

# One step in the Lab



# Digest Catalog

# Bioshaker (Bench-top sized) | MBR-022R/K

This maximizer is optimal for small-diameter vessels such as well plates, microtubes, and vials. The R type can adjust the temperature to below the room temperature. It is suitable for applications that require multi-specimen processing or high-speed micro vibration.

**Capacity: Well plate × 2, Microtube rack (24 pcs) × 2**



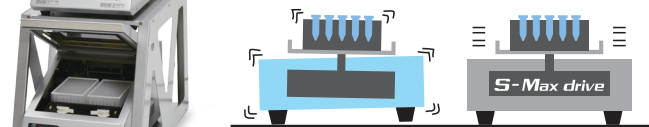
▲ Installation examples of the MBR-022R, which can hold up to 2 well plates (left in the photo), and the MBR-034P, which can hold up to 4 well plates (right: see page 04).

Model	MBR-022R	MBR-022K
Temperature range	+15°C to +60°C	RT +7°C to +60°C
Temp. control accuracy	±0.5°C to 1.0°C	
Shaking motion	Horizontal eccentric vibration (S-Max drive)	
Vibration speed	300 to 2500 r/min	
Ambient temp. range	+5°C to +30°C	
Heating/cooling method	Peltier element	Heater unit (for heating only)
Dimensions (W × D × H)	244 × 417 × 240 (H) mm	244 × 392 × 240 (H) mm
Weight	Approx. 15 kg	Approx. 13 kg
Power supply	AC 100 V to 240 V	
Standard accessories	Power cable × 1 pc, plate adapter × 1 pc, fuse × 1 pc, drain tray × 1 pc	

• This product is designed with a shaking mechanism suitable for 96-well plates, and the stirring efficiency will vary when it is used with other well plates such as those with 24 or 384 wells.

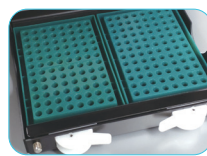
● A new mechanism that realizes a highly stable stirring effect

Our newly developed S-Max drive mechanism greatly reduces instability of the main body. It is stable and do not move around even if multiple units are installed on narrow shelves. Compared with our previously sold model, the MBR-022UP, the vibration rate of the main body is reduced by more than 50%.



◀ Example of using the optional stacking shelf, Stack Case SKM-2.

● Applicable vessels



This product comes with a standard shaking rack that can hold up to two well plates. It can also stir non-skirted PCR plates and semi-skirted well plates (low profile types are not compatible) using commercially available tube racks (up to 1200 r/min).



An optional microtube rack is required for shaking microtubes (see below, item ②). Additionally, the MBR-022R/K is the successor to our previously sold model, the MBR-022UP, which was on the market for about 20 years. The microtube rack option is compatible with the old model, and can be used interchangeably.

◀ The previous model, the MBR-022UP

## Micro mixer | E-022/022T E-022/022T are equipped with the same S-Max drive mechanism as the aforementioned MBR-022R/K and do not have a temperature control function.

**Stirring speed 300 to 2500 r/min. Quiet and stable well plate/microtube mixer.**



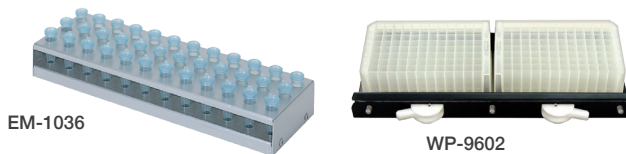
▲ Example of using the optional shelf, the Stack Case SKE-3, for E-022.

The "S-Max drive" mechanism ensures stable vibration even on narrow shelves. The E-022T comes with a standard shaker platform (same as MBR-022R/K), which is ideal for well/deep well plates, due to popular demand.

Model	E-022	E-022T
Shaking motion	Horizontal eccentric vibration (S-Max drive)	
Vibration speed	300 to 2500 r/min	
Ambient temp. range	+4°C to +40°C	
Dimensions (W × D × H)	300 × 200 × 105 (H) mm	244 × 265 × 115 (H) mm
Weight	Approx. 6 kg	Approx. 6 kg
Applicable vessels	Microtubes (requires an optional rack as indicated on the right, either ① or ②) Well plates (Two plates can be fixed as standard, restrictions may apply depending on the manufacturer) (1)	Well plates/Deep well plates (2 pcs) Microtubes (requires an optional rack indicated on the right, ②)
Power supply	AC 100 to 240 V	

(1) In the E-022, well plates can be directly fixed on the shaking platform, but it may be impossible to fix them properly, depending on their manufacturer or model number. To fix them more securely, it is recommended to use a shaking platform for well plates (WP-9602). (The platform is necessary for deep well plates.) If you primarily use well plates, we recommend the E-022T.

Options ①: Microtube rack and Shaking rack for E-022



Model	Capacity of vessels / Remarks
Microtube rack EM-0836	0.5 mL × 36, Dimension: 262 × 82 × 32 (H) mm This rack can be installed on the E-022 without using WP-9602.
Microtube rack EM-1036	1.5 mL × 36, Dimension: 262 × 82 × 32 (H) mm This rack can be installed on the E-022 without using WP-9602.
Shaking platform for well plate WP-9602	For use with 2 pcs of Deep well plates or a microplate that cannot be fixed with standard platforms. Remove the standard platform to replace it.

Options ②: Microtube rack for MBR-022R/K, MBR-034P and E-022/022T



For the 5.0 mL tubes, Axygen and other types are compatible, but Eppendorf type is not.

Model	Capacity of vessels / Remarks
EM-0524 (*)	0.5 mL × 24, Dimension: 126 × 86 × 28.5 (H) mm
EM-1524 (*)	1.5/2.0 mL × 24, Dimension: 126 × 86 × 40.5 (H) mm
EM-1515 (*, 2)	5.0 mL × 12, Dimension: 126 × 86 × 55.5 (H) mm

(\*) WP-9602 is required for installation for E-022. Please use two of these Microtube racks in combination.  
(2) For the 5.0 mL tubes, Axygen and other types are compatible, but Eppendorf type is not.

## Bioshaker (Bench-top sized) | MBR-034P

Constant temperature incubator shaker for Well plate and Microtube

**Capacity: Well plate × 4, Microtube rack (24 pcs) × 4**

An optional microtube rack is required for shaking microtubes (see left below, item ②).



Model	MBR-034P
Temperature range	RT -7°C to +60°C (*1)
Temp. control accuracy	±0.5°C to 1.0°C (*2)
Shaking motion/Speed range	Horizontal eccentric shaking, 200 to 1600 r/min
Ambient temp. range	+5°C to +30°C
Heating/cooling method	Peltier element
Dimensions/Weight	405 × 445 × 230 (H) mm, approx. 18 kg
Power supply	AC 100 V-240 V/2 A (universal power supply)

(\*1) The limits on the temperature range are the room temperature minus 7°C for cooling and plus 40°C for heating.  
 (\*2) Values for when the ambient temperature is around +25°C.  
 • Equipped with the platform for Well plate. Since it is designed for the 96-well plate, the agitating effectiveness will be different when using different well sizes such as 24-well and 384-well Plates.

## Bioshaker (Bench-top sized) | VBR-104

Suitable for small-scale culture in Erlenmeyer flask, Centrifuge tube, and Microtube

**Capacity: Erlenmeyer flask 100 mL × 6 pcs**

VBR-104 with optional spring net shaking platform MR-2420



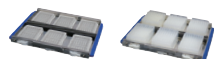
Model	VBR-104
Temperature range (*1)	+8°C above RT to +60°C
Temp. control accuracy (*2)	±0.5°C to ±1.0°C
Shaking motion/Speed range	Orbital shaking, 50 to 500 r/min
Platform size	240 × 200 mm (Max. inside height: 168 mm)
Ambient temp. range	+5°C to +30°C
Heating method	Heater 80 W
Maximum load	1 kg (Platform included)
Dimensions/Weight	375 × 445 × 260 mm, Approx. 20 kg
Power supply	AC 100 V-240 V/2 A (universal power supply)
Standard accessory	Sticky sheet × 1 pc

(\*1) It may not reach the maximum temperature depending on the surroundings. (\*2) The value at the ambient temperature of 25°C.

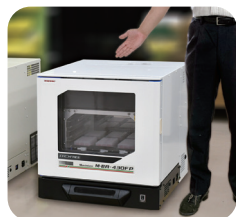
## Bioshaker (Medium sized) | MBR-430FP

It is a large capacity constant temperature incubator shaker for 96-well plates. The FP type is energy-saving due to Peltier cooling.

**Capacity: Deep well plate × 12, Microplate × 24**



The shaking platform is sold separately. For details, see the website.



MBR-430FP with the Optional Shaking platform for Deep well plates

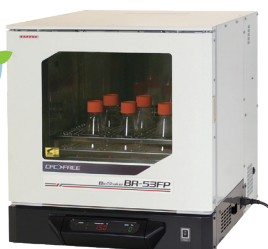
Model	MBR-430FP
Temperature range	+20°C to +50°C (*1) (5°C below RT to 25°C above RT)
Temp. control accuracy	±0.5°C
Shaking motion	Horizontal eccentric shaking (Inverting function)
Speed range	200 to 1500 r/min (Up to 1000 r/min at inverting shaking)
Capacity (*3)	Deep Well plate × 12 or Microplate × 24
Ambient temp. range (*4)	+5°C to +30°C
Heating/cooling method	Peltier element
Dimensions (W × D × H)	600 × 732 × 643 mm
Weight	105 kg (Platform not included)
Power supply	AC 100 V/AC 220 V-240 V/7 A

(\*1) The value at 25°C of the rear surface intake temp. The temperature range of the unit is 5°C below RT to 25°C above RT, or within the operating temperature range. (\*2) This is not applicable to the temp. immediately after starting the defrost function. (\*3) Shaking platform (Optional) is required to fix the plates. The capacity varies depending on the number of shaking platforms. (\*4) No condensation.

