

Sonic Mixer



The Sonic Mixer is a powder blender that uses patented acoustic fluidization and linear motor technology to provide fast, efficient and thorough mixing. Laboratory size models are available off-the-shelf. Larger sizes are under development. This new technology is ideal for mixing a variety of materials including pharmaceuticals, chemicals, foods, cosmetics, ceramics, detergents, plastics, synthetic fibers and metal powders.



2 Liter



20 Liter



200 Liter

PRODUCT HIGHLIGHTS

Sizes

- 2 and 20 liter laboratory models.
- 200 liter and larger production models.

Technology

- Acoustic fluidization creates a bubbling, high intensity mixing zone.
- Chamber shape focuses energy and produces circulation.
- Sonic power is provided by a tuned variable reluctance linear motor.

Mixing Effectiveness

- Wide range of powder sizes (<5 -750 μm) and densities.
- Excellent mixing to 2% RSD with spike levels down to 0.1%.
- Typical mix times 2:00 minutes or less.
- Chamber fill levels from less than 5% to greater than 75%.

Mixing Control

- Microcontroller based, menu driven blend intensity selection.
- Automatic blend timer.
- Linear power control.
- Customizable mix recipes.

Ease of Use Benefits

- Bladeless chamber gently mixes without damaging product.
- Efficient mixing with low heat generation.
- Secure chamber keeps powders in and contaminants out.
- Removable chambers provide easy storage, filling and emptying.
- Spare chambers for storage to minimize transfers and damage.
- Easy to clean bladeless chamber saves time and money.
- Captured gasket is easily replaced, but not easily lost.

Reliability

- Non-contact, long life, bearing-free linear motor design.
- No rotary bearings or seals to contaminate or wear-out.
- Quality CNC manufacturing for consistency.
- Continuous reliability improvement program.



Acoustic Fluidized Bed Mixing Dynamics



Mixing Intensity Control

MacroSonix

Product Specifications

	2 Liter	20 Liter	200 Liter
Fill Range	5 - 75%		
Particle Range	<5 - 750 μ m		
Electrical	120 VAC 1-Phase 15A		
Chamber Size	6" D x 8"H	14" D x 24" H	30" D x 36" H
Driver Size	14" D x 10" H	24" D x 10" H	30" W x 24" D x 24" H
Chamber Weight	2.5 lb	14 lb	30 lb
Driver Weight	35 lb	60 lb	275 lb
Sound Level (@1m)	65 dBA	70 dBA	80 dBA
Other	Noise enclosure Transport case	Noise enclosure Cart	Detachable controller for remote mounting.

FAQs

Question	Answer
How much power is used?	The 2 liter, e.g., varies linearly between 50W at level 1 up to 250W at level 15.
Does input power vary with particle size? Does input power vary with chamber fill?	Particle size and chamber fill level have little effect on the input power.
How much is the chamber moving?	Chamber (motor) movement is adjusted with intensity level from 1-15 and varies up to +/- 0.150 in.
What materials are used in the 2 liter chamber?	304 stainless, acrylic base & cylinder (for abrasion), polycarbonate flange and lid (for shock strength).
What materials are used in the 20 and 200 liter chamber?	304 stainless steel standard. 316 stainless steel upon request.
What is the operating frequency?	Standard operating frequency is about 100 Hz
Is the electrical drive waveform sinusoidal?	No, it is more complex with energy content in higher harmonics.
Can the drive waveform be customized? Can the operating frequency be changed?	Yes, a manual mode is available (with passcode) to allow input of custom drive waveforms.
Have other processes been considered?	Yes, in our laboratory. Call for more information.



**For more information, please contact
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