

# For cell culture related products

CO <sub>2</sub> incubator/Multi-gas incubator		
Prescyto MG-71C/MG-71M		040
Prescyto MG-71C-A/MG-71M-A		041
Related products of CO2 incubator/Mult	i-gas incubator	
Oxygen concentration program unit MG	-PU01	042
Nitrogen gas Generator N2 GENESIS 20	0	043
Optional tank for Nitrogen gas Generato	or GST-0205M	043
UV Sterilization unit ISU-UV		043
Resined inner door equipped with Glove	es MG-GD	043
Gas changer MG-GCH02		044
Incubator shaker for Mammalian cells		
Customized Bioshaker CO <sub>2</sub> -BR shaker		046
Gas controller CO-GAS-1000/3000		046
Gas controller Multi-GAS-3000		046

# Prescyto MG-71C/71M

Multi-gas incubator equipped with a new function "Low oxygen booster" makes Hypoxia conditions back quickly after door open and close (4-times faster than the conventional one. \*Pat. pend).

Shaker for High humidity "CS-LR" that can be inside Chamber --> P.052 Optional accessories and Related products --> P.042-044



#### **Features**

- •Low oxygen booster makes Hypoxia conditions back quickly (71M)
- Oxygen sensor simple checking function (71M)
- Equipped with Connection holes to Chamber
- Stackable to 2 levels

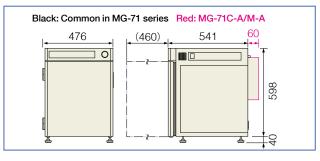
#### **Applications**

- Hypoxic culture of Stem cells and Tumor cells (71M)
- Cultivation of Obligatory anaerobe (71M)
- Cultivation of Adherent cells of such as mammals

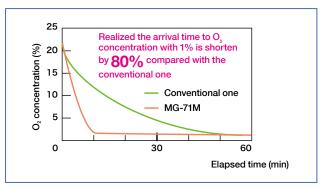
#### Antibacterial test results on the shelf

Dilution		10time	s → 10	<sup>7</sup> times		
Usual					$\bigcirc$	
Antibacterial						

#### **External dimensions**



The arrival time to 0, concentration with 1% by Low oxygen booster



Multi-gas incubator equipped with a new function "Low oxygen booster (MG-71M)" makes Hypoxia conditions back quickly after increasing oxygen concentration by door open and close. Realized the arrival time to O2 concentration with 1% is shorten by 80% compared with the conventional one.

Product name	CO <sub>2</sub> incubator Multi-gas incubator		
Model	MG-71C MG-71M		
Temperature range/accuracy	5°C above RT to 50°C, ±0.2°C (*1)		
Heating method	Air Jacket type (6 Heaters)		
Gas control range	CO <sub>2</sub> : Atmospheric concentration to 20% (Set in 0.1%) (*2)	CO <sub>2</sub> : Atmospheric concentration to 20% (Set in 0.1%) (*2) O <sub>2</sub> : 1% to 20% (Set in 0.1%) (*3)	
Ambient temp. range	15°C to 35°C		
Humidification method	Natural evaporation by the Humidity pan		
Inner Dimensions/ Chamber volume	Chamber: W 354 x D 425 x H 418mm, Approx. 53L		
Example of Capacity	Per shelf: 49 x Petri Dish φ35m, 6 x Well plate, 14 x 25cm² of TC flask		
Other functions	2 x Connection holes (inner dia. φ30mm), Outlet for external supply (Max. 3A), RS-232C terminal, Low oxygen booster (71M), Oxygen sensor simple checking function (71M)		
Gas connection port	Barbed nozzle φ9mm (Replaceable: 1/4Rc)		
Dimensions/Weight	W 476 x D 578 x H 638mm, Approx. 51kg		
Standard accessories	3 x Shelf (Antibacterial treatment (*4), 6 x Shelf support, 1 x Humidity pan, 1 x Gas supply tube (5m), 2 x Hose band 3 x Shelf (Antibacterial treatment (*4), 6 x Shelf support, 1 x Humidity pan, 1 x Gas supply tube (10m), 4 x Hose band		
Power supply	AC100V/3.5A (Max. 6.5A when using Outlet for external supply)		

(\*1)The value at the ambient temperature 25°C and operation temperature 37°C/CO<sub>2</sub> 5%. (\*2)Measured by Infrared type CO<sub>3</sub> sensor. (\*3)Measured by Zirconia type oxygen sen (\*4)Up to Six shelves can be stored. •"Multi-gas" is a specification that controls CO<sub>2</sub> and O<sub>2</sub> Concentration by connecting CO<sub>2</sub> Gus and N<sub>2</sub> Gus or O<sub>2</sub> Gus.

