

## From Lab to Production

The ResonantAcoustic Mixing family of products includes machines capable of mixing a few milligrams, all the way up to 2,000 kg/hour. The technology allows for easy scale-up from research to production levels.



RAM 5 H



PharmaRAM I PharmaRAM II



LabRAM II H



RAM 5 Continuous



RAM 55 H



OmniRAM H



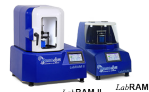
RAM 55



OmniRAM Continuous



OmniRAM



LabRAM II LabRAM I



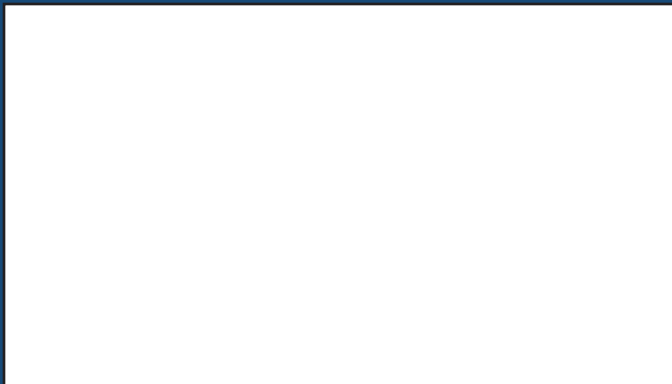
RAM 5



# ResonantAcoustic<sup>®</sup> Mixers

Novel technology that processes nearly any combination of pharmaceutical ingredients more uniformly, quicker, and safer than alternatives, even in the most difficult mixing applications.

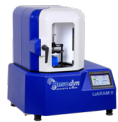
Mix, dissolve, coat, disperse, mill, sieve, and grind all in one machine.



## Loved by Customers

“The acoustic milling approach allows for the preparation of high dose nanosuspension formulations that **could not be obtained using conventional milling equipment**. This provides **direct translation** from the initial nanosuspension screen towards formulation scale-up.”

- Article from the International Journal of  
Pharmaceutics



**LabRAM II**  
1 kg



**OmniRAM**  
5 kg



**RAM5**  
36 kg

RAM scales directly from lab to production, without mix recipe adjustments. Batch and continuous configurations available.

## One Platform, Numerous Processes

Simplify processing in the lab or on the production floor—a single RAM mixer can work with almost any material.

- 1. Powders:** Mix any powders, independent of dosage amount or differing morphologies such as particle size, shape, and surface characteristics.
- 2. Liquids:** Blend any liquids to get an ultra-high-quality result ideal for the precision required in pharmaceutical development and production.
- 3. Slurries and Pastes:** Combine powders and liquids together regardless of viscosity, at incredible speed and quality.



## Uniform, Fast, Bladeless

RAM's unique acoustic processing technology makes it superior to conventional mixing equipment in many ways:



### Unmatched Uniformity

- Lower RSD than traditional equipment
- Works on the most difficult APIs
- Temperature & pressure control available



### Faster Throughput

- Mixes 10-100x faster
- Multi-step processes simplified to one
- Works with 96 well plates



### Bladeless Mixing

- Little-to-no particle degradation
- Batch process ideal for single-use vessels
- Continuous production with Clean-In-Place
- Eliminates cross-contamination