

Water bath Shaker MM-10/Cool bath Shaker ML-10F

Shaking baths with High temp. accuracy that is used in various testing and research fields. Corresponds to Ames test with Monod shaking and Program operation as an option.

MM-10



Features

- Low-temperature type available, Easy to drain
- Reciprocal shaking, Shaking width adjustment, Monode shaking as an option
- Possible for Program operation as an option

Applications

- Cultivation of Microbe such as E. coli
- Various incubations such as Enzyme reaction
- Ames test [ML-10F with PU-6N, Some Modifications are required]

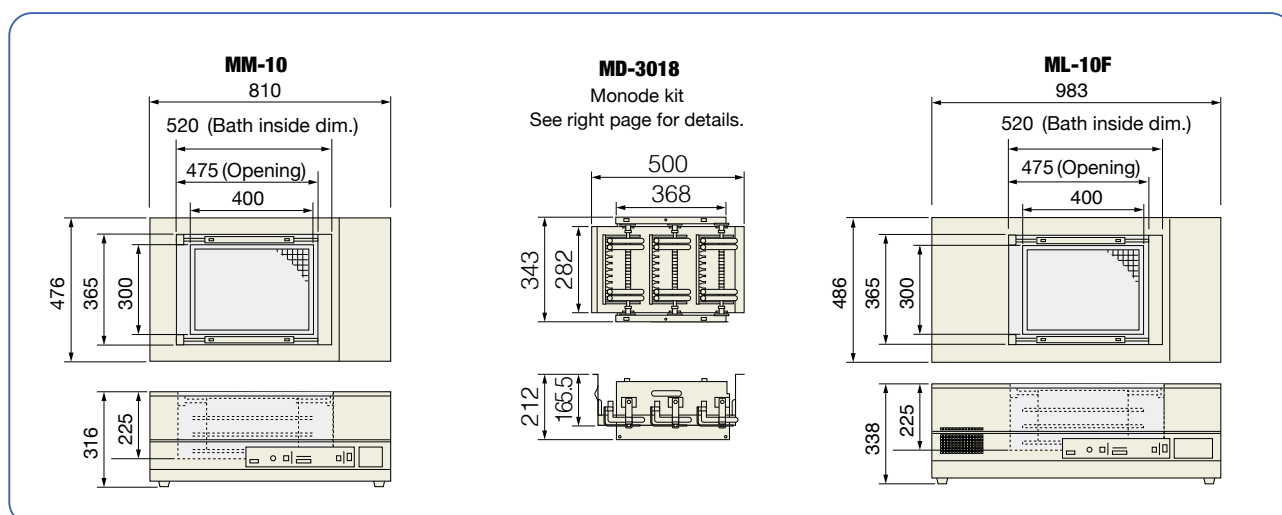


ML-10F

Model	MM-10	ML-10F
Temperature range (*1)	+5°C above RT to +80°C	0°C to +50°C
Temp. control accuracy (*2)	±0.02°C to 0.1°C	±0.05°C to 0.2°C
Shaking method/Speed range/Amplitude	Reciprocal shake, 20 to 160 r/min, 10 to 40 mm (Stepless variable)	
Temperature display	Digital (Changeable Preset/Current value)	
Platform dimensions	400 × 300 mm	
Stirring method in Bath	Jet flow	
Other functions	Temperature checking monitor, Remote temperature setting terminal (0 V to 5 V input, Enables Temp. program control with optional Program unit PU-5, etc.) (*3), Drain hole (right side of the unit)	
Heater/Compressor	Heater: 1300 W	Heater: 800 W, Compressor: 125 W
Safe devices/protections	Earth Leakage Circuit Breaker, Sample protection (High temp.), Water level alarm, Sensor error	
Bath inside dim. (W×D×H)/volume	520 × 365 × 225 mm, Approx. 25 L (60% Water level)	530 × 365 × 225 mm, Approx. 35 L (80% Water level)
Dimensions (W×D×H)/weight	810 × 476 × 316 mm, Approx. 45 kg	983 × 486 × 338 mm, Approx. 62 kg
Power supply	AC100V/15A (Need a step-down transformer)	
Standard accessories	Dedicated Spring net Shaking platform × 1 pc, Drain hole filter × 1 pc	

(*1) Max. temp. may not be reached when the optional Hood is not used or depending on the usage conditions. Use the heat medium for high temp. when above 70°C. See the right page for our specified heat medium.
 (*2) The value under the conditions of RT (2°C), AC 100 V/50 Hz, 60 to 80% Water level, and Preset temp. 37°C. This is an actual measured value (0.01 unit). (*3) Can be corresponded to Program unit PU-6N that enables the program control for temp. and shaking by a modification of this unit. Helps streamline the Ames test.