## Prescyto MG-71C-A/71M-A

Our proprietary technology "Active Gus Ventilation" CO2/Multi-gas incubator. Optimal for Large scale and Hypoxic culture with Multilayer culture plates

Shaker for High humidity "CS-LR" that can be inside Chamber --> P.052 Optional accessories and Related products --> P.042-044

#### **Features**

- Excellent Culture efficiency by our proprietary "Active Gus Ventilation"
- Switches Gus cylinders automatically with Optional "MG-GCH02"
- Stackable to 2 levels

#### **Applications**

- Large scale of iPS cell culture with Multilayer plates
- Large scale and Hypoxic culture of adherent cells with Multilayer plate [71M-A]
- Hypoxic culture of floating cells with Erlenmeyer flasks [71M-A]



MG-71M-A with Multilayer culture plate

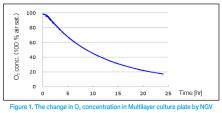
#### Our proprietary technology "Active Gus Ventilation (PAT.P)" Excellent gas replacement efficiency

Forced aeration (AGV = Active Gas Ventilation) is a method in which the gas is directly fed into the culture plate. As the method is better than that of normal gas replacement in efficiency it shoud be optimum for Low-oxygenation and Large scall culture of adhesion cells with Multilayer culture plate. Large scall and Hypoxic culture of floating cells can be also done (Shaker and Stirrer required). Thermo Fisher Scientific Cell Factory (AGV type: Up to 10 layers) can be used as Multilayer culture plate.

#### The effect of Active Gus Ventilation in Large scale culture with Multilayer culture plate.

The differences between Normal Gus Ventilation and Active Gus Ventilation visualized in Multilayer culture plate as well as compared to the culture results.

Figure 1 and 2 show the change in O<sub>2</sub> concentration in Multilayer culture plate. The change was quite slow in which O<sub>2</sub> concentration reached only around 20% in 1 day. In contrast, the change in O<sub>2</sub> concentration by AGV in Figures 3 and 4 in which it made any layers Hypoxic conditions within 4 hours.



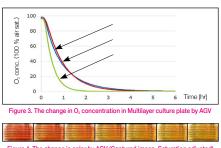


Figure 2. 1	The change	in color by	NGV (Capt	ured image	Saturation	adjusted)
		-			-	

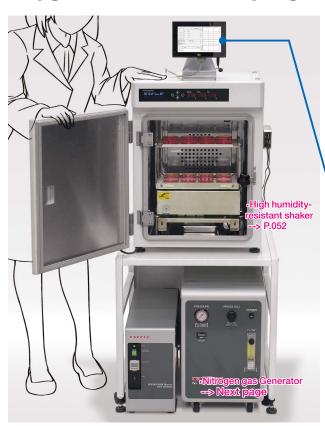
Product name	Active Gus Ventilation CO <sub>2</sub> incubator Active Gus Ventilation Multi-gas incubator			
Model	MG-71C-A MG-71M-A			
Temperature range/accuracy	5°C above RT to 50°C, ±0.2°C (*1)	·		
Heating method	Air Jacket type (6 Heaters)			
Gas control range	CO <sub>2</sub> : 3% to 10% (Set in 0.1%) (*2)	CO <sub>2</sub> : 3% to 10%, Set in 0.1%) (*2) O <sub>2</sub> : 1% to 25% (Set in 0.1%) (*3)		
Gas flow rate control range	20 to 500mL/min (set by 1mL/min)			
Ambient temp. range	15°C to 35°C			
Inner Dimentions/ Chamber volume	Chamber: W 354 x D 425 x H 418mm, Approx. 69L			
Example of Capacity	1 x Up to 10 layers of Multilayer culture plate, 6 x Erlenmeyer flask 250mL			
Other functions	2 x Connection holes (inner dia. φ30mm), Outlet for external supply (Max. 3/	2 x Connection holes (inner dia. \$30mm), Outlet for external supply (Max. 3A), RS-232C terminal		
Gas connection port	Barbed nozzle φ9mm (Replaceable: 1/4Rc)			
Dimensions/Weight	W 476 x D 578 x H 638mm, Approx. 51kg			
Standard accessories	1 x Supply tube for Culture (5m), 1 x Gas supply tube (5m), 2 x Hose band 1 x Supply tube for Culture (5m), 1 x Gas supply tube (10m), 4 x Hose band			
Power supply	AC100V/3.5A (Max. 6.5A when using Outlet for external supply used)			

<sup>(\*1)</sup>The value at the ambient temperature 25°C and operation temperature 37°C/CO, 5%. (\*2)Measured by Infrared type CO<sub>2</sub> sensor. (\*3)Measured by Zirconia type oxygen sensor.

