M-110P Microfluidizer® Materials Processors

M-110P Laboratory Models For Continuous High Shear Fluid Processing

Revolutionary M-110P Microfluidizer Bench-top Processor Models Recommended for:

- Production of stable nano-dispersions and nano-emulsions
- Cell Disruption (yeast, E.coli, etc.)
- Microencapsulation in polymers, liposomes and oils
- Deagglomeration

The M-110P models have been designed to reliably achieve continuous operating pressures up to 30,000 psi. Microfluidizer processors maximize the energy-per-unit fluid volume, resulting in uniform submicron particles.

Available Options

- 1 liter stainless steel open reservoir (M-110PS, M-110P-20 and M-110P-20S only)
- 400 ml stainless steel open reservoir (M-110P-20 and M-110P-20S only)
- 2 liter open reservoir
- Pressurized stainless steel feed tank (7.6 liters)
- Pressurized (2 liter) reservoir
- Seal quench system
- Sanitary flush diaphragm pressure transducer with digital readout
- Additional interaction chamber
- Auxiliary Processing Module (M-110P and M-110P-20 only)

M-110P "Plug and Play" Laboratory Models for Continuous High Shear Flow Processing

- Achieve processing pressures up to:

M-110P M-110PS	2068.9 bar (30,000 psi)
M-110P-20 M-110P-20S	1379 bar (20,000 psi)

- Produces product flow rate range of up to155 ml/min (133 ml/min CE model)
- Powered by standard 120VAC/60 Hz or 230 VAC/60 Hz (220VAC/50 Hz on CE model), single phase electrical motor
- Requires no compressed air for operation and no hydraulic cooling water
- Fits in standard laboratory chemical hood
- CE compliant version available

Utilizing Microfluidics' fixed geometry interaction chamber technology, and a ceramic (Zirconia) plunger, the M-110P is capable of processing a wide variety of fluids such as oil-in-water emulsions, solids-in-liquid suspensions, and cell disruptions, including the most difficult yeasts and plant cells, in as few as 1-2 passes. What's more, the process is repeatable and is guaranteed to scale up to pilot and/or production volumes.

Microfluidics

M-110P Specifications

The M-110P family of machines contains an on-board 1.5 kw (2 hp) electric-hydraulic module that powers a single acting intensifier pump. Process pressures may be adjusted from 345-2068 bar (5,000-30,000 psi) or 345-1379 bar (5,000-20,000 psi) to produce the desired product results.

As the reciprocating intensifier pump travels through its pressure stroke, it drives the product at constant pressure through the interaction chamber. Within the chamber are specially designed fixed-geometry micro-channels through which the product stream will accelerate to high velocities. This creates the high-shear and impact forces that bring about the desired results as the high velocity product stream impinges on itself and/or on wear-resistant surfaces.

Upon exiting the interaction chamber, the product flows through an external coiling coil which regulates the product to a desired temperature. At this point the product may be recirculated through the system for further processing or directed externally to the next step in the process.

Description	M-110P	M-110PS	M-110P-20	M-110P-20S
Pressure Range	345 – 2,068 bar (5,000 – 30,000 psi)	345 – 2,068 bar (5,000 – 30,000 psi)	345 – 1,379 bar (5,000 – 20,000 psi)	345 – 1,379 bar (5,000 – 20,000 psi)
Minimum Sample Size	50 ml	25 ml	50 ml	25 ml
Flow Rate Approximately (on water)	110 – 155 ml/min 95 – 133 ml/min – CE model	110 – 155 ml/min 95 – 133 ml/min – CE model	135 – 155 ml/min 115 – 133 ml/min – CE model	135 – 155 ml/min 115 – 133 ml/min – CE model
Product Temperature Limit	73°C (165°F)	73°C (165°F)	73°C (165°F)	73°C (165°F)
Power Requirements	60 Hz/120 VAC/20 amp 60 Hz/230VAC/10 amp 50 Hz/220 VAC/12 amp -CE	60 Hz/120 VAC/20 amp 60 Hz/230 VAC/10 amp 50 Hz/220 VAC/12 amp -CE	60 Hz/120 VAC/20 amp 60 Hz/230 VAC/10 amp 50 Hz/220 VAC/12 amp -CE	60 Hz/120 VAC/20 amp 60 Hz/230 VAC/10 amp 50 Hz/220 VAC/12 amp -CE
Dimensions W x D x H	78cm x 56cm x 48cm (31.38" x 22" x 19")	78cm x 56cm x 48cm (31.38" x 22" x 19")	78cm x 56cm x 48cm (31.38" x 22" x 19")	78cm x 56cm x 48cm (31.38" x 22" x 19")
Weight	120 kg (265 lbs)	120 kg (265 lbs)	120 kg (265 lbs)	120 kg (265 lbs)
Features				
Interaction Chamber Material	Diamond	Diamond	Ceramic	Ceramic
Plunger Material	Zirconia Ceramic	Zirconia Ceramic	Zirconia Ceramic	Zirconia Ceramic
Enclosure	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Drive Method	Electric/Hydraulic	Electric/Hydraulic	Electric/Hydraulic	Electric/Hydraulic
Product Pressure Gage	Mechanical	Mechanical	Mechanical	Mechanical
Stainless Steel Feed Reservoir	1 Liter	400 ml	Optional	Optional
200 ml Glass Feed Reservoir	Yes	Yes	Yes	Yes
Warranty	2 Years Standard M-5 plus one preventive maintenance in first two years	2 Years Standard M-5 plus one preventive maintenance in first two years	Standard 1 year M-5 Warranty	Standard 1 year M-5 Warranty

Microfluidics reserves the right to change specifications without notice.

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