M-110P Microfluidizer® Materials Processors

TB-P-7

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

Microfluidizer Bench-top Processor Models are 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

- 400 ml stainless steel open reservoir
- 1 liter stainless steel open reservoir
- 2 liter stainless steel open reservoir
- 2 liter pressurized stainless steel reservoir
- 7.6 liter pressurized stainless steel feed tank
- Manual Priming and Purging Cylinder
- Seal quench system
- Sanitary flush diaphragm pressure transducer with digital readout
- Additional interaction chamber
- Auxiliary Processing Module (M-110P and M-110P-20 only)
- Temperature sensors and displays
- IQOQ documentation and on-site execution
- FAT, SAT, on-site startup and operator training
- Preventive Maintenance Service
- Extended warranty

Model shown is subject to change depending on options selected

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

- Achieve processing pressures up to:

M-110P M-110PS	2068 bar (30,000 psi)
M-110P-20 M-110P-20S	1379 bar (20,000 psi)

- Produces product flow rate up to125 ml/min (105 ml/min on 50 Hz model)
- Powered by standard 120VAC/60 Hz, 230 VAC/60 Hz or 220VAC/50 Hz single phase electrical motor
- Fan cooled drive system
- Fits in standard laboratory chemical hood
- CE compliant

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

The M-110P family of machines contains an on-board 1.5 kw (2 hp) electric-hydraulic drive that powers a single acting intensifier pump. Process pressures may be adjusted from 138-2068 bar (2,000-30,000 psi) on the M-110P and M-110PS or 138-1379 bar (2,000-20,000 psi) on the M-110-20 and M-110-20S 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 unique fixed-geometry micro-channels through which the product stream will accelerate to high velocities. This creates high-shear and impact forces to 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 sent to the next step in the process.

M-110P Specifications

Description	M-110P	M-110PS	M-110P-20	M-110P-20S
Pressure Range	138 – 2,068 bar (2,000 – 30,000 psi)	138 – 2,068 bar (2,000 – 30,000 psi)	138 – 1,379 bar (2,000 – 20,000 psi)	138 – 1,379 bar (2,000 – 20,000 psi)
Minimum Sample Size	50 ml	25 ml	50 ml	25 ml
Flow Rate* Approximately (on water)	up to 120 ml/min - 60 Hz up to 100 ml/min – 50 Hz	up to 120 ml/min - 60 Hz up to 100 ml/min – 50 Hz	up to 120 ml/min - 60 Hz up to 100 ml/min – 50 Hz	up to 120 ml/min - 60 Hz up to 100 ml/min – 50 Hz
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	60 Hz/120 VAC/20 amp 60 Hz/230 VAC/10 amp 50 Hz/220 VAC/12 amp	60 Hz/120 VAC/20 amp 60 Hz/230 VAC/10 amp 50 Hz/220 VAC/12 amp	60 Hz/120 VAC/20 amp 60 Hz/230 VAC/10 amp 50 Hz/220 VAC/12 amp
Dimensions W x D x H	85.8cm x 59.1cm x 52.7cm (33.75" x 23.25" x 20.75")	85.8cm x 59.1cm x 52.7cm (33.75" x 23.25" x 20.75")	85.8cm x 59.1cm x 52.7cm (33.75" x 23.25" x 20.75")	85.8cm x 59.1cm x 52.7cm (33.75" x 23.25" x 20.75")
Weight	110 kg (242 lbs)	110 kg (242 lbs)	110 kg (242 lbs)	110 kg (242 lbs)
Features				
Interaction Chamber Material	Diamond	Diamond	Ceramic (diamond is optional)	Ceramic (diamond is optional)
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
300 ml Glass Feed Reservoir	Yes	Yes	Yes	Yes
Stainless Steel Feed Reservoirs	Optional	Optional	Optional	Optional

*Based on large chamber. Standard chambers will reduce flow rate.

All models include Microfluidics standard 1 year warranty.

Microfluidics reserves the right to change specifications without notice.

For more information, please contact:

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