Dimensions




Optional accessories

Capacity of Vessels included in the Spring net shaking platform

Vessels	Capacity
φ16 mm Test tube (vertical)	204
Erlenmeyer flask 50 mL	24
Erlenmeyer flask 100 mL	20
Erlenmeyer flask 200 mL	12
Erlenmeyer flask 250 mL/300 mL	9
Erlenmeyer flask 500 mL	6
Erlenmeyer flask 1 L	3
Erlenmeyer flask 2 L	2
Sakaguchi flask 500 mL	6

Mountable number of Clamps (Optional)

	Vessels	Model	Number
 <p>Above 300 mL Clamps comes with Spring and Above 500 mL comes with Octagonal rubber sheet.</p>	50 mL	CF-0050	35
	100 mL	CF-0100	18
	200 mL	CF-0200	12
	250 mL	CF-0250	9
	300 mL	CF-0300	9
	500 mL	CF-0500	6
	1 L	CF-1000	4
2 L	CF-2000	2	
Sakaguchi flask	500 mL	SF-0500	6

Other Optional accessories



Monode kit MD-3018



MD-3018 Example for use



Program Unit PU-6N



Program Unit PU-5N

Description/Model	Remarks
Stainless steel-made Top lid for M series	Suppresses evaporation and Reduce power consumption.
Monode kit MD-3018	Monode Shaking platform below of L-shaped Test tube × 30 pcs. Enables to adjust the angle of shaking by replacing it with Spring net Shaking platform.
L-shaped Test tube (Incl. 10)	φ18 × 120 × 70 mm
Program Unit PU-5N	Enables Program control of Temp.
Program Unit PU-6N	Enables Program control of Temp. and Shaking (Some processing required separately for use in combination).
Heat medium for Low temp. (Antifreeze)/ Showbrine blue	Use it when below 7°C (Concentration 80% at around -40°C).
Heat medium for High temp. Silicone oil MA-50	Kinetic viscosity 50 mm ² /s (at 25°C), 18 kg, Focuses Temp. accuracy, Recommended for temp. above 70°C
Heat medium for High temp. Silicone oil MA-100	Kinetic viscosity 100 mm ² /s (at 25°C), 18 kg, Focuses Low evaporation, Recommended for temp. above 70°C

Application examples in the Ames test

MM-10/ML-10F optimum for Preculture of Microbes

Since Temp. control accuracy is ±0.02 to 0.1°C (ML-10F ±0.05 to 0.2°C), it enables Preculture of Microbes that meets the GLP standard (= Keeps the temp. 37°C within ±0.5°C).

Increases efficiency by using with the Program Unit!

Enables Automatic execution of Shaking ON-OFF and Temp. transition from storage temp (4°C) to the culture finished. For example, it can be set before going home so that you can conduct the experiment immediately the next morning.

USER'S VOICE

The combined PU-6N and ML-10F with some processing can be conveniently used for the Ames test.



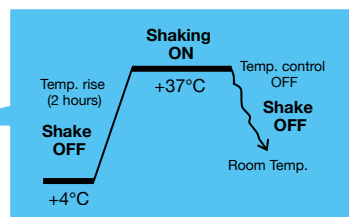
ML-10F



PU-6N

USER'S VOICE

Various other programs can be apparently set up.



Energy-saving Constant temp. Chamber recommended for Main Culture.

Use the "Invitro box iB-130" (page 154) for "Sprinkling it on the Min Glucose Agar plate medium at 37°C after Preincubation of the Specimen liquid and Microbes by mixing" and "Incubation for 48 hours". This unit also contributes to energy saving in laboratory facilities by the Three-position temp. control method.

USER'S VOICE

Since the air volume for air circulation in the chamber can be arbitrarily adjusted, it is recommended to weaken the air volume if drying of agar plate is concerned.



- NEW
- Constant temperature incubator/shaker OD Monitor
- For cell culture related products
- Shaker
- Mixer Rotator Stirrer
- Bead beater homogenizer Ultrasonic homogenizer
- Aluminum block Bath Mini-size Bath
- Water bath Shaking Water bath Immersion cooler
- Hybridization Incubator Constant temperature Chambers
- Centrifugal Concentrators Cold Trap
- Freeze dryers
- Submarine Electrophoresis apparatus Blotting device for hybridization
- Constant-temperature water circulating system [Chilled]
- Appendix