## Bioshaker (Medium sized) | BR-53FP

It is widely used for cultivation of microbes such as Yeasts, E. coli, etc. that require temp. control and shaking. The FP type is energy-saving due to Peltier cooling.

**Capacity: Erlenmeyer flask 500 mL × 6 pcs, 5 L × 1 pc**



Stacking example of BR-40UL (Related products, upper) and BR-53FP (lower)

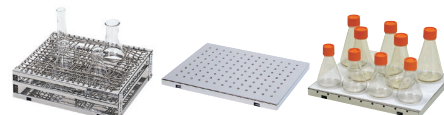


For the small to medium BR series (excluding 40LF), the control panel is a sliding retractable type. After setting the temperature, speed, and program operation, it can be compactly stored.



### Options

Shaking platform sold separately. For details on clamps, see the next page.



Model	BR-53FP
Temperature range	15°C to 55°C
Shaking motion	Reciprocal/Orbital
Speed range	20 to 300 r/min (200 r/min at the upper of stacked units)
Door type	Single swing door (Leftward open, Can be changed to rightward open)
Heating/Cooling method	Peltier element
Program functions	1 program, 9 segments: Temp., Shaking speed and time/per segment (Setting range: 00 h 00 min to 99 h 59 min), Temp. gradient function
Dimensions (W × D × H)	600 × 732 × 643 (H) mm
Weight	Approx. 86 kg
Power supply	AC 100 V/AC 220-240 V/7 A

Product Name / Model	Capacity of vessels / Remarks
Spring net shaking platform MR-4030	Example of capacity: Erlenmeyer flasks 500 mL × 6 pcs, 1 L × 3 pcs
Universal shaking platform MT-4030	It can hold flasks tightly compared to the Spring shaking platform. (Clamps are optional)
Sticky sheet shaking platform SR-4030	Flat-bottom vessels can be held simply by placing them on the platform. Max. shaking speed: 100 r/min
Inner rack RSB-5032	It can be installed to the upper of the chamber for models BR-41/42/43/53

# Bioshaker (Large sized) | BR-330/3300 series

Redesign of long-time-selling large Bioshakers. Energy consumption (Wh) is about 1/6<sup>th</sup> to 1/7<sup>th</sup> of the predecessors. Usability is further improved, with one-tier and two-tier shaking.

**Capacity: Erlenmeyer flask 500 mL × 15 pcs (BR-330), 30 pcs (330W)**  
**Capacity: Erlenmeyer flask 500 mL × 32 pcs (BR-3300/B/S), 64 pcs (3300W/BW/SW)**



BR-330W



BR-3300BW



Larger window! ⇨

BR-330 series

Conventional BR-300LF series

## Large internal observation window, redesigned control panel, digital settings and digital display

The BR-330/3300 series inherits the reliability of the previous BR-300LF/3300LF series, which has been selling for over 25 years, while improving detailed usability. The external dimensions, internal volume, and capacity are the same as those of the previous series, but the "internal observation window" has been enlarged to facilitate viewing of the inside of the chamber. In addition, the new "LED chamber light" with improved placement makes it easier to see containers. Further, the control panel was redesigned. The shaking speed set by dial in the predecessor is now set and displayed digitally with up/down keys for both temperature and speed.

## Contributes to energy conservation

This series is equipped with our "Eco-Drive" function, which automatically controls and optimizes refrigerator and heater output depending on the usage ambient temperature and the set temperature. Compared to our previous models, the power consumption of the BR-330 series is approximately 1/7<sup>th</sup>, while that of the BR-3300 series is approx. 1/6<sup>th</sup> (at 37 °C), which results in substantial energy conservation.

## Long-time-selling large Bioshakers. Shaking is switchable reciprocal/orbital, and shaking width is adjustable.

Can be widely used for experiments that require temperature control and shaking, including shaking cultures of microorganisms; a shaking table for claw-clamps is included (claw-clamps sold separately), and spring net shaking tables and other products are also available separately. Reciprocal/orbital shaking can be switched easily. Also, the shaking width can be changed freely between 10 and 50 mm.

## Program functions added

The predecessors required program units that are sold separately, but the BR-330/3300 series can perform programmed operations without additional program units. You can set up to nine steps of the set of "temperature, shaking speed, time". For example, after culturing at 37 °C, it can switch to a temperature at 4 °C to save samples. (For details on how to specify settings, see the website. Videos are also available.)

## Door locking during operation and door unlocking notification (3300S/SW)

The BR-3300S/SW, the high-end model of the series, is equipped with a "safety door lock" function that locks the door during shaking, as a safety function. The door automatically locks when shaking is started, and an LED lamp and melody notify the user when shaking has completely stopped and when the door is unlocked.

## Top board made of the same material as the lab bench (3300B/S/BW/SW)

The BR-3300B/S/BW/SW is equipped with a thick top board made of the same material as the lab bench. It can be used for placing items such as consumables.



Model	BR-330	BR-330W	BR-3300	BR-3300B	BR-3300S	BR-3300W	BR-3300BW	BR-3300SW
Number of shaking tables	One-tier		One-tier			Two-tier		
Top board/door lock	—		—	Has a top board	Has a top board and a door lock	—	Has a top board	Has a top board and a door lock
Shaking method/shaking width	Switchable reciprocal/orbital, 10 to 50 mm (stepless adjustment).							
Door type	Front door; left open		Front door; double-swing door			Front door; double-swing door		
Usage temperature range	+4 °C to +70 °C		+4 °C to +70 °C		+4 °C to +60 °C	+4 °C to +70 °C		+4 °C to +60 °C
Shaking speed	25 to 250 r/min	25 to 160 r/min	25 to 250 r/min		30 to 250 r/min	25 to 160 r/min		30 to 160 r/min
Platform size and example number of containers	600 × 400 mm (max. inside height of BR-330: 575 mm) In case of 500 mL Erlenmeyer flask, 15 flasks; in two-tier, 30 flasks*		800 × 600 mm (max. inside height: 601 mm) In case of 500 mL Erlenmeyer flask, 32 flasks; in case of 5 L Erlenmeyer flask, six flasks			800 × 600 mm (container size that can fit to each tier: up to 1 L Erlenmeyer flask or 500 mL shaking flask); in a case of 500 mL Erlenmeyer flask, 64 flasks; in a case of 1 L Erlenmeyer flask, 36 flasks		
Heating/cooling method	Heater (700 W), refrigerator (125 W)		Heater (800 W), refrigerator (125 W)			Heater (800 W), refrigerator (125 W)		
Program functions	Four programs can be memorized; one program can contain nine steps; temperature, shaking speed, and time can be set to each step (time setting range: 00 h 00 min to 99 h 59 min), with a wait function.							
External dimensions*7	1110 × 662 × 1120 mm		1327 × 835 × 1234 mm	1327 × 835 × 1256 mm		1327 × 835 × 1234 mm	1327 × 835 × 1256 mm	
Weight	Approx. 216 kg	Approx. 226 kg	Approx. 307 kg	Approx. 326 kg	Approx. 328 kg	Approx. 327 kg	Approx. 346 kg	Approx. 348 kg
Power supply	AC 100 V/AC 220-240 V/11 A (built-in down transformer)		AC 100 V/AC 220-240 V/12 A (built-in down transformer)					
Power supply/remarks	Universal shaking platform MT-6040E included (two for two-tier); clamps sold separately		Universal shaking platform MT-8060A included (two for two-tier); clamps sold separately			Universal shaking platform MT-8060A included (two for two-tier); clamps sold separately		

\* Container size that fits in each tier of the BR-330W: Up to 1 L Erlenmeyer flasks or 500 mL shaking flasks

# Bioshaker (Large sized) | GBR-200/300

The top board can be practically used as a Lab bench. Stackable up to Two levels.

Max. speed 200 r/min (GBR-200) and 300 r/min (GBR-300).

Capacity: Erlenmeyer flask 500 mL × 24 pcs, 5 L × 4 pcs

• The top board can be practically used as a Lab bench.

Adopted the same material of a Lab bench top board. The top board height is almost the same as that of a Lab bench.

It is not suitable for precision work, but it can be used as an auxiliary Lab bench.



▲ Example of two-level stacking. IMCB Institute of Molecular and Cell Biology

Model	GBR-200	GBR-300
Shaking motion/Temp. range	Switchable Reciprocal/Orbital shaking, 4°C to 80°C	
Speed range	25 to 200 r/min	25 to 300 r/min (200 r/min at the upper of stacked units)
Heating/Cooling method	Heater 700 W / Compressor 125 W	
Program functions	1 pattern, 9 segments (4 combinations can be saved): Temp., Shaking speed and Time/per segment (Setting range: 00 h 00 min to 99 h 59 min), Wait function	
Dimensions/Weight	1200 × 800 × 810 mm (Including Top board), Approx. 235 kg	
Power supply	AC 100 V/AC 220-240 V/12 A (built-in down transformer)	
Standard accessories	Universal shaking platform MT-7050 × 1 pc *Clamps are optional. See below	

## Optional accessories for BR/NR series

### • Clamps



Mounted on Shaking platforms for use. Please refer to the website for details on the flask capacity for each shaking platform. Above, 300 mL clamps come with a spring, and 500 mL clamps come with a spring and an octagonal rubber sheet.