•\*Multi-gas" is a specification that controls CO<sub>2</sub> and O<sub>2</sub> Concentration by connecting CO<sub>2</sub> Gus and N<sub>2</sub> Gus or O<sub>2</sub> Gus.

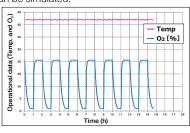
# USB memory.

# **Oxygen concentration program unit MG-PU01**



Changes oxygen concentration according to the duration.

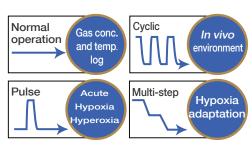
Oxygen concentration program unit can be connect to Multi-gas incubator MG-71M to change oxygen concentration inside the chamber. The change of blood flow and oxygen of such as inside a tumor can be simulated.



Experimental

#### The pattern of oxygen concentration change in high flexibility.

The pattern of oxygen concentration changes can be created with high flexibility. Not only periodical hypoxic condition but also multi-step change and repetition number can be set.



#### As a Data logger for Temp. and Gas concentration inside Chamber.

The temperature, the concentration of O2 and CO2 inside MG-71M chamber can be logged at 1 minute intervals and its data written in Enables for Various patterns of oxygen concentration changed by connecting to Multi-gas incubator MG-71M!

Multi-gas incubator MG-71M --> P.040

#### **Features and Applications**

- Rreproduction In vivo environment by changing oxygen
- Recording of Gas concentration and temperature

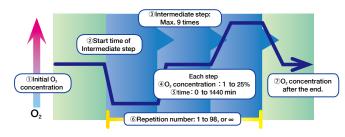


Operation with Touch panel

Model	MG-PU01
Applicable model	MG-71M
Configuration	Touch panel PC (Buil-in Control software), Connection cable, AC adapter, Power cable, Stylus pen
System requirements	MG-71M, N $_2$ /CO $_2$ Gas (O $_2$ gus not required if no Step in which O $_2$ concentration is boosted), AC100V/Approx. 1A

	Program specifications
Protocol setting	①Initial $O_2$ concentration ③Intermediate step: Max. 9 times $\bigcirc O_2$ concentration after the end. Up to 5 programs can be saved and invoked.
Step setting	②O₂ concentration and ⑤Connection time are set as 1 step.
O <sub>2</sub> concentration setting	1 to 25%, Set in 0.1%
Connection time setting	0 to 1440 min (24 hours), Set in 1 min
Repetition setting	"(6) Repetition number: 1 to 98 arbitrarily set" in "Intermediate step: Max. 9 times". Setting "1" makes each step only one time. Entering "0" makes Initial $\rm O_2$ concentration kept.
Start time setting	②Start time of Intermediate step or Immediately after started
Data log	The temperature, the concentration of O <sub>2</sub> and CO <sub>2</sub> inside MG-71M chamber can be logged at 1 minute intervals and its data written in USB memory.

#### Schematic diagram



Reference performance			
O <sub>2</sub> Concentration change range	1% to approx. 20.9% (Atmospheric concentration)		
O <sub>2</sub> control accuracy	Conformed to MG-71M accuracy (0.2%)		
O <sub>2</sub> rise speed	Depends on the supply flow rate to MG-71M, 1%→20%: Around 5 min (When O₂ Gus cylinder used)		
O <sub>2</sub> drop speed	Depends on the supply flow rate to MG-71M, 20%→1%: Within 15 min (When N, Gus cylinder used) 60 to 90 min (When N, GENESIS uded)		

# Nitrogen gas Generator N, GENESIS 200/Optional tank for Nitrogen gas Generator GST-0205M

Up to 99.9% Nitrogen gas from atmosphere can be concentrated and supplied to the equipment. The frequencies of maintenance can be reduced by apporx 3 times by using together with Optional tank.

