

96 AFA-TUBE® PS Plate (PN 520311)

Intended Use

The product is designed for AFA-energetics® sample processing in the Covaris R230 Focused-ultrasonicator.

The 96 AFA-TUBE PS Plate must be inserted into the instrument in the correct orientation. The plate contains an RFID tag. This consumable comes pre-sealed with a pierceable heat seal. ***Once pierced, an adhesive foil seal is recommended for re-sealing the plate (one adhesive seal is provided).***

NOTE: This Consumable contains 8 free-floating beads per well. When loading samples, do not pierce foil seal with a pipette tip larger than a p200, and ensure the hole is as small as possible.



Please ensure that a Plate Weight (PN 500710) is used during AFA-treatment on the R230. This Consumable is recommended for use with a processing volume of 50 µL for 3 kb (3000 bp) size for DNA shearing applications. Please refer to the appropriate shearing guide listed below for the specific instrument in use.

AFA-energetics for this plate are delivered via scanning mode. In a scanning treatment, the sample tray moves continuously over the transducer. In this mode, treatment time is a function of the speed at which the sample tray moves. One or more columns may be treated, but the columns must be adjacent.

Covaris recommends a time course experiment to reach the desired fragment size distribution. This consumable requires optimization with support from Covaris.

Please contact applicationsupport@covaris.com for details on how to set up a method for time course experiment in scanning mode.

For current protocols, quick guides, technical notes, or application notes: <https://www.covaris.com/protocols>.

For specific help with applications involving shearing, contact applicationsupport@covaris.com.

Recommended instructions are subject to change without notice.

References and Supporting Documentation

- Quick Guide: DNA Shearing with R230 (https://www.covaris.com/wp-content/uploads/pn_010528.pdf)

Notes

- Complies with ANSI-SBS-4 standard for 96-well microplates (See **Appendix A**)
- Designed for use with 1, 8, and 12 channel pipettors

Package Contents

- One pre-sealed, ready-to-use 96 AFA-TUBE PS Plate
- One thin foil seal
- Desiccant pouch

Nominal Plate Dimensions

Overall Height (top of tube)	14.25 mm
Well center-to-center Spacing	8.99 mm (SBS standard pattern)
Well Depth	10.59 mm
Interior Clearance Diameter	6.40 mm (well opening and inside of well)

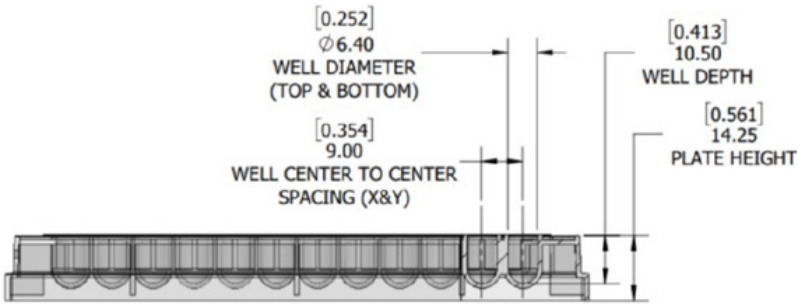


Figure 1. Plate and Well Dimensions of the 96 AFA-TUBE PS Plate (PN 520311).

See Appendix A for more details.

Operating Limits

Volume Capacity	50 µL
Water Level	Automatically adjusted by the instrument
Centrifuge	1,000 RCF; centrifuge for up to 1 minute immediately before shearing
Storage	Dry at ambient temperature (18-25°C) and out of direct sunlight



CAUTION: This Consumable contains 8 free-floating AFA beads per well. When loading samples, do not pierce foil seal with a pipette tip larger than a p200 to avoid misplacement of the AFA beads from the wells. Additionally, please run at the AFA power requirements designated on the quick guide to avoid damaging the consumable.

Relevant Accessories and Plate Definitions

Please refer to the Quick Guide for specific parameters for all applications.

R230

Sealing	Plate comes pre-sealed with a pierceable heat seal. After sample addition, use an additional adhesive or heat sealable foil
Peak Incident Power (PIP) Max	8 Watts
Average Incident Power (AIP) Max	< 10 Watts
Plate Weight	Weight is required for use on the R230. Weight AFA-TUBE PS Plate (PN 500710)
Plate Definition	"R230_520311 96 AFA-TUBE PS Plate +0.5 offset"

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

Instructions for Use

The plate is designed to be used with standard labware, compatible with automation including heating blocks, magnetic stands, etc. It can be used on liquid handling platforms using 96 multichannel heads for pipetting with no adapter necessary. The plate may also be used with manual pipettes if needed. If sample volume is at maximum, be sure to pipette slowly from the top of the well to ensure no sample displacement.

NOTE: If automation is desired, please contact Covaris Application Support (applicationsupport@covaris.com).

Recommended Sequence for User

1. Fill the Tubes:

- Pierce the foil seal with a pipette tip (< p200).
- As this Consumable contains 8 free floating beads within each well, using a smaller pipette tip to load samples avoids misplacement of beads.
- Dispense samples ~ 2–3 mm above the bottom of the well or at the bottom depending on the sample volume.