Model	Erlenmeyer flasks (glass, unless otherwise noted)
CF-0050	50 mL
CF-0100	100 mL [Disposable flasks] Corning / Thermo 125 mL (*1)
CF-0200	200 mL [Disposable flasks] Thomson 250 mL (*2)
CF-0250	250 mL [Disposable flasks] Corning / Thermo (*1) / Thomson 250 mL (*3)
CF-0300	300 mL
CF-0500	500 mL [Disposable flasks] Corning / Thermo (*1) / Thomson 500 mL (*2, 3)
CF-1000	1 L [Disposable flasks] Corning / Thermo 1 L (*1), Thomson 1.5 L (*2), 1.6 L (*3)
CF-2000	2 L [Disposable flasks] Corning / Thermo 2 L (*1), Thomson 2.5 L (*2), 2.8 L (*3)
CF-3000	3 L
CF-5000	5 L
CF-3000DSP	[Disposable flasks] Corning 3 L, Thermo 5 L (*3)

(\*1) Thermo Fisher PETG Erlenmeyer flask 411X-0125/0250/0500/1000/2000 type (\*2) Thomson Ultra Yield flask (\*3) Thomson Optimum Growth flask

### • LED irradiation unit (for medium- and large-sized BR/NR series)



◀ LC-450EXP with optional controller LC-LED-CON1



Optional controller LC-LED-CON4 ▲ Up to four LED units can be controlled with the same output.

Model	LC-450EXP	
LED	LED Color: White, Peak wavelength: 450 nm Photon flux density: approx. 310 μmol Irradiated surface average: ±15%	
Dimensions of LED light source /Weight	340 × 240 mm, about 2.5 kg	
Use conditions	Temperature range: +4 to +50°C, Shaking speed: Up to 200 r/min	
Dedicated controller model	LC-LED-CON1	LC-LED-CON4
Dimming method, controllable range	PWM method, control in 1% increments, 10 to 100% (*)	
Number of controllable LED irradiation units	Control the amount of light in one piece. For use with medium-sized BR.	Controllable 1 to 4 pcs simultaneously, at the same output (%). For large-sized BR.
Weight	Main unit approx. 0.2 kg, AC adapter approx. 0.2 kg	Main unit approx. 0.7 kg, AC adapter approx. 1 kg
Power supply	AC 100 V-240 V/2 A (AC Adapter)	AC 100 V-240 V/5 A (AC Adapter)

## Large-sized shakers | NR-150N/Two-tier platform NR-150N

Large-sized, floor-standing shaker that can be used in a constant temperature room.

Capacity: Erlenmeyer flask 500 mL × 15 (NR-150N)/ × 30 (Two-tier platform)



NR-150N/ Two-tier platform NR-150N with optional clamps

Model	NR-150N	Two-tier platform NR-150N
Shaking motion/speed	Reciprocal/Orbital, 25 to 250 r/min	Reciprocal/Orbital, 25 to 160 r/min
Shaking width	10 to 50 mm, Stepless (Default: 25 mm)	
Maximum load	Approx. 26 kg (Shaking platform and vessel holders are included) (*1)	
Shaking duration integrator	Timer function (setting/display: 1 min to 99 h 59 min) •ON-END •OFF-ON •OFF-ON-END *When the timer function is not being used, it can count the time.	
Dimensions/Weight	760 × 585 × 350 mm, Approx. 70 kg	760 × 585 × 789 mm (*2), Approx. 83 kg
Power supply	AC 100 V-240 V/0.5 A (universal power supply)	
Standard accessories	Universal shaking platform MT-6040C × 1 set (Two-tier platform: 2 sets), Spacer × 4 pcs (1 mm thick × 2 pcs and 2 mm thick × 2 pcs), Slip prevention sheet × 4 pcs	

(\*1) When the clamps are attached to the platform of NR-150N, the max. load of NR-150N is approx. 19 kg and that of Two-tier platform is approx 10 kg. (\*2) The height is the maximum value. (Upper platform height can be adjusted.)

### Newly equipped timer enables accurate control of shaking time.

Equipped with the same timer as the environmental shaker series. Digital settings and display for IQ, OQ, and calibration. Memory for speed setting allows switching between different speeds with a single button.



Timer setting area Shaking setting area

## Customized Bioshaker | CO<sub>2</sub>-BR series

A culture equipment for culturing floating cells using Erlenmeyer flasks. This series is designed to efficiently culture mammalian cells, or microalgae such as cyanobacteria, in Erlenmeyer flasks instead of process bags.

CO<sub>2</sub>-BR series with optional Gas controller



Model (Shaking incubator)	CO <sub>2</sub> -BR-53FP-MR/MT	CO <sub>2</sub> -GBR-200
Temperature range/accuracy (*1)	+15°C to 50°C, ±0.3 °C	4°C to 80°C, ±0.3 to ±1.0°C
Shaking motion/speed	Switchable Reciprocal/Orbital, 20 to 200 r/min	Switchable Reciprocal/Orbital, 25 to 200 r/min
Number of Gas supply tube	6 pcs (Standard)/Up to 12 pcs (Optional). For details about the applicable vessels and capacity, refer to our website. (*2)	
Door	Single swing door (Leftward open, Can be changed to rightward open) (*3)	Swing lift-up door
Dimensions (W × D × H)	600 × 732 × 643 mm	1200 × 800 × 810 mm (Including Top board)
Power supply(*4)	AC 100 V/AC 220-240 V/7 A	AC 220-240 V/12 A (Built-in down transformer)
Standard accessories	Gas supply hose set (6 pcs) Spring net shaking platform MR-4030 (MR) Universal shaking platform MT-4030 (MT)	Ask
Recommended Gas controller	CO-GAS3000 (Air & CO <sub>2</sub> ) or Multi-GAS3000 (O <sub>2</sub> & CO <sub>2</sub> & Air). Both are optional. (For details, please refer to our website.)	
Response to irradiation	LC-450EXP (Optional) × 1 pc, Example of capacity: Erlenmeyer flasks 300 mL × 6 pcs	Ask

(\*1) The temp. for the defrost function is not included. Ambient temperature is 5°C to 35°C. (\*2) For mammalian cells, flask caps for gas supply connection are designed assuming disposable type flasks (CORNING and Thomson, USA). (\*3) Distributor can make necessary changes. (\*4) A step-down transformer is required for the optional gas controller.

## Shaker for High humidity | CS-LR

The waterproof shaker enables stable operation under high humidity in a CO<sub>2</sub> incubator, etc. The low calorific value has an uninfluential effect on the inside temp.



Model	CS-LR
Shaking motion	Switchable Reciprocal/Orbital shaking
Shaking speed/width	15 to 200 r/min, 25 mm (can be changed to 20 mm) (*)
Ambient temp./Humidity	0°C to 50°C/Up to 95 %
Maximum load	Approx. 3 kg (Optional platforms and vessel holders are included)
Dimensions (W × D × H)	Main unit: 300 × 240 × 129 (H) mm/Controller: 125 × 30 × 70 (H) mm
Weight	Main unit: Approx. 7 kg/Controller: Approx. 0.5 kg
Power supply	AC 100 V-240 V/1 A (AC Adapter)

(\*) Ask our/TAITEC distributor if you would like to change.

### Optional accessories: Shaking platform

Product Name / Model	Example of Capacity
Universal shaking platform MT-2030 (*1)	100 mL Erlenmeyer flask × 12, 250 mL × 6, 300 mL × 6, 500 mL × 3
Universal shaking platform for CS-LR MT-3636 (*1, 2)	100/200/250 mL Erlenmeyer flask × 18, 300/500 mL × 9, 1 L × 5
Two-tier shaking platform WR-2030 (*3)	6 cm dish × 24, 50 mL TC flask × 12
Spring net shaking platform MR-2030	50 mL disposable centrifuge tube × 24

(\*1) Clamps are available as an option. (\*2) MT-3636 is a specifically designed platform for CS-LR. Be sure to use below 160 r/min. (\*3) Sticky sheet ST-2030 (optional) is required to prevent slipping. Optional shaking platforms are not processed with antibacterially processing.

## Swing incubator | SW-060

Peltier element controlled. Freon-free, high-precision constant temperature shaker is suitable for your various incubation purposes. You can choose from four types of shaking options that are easily changeable.



Optional Seesaw Kit inside SW-060

◀From the top, SW-060, HB-80N and HB-100N (sister models of the SW-060). The height is only 135 cm after stacking three units.

The SW/HB series is used as a compact air bath incubator and also as a constant temperature incubator for warming media. It is convenient as it avoids contamination from water.



Model	SW-060
Temperature range	+15°C to +60°C (*1) (RT -10°C to RT +35°C)
Temp. control accuracy	±0.1 to 0.2°C (*1)
Shaking motion /Shaking speed	The following shaking motions are available by replacing the shaking kit (optional)(*2): Seesaw, reciprocating, rotation (bottle rotation and microtube inversion stirring) 5 to 60 r/min
Heating/cooling method	Peltier element: 300 W
Platform effective dims.	260 × 230 mm
Dimensions / Weight	425 × 465 × 445mm (W × D × H), Approx. 32 kg
Power supply	AC 100 V-240 V

(\*1) The value under ambient temperature around 25°C.

