


## Quick Guide:

### DNA Shearing with S220/E220 Focused-ultrasonicator


#### microTUBE – 130 µl sample - from 150 to 1,500 bp

Target BP (Peak)	150	200	300	400	500	800	1,000	1,500
Peak Incident Power (W)	175	175	140	140	105	105	105	140
Duty Factor	10%	10%	10%	10%	5%	5%	5%	2%
Cycles per Burst	200	200	200	200	200	200	200	200
Treatment Time (s)	430	180	80	55	80	50	40	15
Temperature (°C)	7	7	7	7	7	7	7	7
Water Level – S220	12	12	12	12	12	12	12	12
Water Level – E220	6	6	6	6	6	6	6	6
Sample volume (µl)	130	130	130	130	130	130	130	130
E220 - Intensifier (pn500141)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes




#### microTUBE – 50 µl sample - from 150 to 1,500 bp

Target BP (Peak)	150	200	300	400	500	1,000	1,500
Peak Incident Power (W)	175	175	175	175	175	175	175
Duty Factor	10%	10%	10%	5%	5%	2%	1%
Cycles per Burst	200	200	200	200	200	200	200
Treatment Time (s)	280	120	50	55	35	45	20
Temperature (°C)	7	7	7	7	7	7	7
Water Level – S220	12	12	12	12	12	12	12
Water Level – E220	6	6	6	6	6	6	6
Sample volume (µl)	50	50	50	50	50	50	50
E220 - Intensifier (pn500141)	Yes	Yes	Yes	Yes	Yes	Yes	Yes



#### Covaris AFA miniTUBE – 200 µl sample - 2,000; 3,000 and 5,000 bp

Target BP (Peak)	2,000	3,000	5,000
miniTUBE	Clear	Blue	Red
Peak Incident Power (W)	3	3	25
Duty Factor	20%	20%	20%
Cycles per Burst	1,000	1,000	1,000
Treatment Time (s)	900	600	600
Temperature (°C)	7	20	20
Water Level – S220	15	15	15
Water Level – E220	11	11	11
Sample Volume (µl)	200	200	200
E220 - Intensifier (pn500141)	No	No	No



To fragment DNA to size larger than 5 kb, Covaris offers the **g-TUBE**: a single-use device that shears genomic DNA into selected fragments sizes ranging from 6 kb to 20 kb. The only equipment needed is a compatible bench-top centrifuge.

## Supplies

<b>Covaris AFA tubes</b>	microTUBE AFA fiber Snap-Cap (25)	520045
	microTUBE AFA fiber Crimp-Cap (25)	520052
	96 microTUBE Plate (for E220) (1)	520078
	8 microTUBE Strip (for E220)(12)	520053
	miniTUBE Clear (25)	520064
	miniTUBE Blue (25)	520065
	miniTUBE Red (25)	520066
<b>Preparation stations</b>	Snap-Cap microTUBE loading and unloading station	500142
	miniTUBE loading and unloading station	500207
<b>Holder for S220</b>	microTUBE holder (single tube) compatible with Snap- and Crimp-Cap	500114
	miniTUBE holder compatible with Clear, Blue and Red miniTUBE	500206
<b>Racks for E220</b>	Rack 24 places microTUBE Snap-Cap	500111
	Rack 96 places microTUBE Crimp-Cap	500143
	Rack 12 places 8 microTUBE Strip	500191
	Rack 24 places miniTUBE	500205
<b>Intensifier</b>	IE-DNA (required for E220)	500141
<b>Centrifuge adapter</b>	Fit microTUBEs in bench top micro centrifuges	520059
<b>g-TUBE</b>	g-TUBEs (10) and prep station	520079

### Values mentioned in this Quick Guide are nominal values. The tolerances are as follow:

- Temperature +/-2°C
- Sample volume +/- 5µl
- Water Level +/- 1

### Sample preparation guidelines

- **DNA input:** from 100 ng to 5 µg purified DNA
- **Buffer:** Tris EDTA, pH 8.0
- **DNA quality:** Genomic DNA (> 10 kb). For lower quality DNA, Covaris recommends setting up a time dose response experiment for determining appropriate treatment times.

### After processing 50 µl sample, and before to transfer, we recommend centrifuging the microTUBE:

- 600 RCF / 5s for a single tube. Adapters (pn 520059) are available to fit microTUBE in bench top micro centrifuges
- 150 RCF / 30s with a 96 microTUBE plate (pn 520078) or a Rack 12 Places 8 microTUBE Strip (pn 500191)

Recommended settings are subject to change without notice.

See following link [http://www.covarisinc.com/wp-content/uploads/pn\\_400103.pdf](http://www.covarisinc.com/wp-content/uploads/pn_400103.pdf) for updates to this document.