8 microTUBE-130 V2 part numbers; Power limits for the 8 microTUBE-50 V2 part numbers; Add Introduction; Update document template.
010283	J	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 or applicationsupport@covaris.com