### Optional accessory: Shaking Kits for SW/HB series

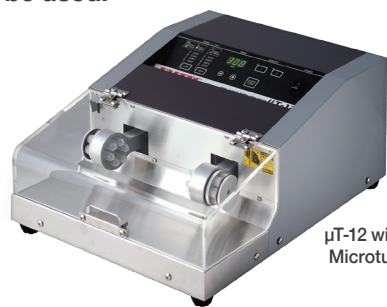


Product name/Model	Vessels/Capacity/Remarks
Seesaw Kit S-2623	Angle: 4-step variation 7/8/11/15°
Bottle Kit B-4008	Bottle × 8 pcs. In large-sized membranes, curl it off and put it in.
Microtube Kit M-1596	1.5/2.0 mL Microtube × 96 pcs (32 pcs × 3)

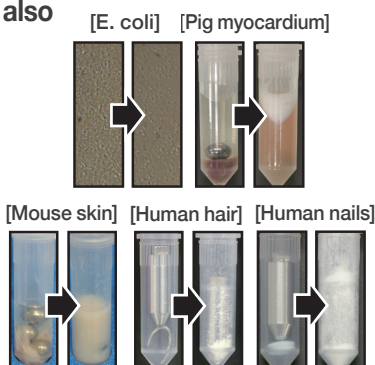
\*A special holder suitable for specific vessels can also be produced.

## Beads Crusher | $\mu$ T-12

Strong crushing by high-speed pendular swinging for various samples. Up to 12 tubes of 2 mL Microtubes. 5 mL Microtubes can also be used.



$\mu$ T-12 with Optional Microtube holders



## Beads Crusher | $\mu$ T-01/01N

Strong crushing and High stability using high-speed pendular swinging. For one simple 2 mL Microtube.



$\mu$ T-01  
 $\mu$ T-01N

Model	$\mu$ T-12	$\mu$ T-01	$\mu$ T-01N
Shaking speed	1800 to 3200 r/min (8-step setting) (*1)	2500 to 4600 r/min (6-step setting) (*4)	2000 to 4600 r/min (Stepless setting: per 100 r/min) (*4)
Capacity	1.5/2.0 mL Screw cap microtube: Max. 12 pcs (*2) 5.0 mL Screw cap tube: Max. 2 pcs (*3)	1.5/2.0 mL Screw cap microtube Outer diameter below 11 mm of the body of Microtubes can be used	
Timer	1 to 300 seconds (Per 1 second setting. Up to 2 parameter settings can be memorized)	6-step setting (5, 10, 15, 30, 45, 60 seconds)	No Timer
Memory		-	1 × Setting
Dimensions (W × D × H)/Weight	310 × 400 × 200 (H) mm, Approx. 15 kg	175 × 280 × 160 (H) mm, Approx. 5 kg	
Power supply	AC 100 V-240 V/4 A (universal power supply)	AC 100 V-240 V/0.5 A (universal power supply)	

(\*1) Set below 2500 r/min and within 30 seconds when using Metal crusher and 5 mL Tubes. (\*2) Refer to Recommended Microtubes. For details, please visit our website. Maximum 12 pcs when using Metal crusher. (\*3) \*QSP Transport Tube 5 mL\* (580-GRD-Q) is recommended. (\*4) Set below 4000 r/min and 15 seconds when using Metal crusher. •Stainless steel beads and Metal/Zirconia crusher are available as an option. Marketed Glass and Zirconia beads can be used.

### •Optional parts



TH-0206



TH-0203



TH-0501EP

Model	Product Name/Model
TH-0206	1.5/2.0 mL Screw cap Microtube 6 pcs-Holder
TH-0203	1.5/2.0 mL Screw cap Microtube 3 pcs-Holder for cold storage
TH-0501EP	5.0 mL Screw cap Microtube Holder for Eppendorf
Mixed Stainless beads	φ 2 pcs/20 g, 3 pcs/40 g, 4 pcs/40 g, 5 pcs/50 g
Metal crusher	2 mL Microtube (Conical bottom) 6 pcs

## Freeze Crusher | $\mu$ T-48

Powerful crushing of frozen samples with liquid nitrogen. 48 samples can be treated simultaneously. Optimum for extracting hard samples, proteins susceptible to heat denaturation, RNA, etc.

### •Optional accessories: Vessel holders



48pcs-Holder for  $\mu$ T-48  
TH-0248T



Stainless steel-made strong crushing vessel  
TH-SPT

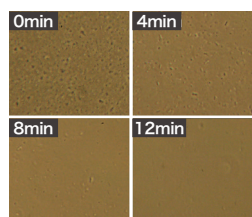


Model	$\mu$ T-48
Crushing method	Vertically reciprocal shaking
Shaking speed	0 to 2500 r/min (*1)
Capacity	2.0 mL Microtube: Max. 48 pcs (*2)(*3) Stainless steel powerful crushing vessel : Max. 4 pcs (*3)
Timer	1 to 999 seconds
Safety devices/functions	Holder attachment detection switch, Cover opening detection switch
Dimensions (W×D×H)	220 × 310 × 315 mm
Power supply	AC 100 V-240 V/1 A (universal power supply)

(\*1) Around 1200 r/min should be necessary and sufficient condition to crush the sample in actual use.  
(\*2) Eppendorf "Safe-Lock Tube 2 mL" is recommended. (\*3) Microtube and Stainless powerful crushing vessel are available as an option.

## Ultrasonic homogenizer | VP-050N

Automatic tuning and easy operation. Small hand-held type is suitable for small-volume samples. For disruption of E. coli, etc. after expression of protein.



Disruption of 1 mL E. coli  
(VP-MS03 used)



P-050N with Stepped Micro Tip (Optional)

Model	VP-050N
High frequency output	Maximum 50 W
Transducer normal output	10 to 40 W
Oscillation frequency range	19.5 to 20.5 kHz
Other functions	Timer operation (1 sec to 120 min) Programmed interval operation (ON: 3 to 60 sec, OFF: 1 to 60 sec)
Configuration	Main unit, Converter (Horn/Oscillation switch integrated)
Dimensions (W×D×H)	122 × 288 × 283 mm
Power supply	AC 100 V-240 V/1 A (universal power supply)

# OD-Monitor A&S/C&T

**The industry's first Non-contact turbidimeter that can measure the turbidity of sample at OD<sub>600</sub> while shaking. Adopted among the hundreds of R&D institutions. Operated with Bioshaker (Incubator shaker) in combination.**



OD-Monitor A&S connected to 2 sets of ODSensor-S

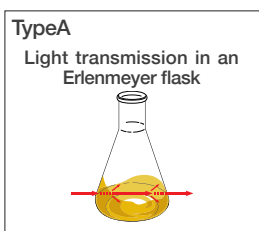
For 100-500 mL flasks



OD-Monitor C&T

For Test tubes

## In the study of small-scale Erlenmeyer flask expression



TypeA

Light transmission in an Erlenmeyer flask



OD-Monitor A&S + BR-43LF

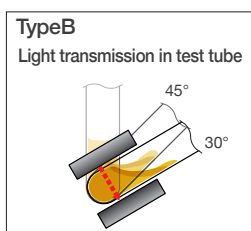
## Features (common to B&L on the right page)

- The turbidity can be measured at OD<sub>600</sub> noncontact in the chamber (Patented)
- Measured and recorded per one test tube, one Erlenmeyer flask
- Operated with Bioshaker (Incubator shaker) in combination

## Applications

- Examination and screening of beneficial bacteria [ODM C&T].
- Labor-saving acquisition of growth curve
- Background reduction by sampling

## In screening and expression studies in test tubes



TypeB

Light transmission in test tube



OD-Monitor C&T + BR-23FP

Model	OD-Monitor A&S	OD-Monitor C&T
Measurement method/range	Light transmission, 0.00 to 2.55 (OD <sub>600</sub> )	Light transmission, 0.00 to 2.55 (OD <sub>600</sub> )
Vessel and Fluid volume	Vessel: Glass Erlenmeyer flask Size: 100/200/300/500 mL Fluid volume: 20/40/60/100 mL	Vessel: Glass Test tube Size: φ 16.5/18.0 mL Fluid volume: 5 mL or 10 mL
Shaking method	Orbital shaking	Reciprocal shaking
Shaking conditions	80 to 400 r/min (Shaking width 25 mm), 80 to 200 r/min (Shaking width 30/40 mm), 80 to 250 r/min (Shaking width 50 mm)	100 to 250 r/min (Shaking width 25/50 mm) Angle of Test tube 90/45/30°
Measurement intervals/channel	1/5/10/30/60/120/240 min, 1 to 8 (A&S)/1 to 8 (C&T) (*)	
Ambient temp. range	+15°C to +50°C	
Other functions	Alarm for specific value at OD, Transformation to Spectrophotometer in measurement value, USB flash drive (CSV file), Operation for pump unit (B&L) when above specified OD value	
Weight	1.9 kg (BoxA) 0.2 kg (Sensor-S)	1.9 kg (BoxC) 1.2 kg (Sensor-T)
Power supply	AC 100 V-240 V/1 A (universal power supply)	
Standard accessories for ODBox	Flat cable (2 m) × 1 pc, *For A&S, Power cable × 1 pc	
Standard accessories for ODSensor	Vibration absorbing pad of Flask (large and small) × 1 pc, Flat cable (0.5 m) × 1 pc	Magnet adapter (2 types) × 1 pc, Flat cable (2 m) × 4 pcs

(\*) A&S equipped with 1 channel per 1 set of ODSensor. Some number of ODSensor should be required depending on the number of samples. C&T equipped with 8 channels per 1 set of ODSensor can be connected with only 1 set of ODBox. ODSensor with maximum number of channels cannot be put in Bioshaker depending on its size. Ask us for details.

