



Microfluidics™

Superior Knowledge | Superior Results

LM10
Microfluidizer™
High Shear Fluid Processor



LM10 Microfluidizer™ High Shear Fluid Processor

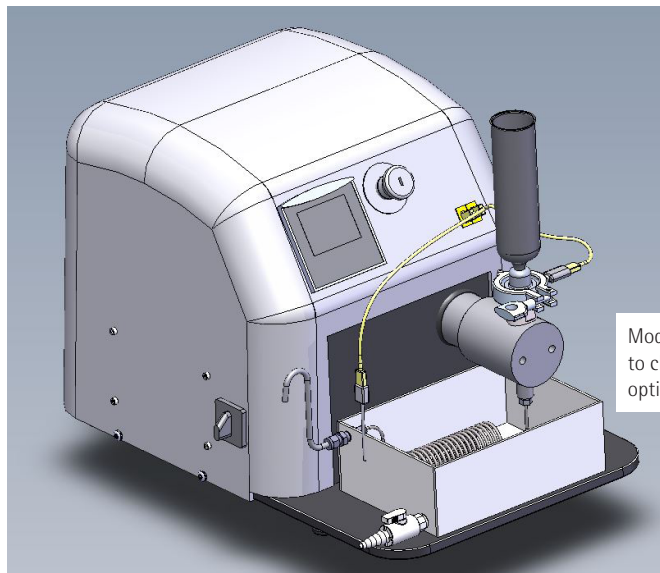
Digitally Controlled Lab Unit For Small Sample Material Processing

Microfluidizer™ technology converts fluid pressure more efficiently into shear forces, leading industry performance standards in high pressure homogenization.

A unique solution to maintaining consistent process pressure, ensures 100% of your material gets exactly the same treatment. So whether you are working with small lab samples or production volumes, the Microfluidizer™ processor is unmatched in submicron size reduction/disruption, product yield, and guaranteed process scale-up.

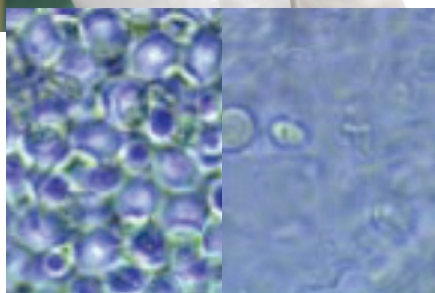
Recommended For:

- Emulsions
- Dispersions
- Liposomes
- Cell Disruption



Unique Benefits of the LM10

- Achieve unmatched size reduction/disruption performance at lower process pressure
- Limit sample temperature rise during processing
- Higher product yields after sterile filtration with tighter particle size distribution
- Save on development time in pilot/production with linear volumetric scale-up
- Enhanced repeatability with easy-to-use digital pressure control
- Improved experimental reliability with real-time temperature monitoring
- Ensure dependable process performance over time with maintenance reminder and operator alerts
- Adapt to future experimentation possibilities with field upgradable firmware
- Calibration making it possible to use a variety of compressor sizes



Before Processing

After Processing

Along with other uses, the patented Microfluidizer™ can also be used for fine particle deagglomeration.



Operating Principle

The LM10 contains an intensifier pump designed to supply the desired pressure at a constant rate to the product stream. As the pump travels through its pressure stroke, it drives the product at constant pressure through precisely defined fixed-geometry microchannels within the interaction chamber.

As a result, the product stream accelerates to high velocities, creating shear rates within the product stream that are orders of magnitude greater than any other conventional means. All of the product experiences identical processing conditions, producing the desired results, including: uniform particle and droplet size reduction (often submicron), deagglomeration and high-yield cell disruption.

A removable cooling coil and a cooling bath are incorporated into the design to promote optimal temperature control.

Standard Features

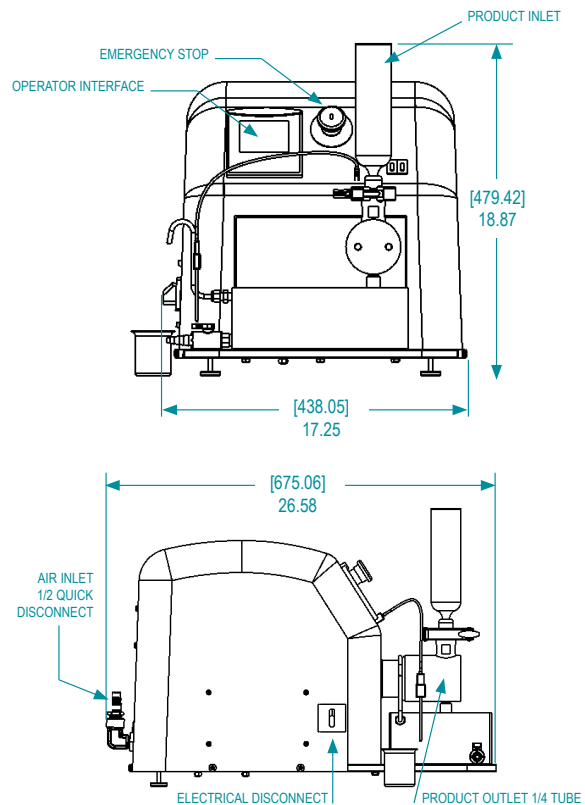
- 300 ml glass reservoir
- Ceramic interaction chamber assembly
- Cooling coil and chilled bath assembly
- Easily autoclavable
- Two modes of operation for various compressor sizes
- Calibrate the Microfluidizer processor to specific compressor

Options

- Diamond interaction chambers
- Larger capacity glass or stainless steel reservoirs
- Thermocouple
- Thermocouple at product inlet
- Process fluid recirculation assembly/kit
- Gasket materials
- Auxiliary Processor Module (APM)

Specifications

| | |
|---|--|
| Pressure Range | Up to 23,000 psi (1,546 bar) |
| Minimum Sample Size | 14 ml |
| Flowrate Range | Free Mode = 250-600 ml/min |
| | Regulated Mode = 55-100 ml/min |
| Electrical Power Requirement | 85-260VAC, 50/60Hz, 5A |
| Pump Actuator | Pneumatically Driven |
| Air Requirements for continuous operation (Delivered to Microfluidizer processor) | Free Mode = 57 scfm @ 120 psi (27 l/s @ 8.3 bar) |
| | Regulated Mode = 13 scfm @ 120 psi (6 l/s @ 8.3 bar) |
| Noise Level | <80dB TWA |
| Dimensions (W x H x D) | 19" x 17" x 27" (48cm x 43cm x 69cm) |
| Weight | 75 lbs (34 kg) |



*Dimensions Are Approximate



Technical Bulletin – Air Compressors

<https://www.microfluidicscorp.com/sites/default/files/Tech%20Bulletin%20-%20Air%20Compressors.pdf>



Microfluidics™

Microfluidics International Corporation
90 Glacier Drive, Suite 1000 • Westwood, MA 02090, USA
Tel: 617-969-5452 • 800-370-5452 • Fax: 617-965-1213
Email: mixinginfo@idexcorp.com • www.microfluidicscorp.com

Bramley Drive, Vale Park West, Evesham, Worcestershire, WR11 1JH, UK
Tel: (+44) (0) 1386 769 007 • Fax: (+44) (0) 870 1911116
Email: mixinginfo@idexcorp.com • www.microfluidicscorp.com



©2015 by Microfluidics. All rights reserved. 1/18 IH .5K