2. Seal the Plate for AFA-processing:

- Remove the backing from the thin foil seal and carefully align it over the plate. Using a sealing paddle or a roller (or your fingers), thoroughly press the seal on the plate verifying that the seal is adhered to the top.
- The plate is now ready to be processed in your Covaris Instrument.

3. Pre AFA Centrifugation:

- Centrifuge the plate after sample addition to ensure the sample is at the bottom of the well at 1,000 RCF in a benchtop centrifuge compatible with 96-well plates for up to 60 seconds. **DO NOT STACK PLATES IN CENTRIFUGE.** Visually inspect plate to verify that all liquid is at the bottom of each well before moving to Step 4

4. AFA-processing (example):

- Refer to the Quick Guide, DNA Shearing with R230 Focused-ultrasonicator <https://www.covaris.com/protocols/> or other application-specific protocol/guide.
- The Plate Weight (PN 500710) must be placed on top of the plate for stabilization during AFA-processing.
- Check that the water is filled to the top of the edge of the bottom flange after automatic water adjustment.

5. Post AFA Centrifugation:

- a. Centrifuge the plate after AFA up to 1,000 RCF for up to 20 seconds (or use the quick spin button) before removing any sample. **DO NOT STACK PLATES IN CENTRIFUGE.**

6. Downstream Sample Handling:

- a. After AFA treatment, the thin foil seal can be removed to allow for downstream processing in the 96 AFA-TUBE PS Plate.

NOTE: This consumable is **NOT** recommended for long-term storage post-shearing. For storage, please use a validated low bind consumable, such as the Eppendorf® LoBind Plate or similar.

Ordering Information

Part Name	Part Number	Part Description
96 AFA-TUBE PS Plate	520311	Specialized foil-sealed polymer vessel for processing 8–96 samples
Plate Weight	500710	Weight designed to be used on top of vessel during AFA processing
Thin Foil Seals	520235	96 microTUBE Plate Thin Foil Seals (25)

Support and Technical Assistance

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

- **Telephone:**
 - US & APAC: +1 781.932.3959, during the hours of 8:30 a.m. to 5:00 p.m. (EST), Monday through Friday
 - EU: +44 (0)845 872 0100, during the hours of 9:00 a.m. to 5:00 p.m. (GMT), Monday through Friday
- **E-mail:**
 - Service and Instrumentation: techsupport@covaris.com
 - Solutions: applicationsupport@covaris.com
 - US Customer Service: customerservice@covaris.com
 - EU/UK Customer Service: emeacustomerservice@covaris.com
 - APAC Customer Service: APACcustomerservice@covaris.com

Appendix A: Covaris 96 AFA-TUBE PS Plate Dimensions (PN 520311)

The Covaris 96 AFA-TUBE PS Plate complies with the ANSI/SBS-4 standard for 96-well microplates. The outside plate dimensions and the well positions for the 96-well plate from the ANSI SLAS 4-2004 document is captured in the figure below. The Covaris 96 AFA-TUBE PS Plate well dimensions are also listed below in mm.

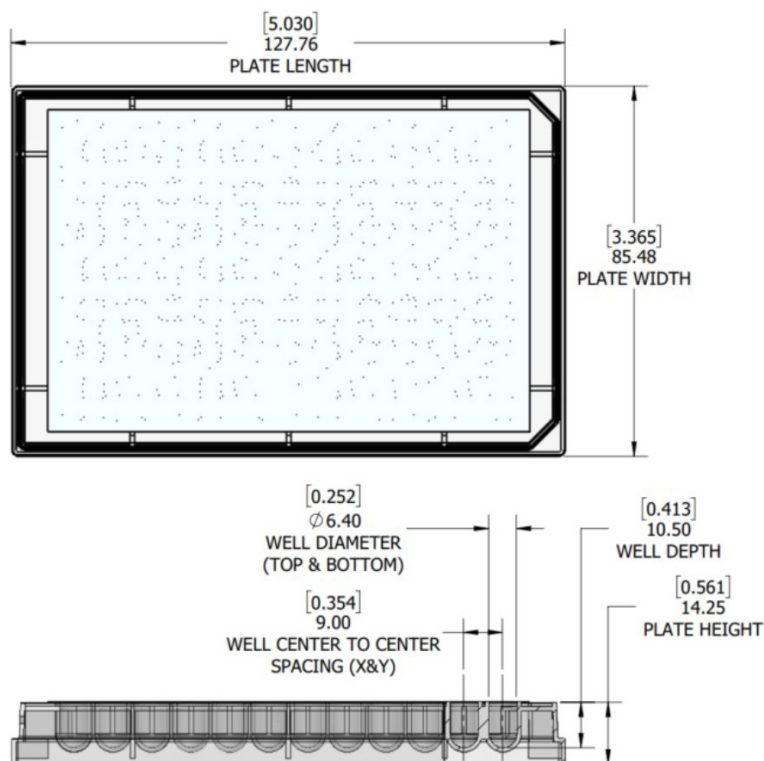


Figure 2. Plate and Well Dimensions for the 96 AFA-TUBE PS Plate ([PN 520311](#)).

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