## Recorded data

OD BOX can record up to 360 points.  
 (Point=Total measured time ÷ Measurement interval)  
 The acquired data can be stored in a USB and output to PC In TXT format of CSV.  
 The turbidity is 0 at the start of measurement and display measured values.  
 It measures turbidity based on the size of E. coli, you need to correct the turbidity of targeted bacteria by spectrophotometer.

## The capacity (number of installation and measurement) of ODSensor in Bioshaker BR-series

A&S and B&L: In BR-series the number of measurement of the unit equal to that of installation of the unit.  
 C&T: The number of measurement to the number of installation is by 8 times.

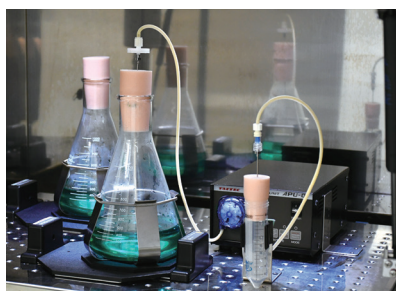
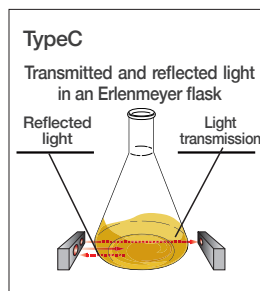
BR series	Shaking platform	Sensor-S	Sensor-L	Sensor-T (*)
BR-2X Series	MT-2925	3	1	2 (16 pcs, 2 Boxes)
BR-40 (*)/41/42/43/53	MT-4030	5	2	3 (24 pcs, 3 Boxes)
BR-300LF	MT-6040	8	4	5 (40 pcs, 5 Boxes)
BR-180 (*)/GBR	MT-7050	16 (2 Boxes)	5 (2 Boxes)	12 (96 pcs, 12 Boxes)
BR-3000 Series	MT-8060	20 (3 Boxes)	8 (2 Boxes)	14 (112 pcs, 14 Boxes)

(\*) At 45° angle. (\*\*) Up to 2 L of Erlenmeyer flask can be used with the BR-40LF. (\*\*\*) Excluding BR-180LF-70RT.

# OD-Monitor B&L

**OD-Monitor B&L can be used with 1 L–3 L flasks.**  
**Operated with Bioshaker (Incubator shaker) in combination.**

When used with the APU-01 pump (sold separately), the culture medium can be added and sampled at the specified OD.



For 1-3 L flasks

OD-Monitor B&L connected to 1 set of ODSensor-L

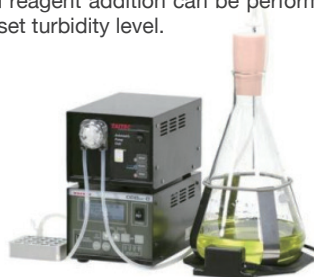


## Reduction of manual background

It reduces the background caused by sampling in large Erlenmeyer flasks, which are inconvenient and time-consuming to handle. By keeping the cells out of the flask chamber, it is possible to reduce stress on the cells during culture.

## Released from the cumbersome turbidity measurement

Combined with the optional automatic pump unit [APU-01], sampling and reagent addition can be performed automatically according to a preset turbidity level.



If the pump is set to the discharge side and the sample is received in a centrifuge tube, it is possible to sample at the specified OD value.

Model	OD-Monitor B&L
Measurement method/range	Light transmission/Reflected light, 0.00 to 9.99 (OD <sub>600</sub> )
Vessel and Fluid volume	Vessel: Glass Erlenmeyer flask Size: 1/2/3 L, Fluid volume: 350/700/1000 mL
Shaking method	Orbital shaking
Shaking conditions	100 to 250 r/min (Shaking width 25/50 mm)
Measurement intervals/channel	1/5/10/30/60/120/240 min, 1 to 4 (B&L) (*)
Ambient temp. range	+15°C to +50°C
Other functions	Alarm for specific value at OD, Transformation to Spectrophotometer in measurement value, USB flash drive (CSV file), Operation for pump unit (B&L) when above specified OD value
Weight	1.9 kg (BoxB) 0.4 kg (Sensor-L)
Power supply	AC 100 V–240 V/1 A (universal power supply)
Standard accessories for ODBox	Flat cable (2 m) *For A&S × 1 pc, Power cable × 1 pc
Standard accessories for ODSensor	Vibration absorbing pad of Flask (large and small) × 1 pc, Flat cable (0.5 m) × 1 pc

(\*) B&L equipped with 1 channel per 1 set of ODSensor. Some number of ODSensor should be required depending on the number of samples. C&T equipped with 8 channels per 1 set of ODSensor can be connected with only 1 set of ODBox. ODSensor with maximum number of channels cannot be put in Bioshaker depending on its size. Ask us for details.

Product Name/Model	Remarks
<b>Universal shaking platform MT-4030</b>	Required for using BR-40/41/42/43 series with OD-Monitor series and Turbidostat system
<b>Auto pump unit APU-01</b>	For B&L. Starts to operate when a preset OD value is reached in ODBox-B. It can be used for automatically addition of IPTG and sampling. Manual operation can also be performed.

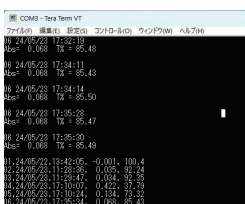
# Simplified OD monitor | Miniphoto 620



Example of connecting to a PC via a cable (sold separately) ▶



With measurement wavelength at 620 nm, the transmissivity and absorbance can be easily measured only with this product. This is small and lightweight and can be used with four commercially available AA batteries. Glass test tubes of φ 16.0 to 18 mm can be measured. Data of up to 99 samples can be stored in the unit, and the external output of data to a PC is also available (specified cable sold separately required).



Model	Miniphoto 620
Measurement range/display	<b>Absorbance OD 0.01 to 2.00 ABS, transmissivity 1.0 to 100 %T</b> Simultaneous display of transmissivity/absorbance
Light source, measurement wavelength	LED light source, 620 nm
Other functions	Data storage of 99 samples (measurement number, year/month/day, day/hour/minute/second), USB-PC connection (specified cable sold separately)
External dimensions/weight	95 × 158 × 47 mm, approx. 405 g (batteries included: approx. 505 g)
Power supply	AC 100 V external power supply adapter/ four AA batteries (Use commercially available batteries.)
Standard accessories	Lightproof cap × 1, AC adapter × 1

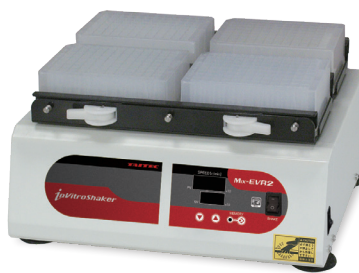
Product Name	Remarks
<b>Miniphoto 620 PC cable</b>	USB cable for exporting measurement data from the Miniphoto 620 to a PC.

## Bench-top shakers | In vitro shaker 2 Series

A new series of the in vitro shaker, a compact shaker that is easy to use inside refrigerators and incubators, has been released! Digital display and settings are now standard features. Options for adding a "Timer operation function" and "Transmission output terminal extension" are available.



Shake-LR2  
with Optional shaking platform MT-2030 and Clamp



Mix-EVR2  
4 x Well plates can be mounted in the standard



Wave-PR2  
with sticky sheet

Model	Shake-LR2	Shake-XR2	Mix-VR2	Mix-EVR2	Wave-PR2	Wave-SI 2
Shaking motion	Switchable Reciprocal/Orbital shaking	Swing in figure 8	Orbital shaking	Horizontal eccentric shaking	Wave-shaped shaking	Seesaw shaking
Shaking speed/width (*1)	15 to 160 r/min, 25 mm	15 to 100 r/min, 20 mm (*2)	50 to 500 r/min, 10 mm	250 to 2500 r/min, 2 mm	5 to 50 r/min, 2 to 6°	5 to 50 r/min, 2 to 10°
Platform dimensions	300 x 200 mm		300 x 200 mm	— (*3)	300 x 200 mm	
Ambient temp. range	0°C to 50°C					
Maximum load	Approx. 2 kg (Optional platform and vessel holders are not included)					
Dimensions (W x D x H)	300 x 270 x 152 (H) mm	300 x 235 x 155 (H) mm	300 x 235 x 149 (H) mm	300 x 235 x 152 (H) mm	300 x 235 x 163 (H) mm	300 x 235 x 167 (H) mm
Weight	Approx. 7.8 kg	Approx. 7.7 kg	Approx. 12.2 kg	Approx. 6.5 kg	Approx. 5.1 kg	Approx. 5.5 kg
Power supply	AC 100 V-240 V/0.5 A (universal power supply)					
Standard accessories	—	—	—	4 x Well plates can be mounted in the standard (*4)	1 x Sticky sheet (ST-2030 for SI/PR) (*4)	

(\*1) The maximum value might not be met depending on the optional platforms and vessels. (\*2) One (1) motion per 1 r/min (\*3) Equipped with the platform for 4 pcs of well plate as standard. (\*4) Shaking platform and vessel holder are optional. For details, see the website.

### Examples of optional shaking platforms in combination

For details, see the website.



Spring net shaking platform



Tilted clamps for Centrifuge tubes



Large-sized shaking platform

### Adding optional functions

#### Option ①: Timer operation function

By adding this timer to the shaker, it becomes possible to "stop" and "start" after the set time has elapsed, as well as "repeated stopping and starting (intermittent operation)". When the timer operation function is not used, it can count the time.

#### Option ②: Transmission output terminal extension

Attach a female terminal on the back of the shaker that can be connected to a recorder, etc. From the terminal, the signal 1 to 5 [V] is output, which is corresponding to the speed display of the shaker.



## Medium-sized shakers | NR-30/80

The versatile shaker with simple operation. Switchable Reciproca/Orbital shaking (NR-30), and Swing in figure 8 (NR-80).

Options are compatible with those of medium-sized Bioshaker.

NR-30/80 with Optional shaking platform



### Optional accessories



Spring net shaking platform



Universal shaking platform and Clamps



Sticky sheet shaking platform

Model	NR-30	NR-80
Shaking motion	Switchable Reciprocal/Orbital	Reciprocal/Orbital/Figure 8
Shaking speed	20 to 200 r/min (*1)	
Shaking width	10 to 40 mm, Stepless (Default: 25 mm)	
Platform dimensions and Capacity	400 x 300 mm Erlenmeyer flask 500 mL x 6, 3 L x 2	
Maximum load	Approx. 8 kg (Shaking platform and vessel holders included)	
Dimensions (W x D x H)	455 x 405 x 160 (H) mm (NR-80: 170 (H) mm)	
Weight	Approx. 17 kg	Approx. 18 kg
Power supply	AC 100 V/AC 220-240 V/0.5 A (built-in down transformer)	

(\*1) One motion per 2 r/min in the figure 8.

Product Name / Model	Remarks
Spring net shaking platform MR-4030	φ 16 mm test tubes x 96 (The number is when the Angle rack is tilted 45 °) Disposable Centrifuge tube for 50 mL x 48 (The number is when the Angle rack is tilted 45 °) Erlenmeyer flasks 100 mL x 20, 300 mL x 9, 500 mL x 6, 1 L x 3, 2 L x 2
Universal shaking platform MT-4030	It can hold flasks tightly compared to the Spring shaking platform. Clamps are available as an option.
Sticky sheet shaking platform SR-4030	Flat bottoms such as Erlenmeyer flasks and Petri dishes can be held simply by placing them on the platform. The decrease of an adhesive force by dirt can be recovered by washing with water and drying it. *Max. shaking speed: 100 r/min

## Reciprocal shaker | SR-1D

Compatible with Test tubes and Erlenmeyer flasks.  
Shakes strongly with 50 mm shaking width.



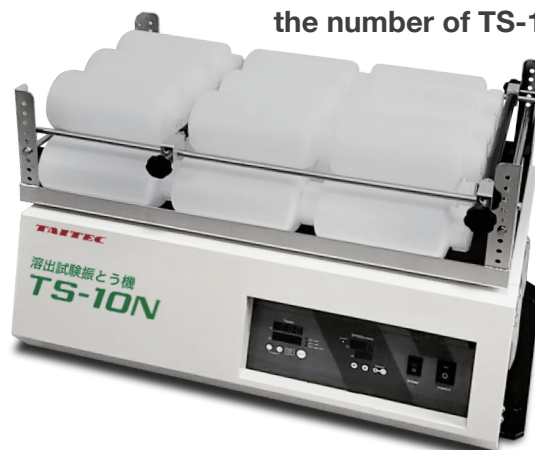
SR-1D with Test tube rack shaking platform (A Shaking platform)

The photo is with an optional shaking rack for the commercial test tube stand.  
Available in a wide range of containers in combination with a variety of optional shaking racks.

Model	SR-1D
Shaking motion	Reciprocal shaking
Shaking speed/amplitude	50 to 250 r/min, 50 mm
Maximum load	Approx. 7 kg (Shaking platform included)
Dimensions (W x D x H)	570 x 435 x 247 (H) mm
Weight/Power supply	Approx. 45 kg, AC 100 V-240 V/1.5 A (universal power supply)

## Elution testing shaker | TS-10N/20N

TS-10N accommodates 10 x 2 L plastic bottle (1/2 volume). TS-20N accommodates double the number of TS-10N.



The photo shows an example of 500 mL wide-mouthed plastic bottle placed horizontally. This is a large-capacity type shaker for mass processing by disposal plastic bottles.

Model	TS-10N	TS-20N
Shaking motion	Reciprocal shaking	
Shaking speed/amplitude	50 to 250 r/min, 45 mm	25 to 200 r/min, 10 to 50 mm, Stepless (Default: 45 mm) <sup>(*)</sup>
Maximum load	Approx. 10 kg	Approx. 20 kg
Dimensions (W x D x H)	740 x 439 x 459 (H) mm	820 x 601 x 591 (H) mm
Weight	Approx. 70 kg	Approx. 100 kg
Power supply	AC 100 V-240 V/1 A (universal power supply)	
Standard accessories	Vessel press bars (long 3/short 3) for TS-10, Adjustment screwdriver for Timer x 1 pc	Vessel press bars (long 4/short 4) for TS-20, Adjustment screwdriver for Timer x 1 pc

(\*) Please ask us to adjust the amplitude.

## e-Bucket series

These CFC-free Minisized Baths can easily heat and cool Microtubes, etc. on the bench top.  
User-oriented Miracle beads bath and aluminum block. WTB can also be used as a water bath.



Model	EIB	ECB	EHB	ETB	EFBN	WTB
Temperature range	3°C (Fixed)	3°C to 20°C (*1)	Around 30°C to 70°C (*1, 2, 3)	3°C to 70°C (*1, 2, 3)	-10°C to 20°C (*4)	4°C to 70°C
Temp. control accuracy	Below ±1°C					±0.1 to 0.2°C
Standard Bath	Miracle beads bath (BMB-17)		Hetero block (BAL-8148)		-	-
Temp. Display	Digital					
Cooling/Heating method	Cooling with Peltier element		Heater	Heating/Cooling with Peltier element	Cooling with Peltier element	Cooling/Heating with Peltier element
Safe devices/ protections	Fuse, Overheat/Overcurrent/Overvoltage protection WTB only: Sample protection (High/Low temp.), Non-volatile memory error, Sensor error, Automatic tuning error, Alarm setting error					
Dimensions (W x D x H)	170 x 240 x 220 (H) mm					240 x 370 x 216 (H) mm (Lid is not included)
Weight	Main unit: Approx. 2.2 kg + Miracle beads bath Approx. 1.8 kg		Main unit: Approx. 2.2 kg + Hetero block Approx. 1.2 kg		Main unit: Approx. 2.2 kg + Aluminium block	Approx. 9 kg
Power supply	AC 100 V-240 V/1 A (universal power supply)					AC 100 V/4 A (Requires a step-down transformer)
Applicable Bath/Block	Miracle beads bath, Hetero block, Dual side block				4 kinds of Block	Miracle beads bath, Hetero block, Dual side block, Deep block *2 pcs can be put in each.

(\*1) The specifications may not be met the ambient temp. above 30°C or below 5°C. (\*2) Miracle beads cannot be stably used over 50°C. The specifications may not be met below 20°C. (\*3) When used as a water bath (eb-ShakerUnit used with) in EHB, the upper limit temp. is up to 50°C and ETB is up to 55°C. (ambient temp. 5°C to 30°C) (\*4) The specifications may not be met the ambient temp. above 35°C or below 5°C

# Strong shaker | SR-2ES/2EW

*Shakes Separatory funnels vertically and powerfully with energy savings. Compatible with other vessels. Low noise with our proprietary "Silent swing mechanism".*



SR-2ES  
Example of using  
Horizontal shaking



SR-2ES  
with Separatory funnel  
shaking platform (Optional)



SR-2EW  
with Separatory funnel  
shaking platform (Optional)

## Features

- Vertical shaking and Horizontal shaking [SR-2ES]
- Dedicated for Vertical shaking, The capacity doubles with SR-2ES [SR-2EW]
- The start time of shaking and the intermittent shaking can be set by the timer

## Applications

- Liquid extraction of analysis samples such as residual pesticides and soil components
- Pretreatment of Solid phase extraction of analytical sample
- Various mixing-stirring, etc.

### Shakeable separatory funnels and vessels

3 types of separatory funnels are available. The holders that can fit to each is prepared. Erlenmeyer flasks, Centrifuge tubes, and Polyethylene bottles (Ask us for details) can be shaken with it.

Standard  
(Round shape)

Round double  
pipe

Squibb type

The round shape is the most common as a separation funnel. "Round double pipe" is one type of round shape. Squibb type in which the liquid can be mixed intensely more compared to a round shape.

Round shape  
separatory funnel

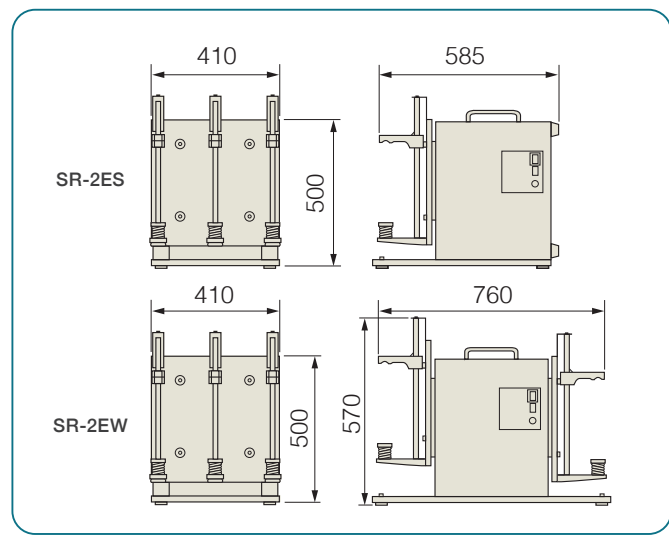
Squibb type  
separatory funnel

Erlenmeyer flasks

### Transmission output is possible

The available speed signal output from 4 to 20 mA makes it possible to connect to a recorder, etc. It is recommended for customers who need data in the working process.

### Dimensions



### Advanced user-friendly 3 kinds of digital timers

Equipped "ON-END timer" which ends the shaking time at the set time, "OFF-ON timer" which sets the starting time of the shaking and "OFF-ON-END timer" which sets the start and end time of the shaking. Both setting time and elapsed time are displayed during the timer operation and you can pause the shaking by switching off the shaking. When the timer is not being used, the elapsed time is displayed, and you can always check shaking time.

Model	SR-2ES	SR-2EW
Shaking motion	Reciprocal (Vertical and Horizontal)	Reciprocal (Vertical)
Shaking speed	Vertical: 100 to 300 r/min (*1) Horizontal: 50 to 300 r/min	50 to 300 r/min (*2)
Amplitude	40 mm	
Capacity	3 pcs of Up to 1 L Separatory funnel (SR-2EW 6 pcs) (*3)	
Maximum load	Approx. 7.5 kg (Shaking platform is included)	One side: Approx. 7.5 kg (Shaking platform is included)
Timer	Timer function (setting/display: 1 min to 99 h 59 min) * When the timer function is not being used, it can count the time. •ON-END •OFF-ON •OFF-ON-END Integral timer 0 to 99 h 59 min or after: 100 h to 9999 h	
Speed display	Digital	
Safety devices/functions	Motor protection circuit at overload, Fuse	
Dimensions (W x D x H)	410 x 585 x 500 mm	410 x 760 x 500 mm
Weight	Approx. 49 kg	Approx. 57 kg
Power supply	AC 100 V/AC 220 V-240 V/1.2 A (built-in down transformer)	

(\*1) May not be smoothly shaken at 50 to 99 r/min. (\*2) The shaker works when the plat-forms are mounted on both side but while not work when the platform is mounted on only one side. (\*3) The shaking platform is sold separately. The vessels that can be used for vertical shaking and horizontal shaking differ (the separatory funnel is for vertical shaking only). For details, the capacity, and other shaking platforms, please see the right page.

## Platforms for SR-2 series

### Enables installation in a stable condition

It is easy to change and move the installation location. When in use, the adjusters can be used to hold the shaker securely in place. Recommended for customers who cannot install directly on the floor for operational or administrative reasons.


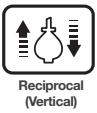



Product Name/Model	Platform dedicated to SR-1/2S (*)	Platform dedicated to SR-2W SR-FK800
Dimension	600 x 450 x 408 (H) mm	800 x 450 x 408 (H) mm

(\*) Up to 200 r/min in Horizontal shaking.


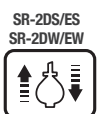

# Optional accessories and Capacity of Vessels

## Separatory funnel shaking platform (For Standard type 1 L /Squibb type 1 L × 3)

Model	Capacity of Vessel	Applicable models
<b>HE-3 for SR-2</b> 	Standard (Round shape) 50 mL-1 L: 3 2 L: 2 (*)	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
	Squibb type 50 mL-1 L: 3	
<b>HE-3W for SR-2</b> 	Standard (Round shape) Round double pipe 200 mL-1 L: 3 2 L: 2 (*)	
	Squibb type Round double pipe 200 mL-1 L: 3	

(\*) Up to 1 pc for liquid 1 L and up to 3 pcs for less than liquid 500 mL can be at-tached when 2 L is used.  
 •In SR-2EW, mount and use one separatory funnel shaking platform of the same type.  
 •The number of racks is limited by size and weight of separatory funnel, e.g. HE-3 equipped with 3 holders whereas up to 2 pcs be limitedly attached when 2 L round type separatory funnel. Be sure not attach the separatory funnel to the center holder.

## Separatory funnel shaking platform (For Standard type 200 mL/Squibb type 300 mL × 5)




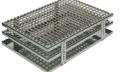
Model	Capacity of Vessel	Applicable models
<b>HE-5 for SR-2</b> 	Standard (Round shape) 50 mL-200 mL: 5 300 mL-500 mL: 3 1 L, 2 L (*): 2 (*)	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
	Squibb type 50 mL-300 mL: 5 500 mL: 3 1 L: 2 (*)	
<b>HE-5W for SR-2</b> 	Standard (Round shape) Round double pipe 200 mL: 5 300 mL-500mL: 3 1 L, 2 L (*): 2 (*)	
	Squibb type Round double pipe 200 mL-300 mL: 5 500 mL: 3 1 L: 2 (*)	

(\*) Up to 1 pc for liquid 1 L and up to 2 pcs for less than liquid 500 mL can be at-tached when 2 L is used.  
 •In SR-2EW, mount and use one separatory funnel shaking platform of the same type.


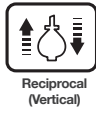
## Holders

Model	Capacity of Vessel/Weight
<b>Holders for HE-3/HE-5</b>	Standard (Round shape) 100 mL-2 L Squibb type 100 mL-1 L Weight: Approx. 0.8 kg
<b>Holders for HE-3W/HE-5W</b>	Standard (Round shape) 200 mL-2 L Squibb type 200 mL-1 L Weight: Approx. 0.8 kg


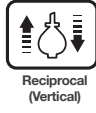

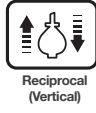

## Shaking platform for Erlenmeyer flasks and other vessels

Model	Capacity of Vessel/Dimension/Weight	Applicable models
<b>Test tube rack shaking platform A shaking platform for SR-2</b> 	Stoppered test tube stand (φ 18 mm 50 pcs) can be placed 2 sets horizontally. Weight: Approx. 2.6 kg Dimension: 410 × 300 × 100 (H) mm	 SR-2DS/ES SR-2DW/EW Reciprocal (Horizontal)
<b>Erlenmeyer flask shaking platform B shaking platform for SR-2</b> 	50 mL: 30 100 mL: 20 200-300 mL: 12 500 mL: 6 1 L: 4 Weight: Approx. 2.6 kg Dimension: 410 × 300 × 100 (H) mm	
<b>Spring net shaking platform E shaking platform for SR-2</b> 	This enables various shaped vessels to be fixed on the platform. Horizontal shaking in SR-2ES Below 160 r/min Weight: Approx. 2.5 kg Dimension: 410 × 300 × 100 (H) mm	


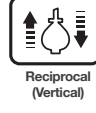
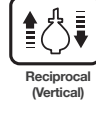
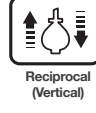
## Test tube/Centrifuge tube shaking platform (For HE-3)

Model	Capacity of Vessel/Dimension/Weight	Applicable models
<b>Test tube shaking platform C half shaking platform for SR-2</b> 	Up to 10 pcs of Stoppered test tube and Centrifuge tube (φ 10 to 37 mm × 100 to 120 Lmm in length) can be set. Weight: Approx. 2.4 kg Dimension: 408 × 250 mm *HE-3 is required for installation (HE-5 Unusable)	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)

## Adapters (For HE-3, HE-5)



Model	Capacity of Vessel	Applicable models
<b>Adapter for Flask</b> 	φ 10-35 mm Up to 300 mL Erlenmeyer flask Up to 200 mL Messzylinder	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
<b>B adapter for Flask</b> 	φ 38-55 mm Plastic bottle GL-45 screw cap bottle	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
<b>Plastic bottle adapter (for SR-2)</b> 	φ 55-106 mm For 2 L and 3 L Plastic bottle	Except HE-3W HE-5W

## Separatory funnel shaking platform (For Squibb type 2 L)


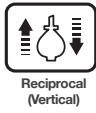


Model	Capacity of Vessel/Weight	Applicable models
<b>FU-2S</b> 	Standard (Round shape) 100 mL-2 L: 2 Squibb type 100 mL-2 L: 2 Weight: Approx. 4 kg	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
<b>FU-3S</b>	Standard (Round shape) 100 mL-2 L: 3 Squibb type 2 L: 2 Weight: Approx. 5 kg	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
<b>Holders for FU-2S/FU-3S</b>	Capacity of Vessel: See the above for details. Weight: 1.1 kg	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)

•Use the product so that the combined load with the container does not exceed 7.5 kg.

## Separatory funnel shaking platform (For Standard type 3 L)

Model	Capacity of Vessel/Dimension/Weight	Applicable models
<b>FU-1R</b>	Standard (Round shape) 100 mL-3 L: 1 Squibb type 100 mL-2 L: 1 Weight: Approx. 5 kg	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
<b>Holders for FU-1R</b>	Capacity of Vessel: See the above for details. Weight: 1.7 kg	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)

## Test tube/Centrifuge tube shaking platform

Model	Capacity of Vessel/Dimension/Weight	Applicable models
<b>Test tube shaking platform C shaking platform for SR-2</b> 	φ 10 to 35 mm Stoppered test tube can be set. Test tube length 45 mm to 145 mm, Max. weight of vessels 100 g, Max. 20 pcs (*) Horizontal shaking in SR-2ES Vertical shaking in SR-2EW Weight: Approx. 4.2 kg Dimension: 465 × 408 mm	 SR-2DS/ES SR-2DW/EW Reciprocal (Vertical)
	Test tube length 150 mm to 265 mm, Max. weight of vessels 250 g, Max. 10 pcs (*) Up to 200 r/min. Horizontal shaking in SR-2ES Below 200 r/min Weight: Approx. 4.2 kg Dimension: 465 × 408 mm	 SR-2DS/ES SR-2DW/EW Reciprocal (Horizontal)

Dry Thermo Unit | **DTU-Mini/CTU-Mini**  
Cool Thermo Unit

Fast temp. transition with thin block. Cooled-type CTU with CFC-free.



DTU-Mini

CTU-Mini

CTU/DTU-mini is for 1 pc optional "Half block". It can hold up to 48 tubes of 0.1/0.2 mL PCR tubes.

CTU/DTU-R is for 2 pcs optional "Half block" or 1 pc "Full block". It can hold up to 96 tubes of 0.1/0.2 mL PCR tubes.

Dry Thermo Unit | **DTU-R/CTU-R**  
Cool Thermo Unit

This aluminum block Bath heats and cools Microtubes, Centrifuge tubes, etc. Fast-temp. transition with thin block.



DTU-R

DTU-R and CTU-R with optional Stack Case

Model	DTU-Mini	CTU-Mini	DTU-R	CTU-R
Temperature range (*1)	+ 3°C above Room temperature to + 95°C above Room temperature	+ 30°C below Room temperature to + 85°C above Room temperature	+ 5°C above Room temperature to + 105°C (*2)	0°C to +105°C (*3)
Temp. control accuracy (*1)	±0.1°C to ±0.2°C			
Capacity	Half block × 1 pc		Half block × 2 pcs or Full block × 1 pc	
Heating/Cooling method	Heater, Heat dissipation by fan		Heater, Heat dissipation by fan	Peltier element
Dimensions (W × D × H)/Weight	128 × 215 × 190 mm, Approx. 1.6 kg (Block is not included)		244 × 285 × 180 mm, Approx. 6 kg/5.5 kg (DTU-R/CTU-R) (Block is not included)	
Power supply	AC 100 V~240 V/1.5 A (universal power supply)		AC 100 to 240 V	
Standard accessories	Block extraction hook handle × 1 pc (Blocks are sold separately)		Power cord, Hook handle, Fuse (built-in fuse holder)	

(\*1) The specifications may not be met when the hood is open and/or ambient 30°C. (\*2) The maximum operating temperature is 80°C above Room temperature. (\*3) The lowest operating temperature is 30°C below Room temperature when cooling and the maximum is 80°C above Room temperature.

**Optional parts: Half block for Microtubes**

Model	Capacity	Hole depth	Dimensions/Remarks
B-0648	0.1/0.2 mL × 48 pcs (8-Tube Strip)	15 mm	67.5 × 93 × 35 (H) mm (B-1515: 50 (H) mm) Some tubes may not be closely contacted to the holes depending on those sizes. Self-stand tubes cannot be used.
B-0835	0.5 mL × 35 pcs	24.5 mm	
B-1120A	1.5 mL × 20 pcs	34 mm	
B-1120B	2.0 mL × 20 pcs	34 mm	
B-1515	5.0 mL × 6 pcs + 1.5 mL × 8 pcs	48 mm 34 mm	

**Full block for Microtubes/PCR plate (for DTU/CTU-R)**

Model	Capacity	Hole depth	Dimensions
B-1140	1.5 mL × 40 pcs	34 mm	135.5 × 93 × 35 (H) mm
B-0696 (*1)	0.1/0.2 mL × 96 pcs or PCR plate × 1 pc	14 mm	135.5 × 93 × 35.5 (H) mm

(\*1) Some PCR plates cannot be used. Thus, check if it can be used in advance.

**Half block for cryotube and self-standing microtube**

The hole shape is designed with an optimal bottom configuration for cryotubes and self-standing microtubes. Please choose the most suitable one from the three different hole diameters available in the block for use.



Model	Capacity	Dimensions
B-1312M	Φ 12.6 mm, Φ 12.8 mm, Φ 13 mm × 4 pcs each	67.5 × 93 × 35 (H) mm

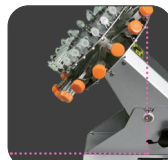
We offer a variety of blocks for vials, disposable centrifuge tubes, and more. For more information, please visit our website.

**Rotator | RT-025R / 050R**

Inverting stir of Microtubes and centrifuge tubes. Rotates test tubes and vials. Suitable for ImmunoPrecipitation and cultivation in a low temperature room and incubator. The non-direct drive allows stable rotation from low to high speed.



Usage example of a RT-025R vessel holder (option)



You can fix the angle freely between 0° and 90°.



The rotator has a safety function to stop the rotation when it cannot keep itself horizontal.



◀ Example of use for the Stack Case SKD-2. The SKD-2, dedicated rack for DTU/CTU-R, can also accommodate a rotator on top.

**Optional accessory: vessel holder for RT-025R/050R**



Model	RT-025R	RT-050R
Rotational speed	2 to 25 r/min	5 to 50 r/min
Ambient temp. range	+4°C to +40°C	
Drive system	Non-direct drive	
Safety devices	Fuse (3 A), overvoltage/overcurrent protection, fall stop function	
Dimensions (W × D × H)	200 × 265 × 266 (H) mm	
Weight	Approx. 3.5 kg	
Power supply	AC 100 V~240 V	
Standard accessories	Fuse (with built-in Fuse Holder) × 1 pc, Power cord × 1 pc	

Model	Vessels/Capacity/Remarks	Number of holders fixed
SE-0108R	1.5/2.0 mL microtube × 24 [inversion stirring]	Up to 2 pieces
SE-1800R	15 mL tube (φ 17 × 120 Lmm) × 16 [inversion stirring]	
SE-3500R	50 mL tube (φ 29 × 115 Lmm) × 8 [inversion stirring]	
SA-1811R	φ 18 mm × 110 mm test tube × 41 [rotation]	1 piece
SD-2550R	φ 25 mm × 110 mm test tube × 24 [rotation]	

# Large-sized CO<sub>2</sub> Incubator MG-2000C

Available for CF40/CellSTACK® 4x2. Easy to put in and out by exclusive wagon.



## Features

- Most interior/exterior are made of anti-corrosive SUS
- Comply with FDA 21CFR Part11

## Applications

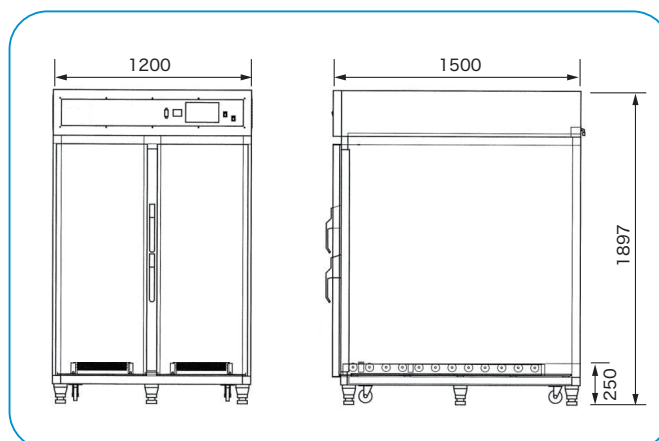
- Mass culture of adhesive cells
- Production for antibody or protein preparation

### ■ About the wagon for stack plates



The wagon can be equipped 4 × 40 layers stack plates. The upper wagon slides into the chamber. MG-2000C can accommodate 2 wagons, a total of 8 stack plates.

### ■ Outline drawing Model



Model	MG-2000C
Chamber size/M3	1120x1410x1343Hmm, approx..1,900L
Outside dimension	1200x1500x1897Hmm
Interior/exterior	SUS304
Temp.range/Accuracy	Temp. range: Ambient+5°C – +45°C Accuracy: ±0.5°C (at 37°C)
Heating method	Air jacket (4 sides inside chamber)
CO <sub>2</sub> sensor	IR
CO <sub>2</sub> range	0.0 – 20.0% (by 0.1%)
Air circulation	By inside fan (equipped HEPA filter)
Operation	LCD touch panel
Display	Temp., CO <sub>2</sub> (by LCD panel)
Safety device/function	Safety device: Cut off heater/gas and alarms by buzzer when the door opens and closes. Safety functions: High temp./Low temp., CO <sub>2</sub> concentration, door open/close (alarmed by buzzer and digital output)
Analog output (4 ~ 20mA)	Temperature, CO <sub>2</sub> concentration
Digital output	Temp. error, CO <sub>2</sub> error, Opened door error
External communication	Modbus RS-485
Other functions	LED inside, Door lock (by key attached), Logging function, Operator authorization security
Power supply	AC220V, 7A
Required gas supply	CO <sub>2</sub> gas

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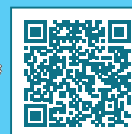
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October 2025