"Evaporation head EN1 series" that the solvent can be concentrated to dryness by spraying the nitrogen gas --> P.103

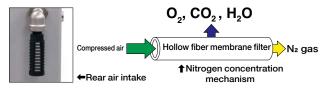
#### **Features and Applications**

- Nitrogen gas in atmosphere can be concentrated and supplied to the equipment
- Supplyies Nitrogen gas to MG-71M/M-A

#### Up to 99.9% nitrogen gas in atmosphere can be concentrated (N<sub>2</sub> GENESIS 200)

Nitrogen gas in atmosphere can be concentrated and supplied to the equipment. Only nitrogen is separated and concentrated by passing it through a filter made of hollow fiber membrane. Up to 99.9% of Nitrogen gas can be supplied while it variers depending on the supplied flow rate.

This makes the gus cylinder not required that makes you free from care of the remaining gas amount.



#### Cost-saving optional tank for GST-0205M

GENESIS Saver GST-0205M is for Nitrogen gas Generator  $N_{\scriptscriptstyle 2}$ GENESIS 200. Equipped with a small pressure vessel that can store nitrogen gas generated from N2 GENESIS 200. It can stop the operation of N<sub>2</sub> GENESIS 200 while using stored nitrogen gas. The reduction of operation time for N<sub>2</sub> GENESIS 200 makes the frequencies of maintenance, the power consumption and the operating noise reduced that leads to recoup an initial investment as a Cost saving.



Optional tank for Nitrogen gas Generator

Model	N <sub>2</sub> GENESIS 200		
Supply pressure/Flow rate/Concentration	Max. 0.5Mpa, 99.9% at 1L/min, 99.5% at 3L/min		
Connection dia./ Dimensions/Weight	ф6mm (Pisco tube), W 300 x D 526 x H 481mm, Approx. 35kg		
Power supply	AC100V/7.5A		
Standard accessories	1 x Spare Air filter, 1 x Pisco tube (ф 6mm x 5m)		

- In using together with Nitrogen sprayer (page103), the number of spray nozzles should be within 12.
   Required a convert nozzle when connecting to MG-71 series.
   The clogging of Filter and the deterioration of Compressor lead to the decline of Supply pressure and Nitrogen gas concentration; Filter should be The maintenance and replacement of Filter depending on their condition should be recommended. Since Compressor likely deteriorated regardless used or not it should be maintened one time per year for frequent use and one time per 2 years to 3 years for even no use

Produt Name/Model	GENESIS	Saver	GST-0205M
-------------------	---------	-------	-----------

•The convert nozzle to connect to MG series comes with

#### **UV Sterilization unit**

Suitable to sterilize the side, the upper and the lower in the chamber that not treated with antibacterial treatment. The sterilization effect in the UV irradiation range are that E-coli is 99.9% and Fungus is 97.99% in the irradiation for 30 minutes. Put the lamp part in the chamber by timer operation for use.



#### **Resined inner door equipped with Gloves**

It allows to perform the light work with gloves in the chamber while the gas concentration keeped. The Resined inner door can be exchanged from the standard inner door of MG-71 series. Two shelves (316 x 150 x 10Hmm) with the shorter depth than that of standard of MG-71 series come with to make it easy to work in the cabinet.



Model MG-GD

## **Gas changer MG-GCH02**

Automatic switching before the gas cylinder connected to the CO<sub>2</sub> incubator empty. Optimal for long-term culture experiments in which the gas constantly supplied.

CO2 incubator/Multi-gas incubator -> P.040-041



#### **Features**

- Gas pressure displayed digitally
- Sets gas pressure of another one be switched



#### Gas pressure displayed digitally

Gas pressure of two cylinders displayed in real time respectively.

#### **Usage of Gas changer**

- ①Connect 2 pcs of gas cylinder to Gas changer
- 2) Automatic switching to the another gas cylinder when the one gas cylinder empty.
- 3 Alarm lamp lights up when the pressure of cylinder lower than the set pressure (The lamp blinks when the gas pressure not applied).
- PReplace the empty cylinder and connect new one to Gas changer

Model	MG-GCH02
Usage gas	CO <sub>2</sub> /N <sub>2</sub> (Customizable for O <sub>2</sub> )
Gas pressure range	0 to 0.2Mpa
Gus connection port	Barbed nozzle φ10.5mm (Replaceable: 1/4Rc)
Alarm functions	Red LED display, Buzzer
External output	Relay contact output, analog output, RS232C
Dimensions/Weight	W 200 x D 245 (Nozzles included) x H 90mm, Approx. 1.7kg
Power supply/consumption	AC100V-1A / 4Wh

#### **Optional Accesories for MG series**

Product Name / Model	Remarks	Applicable models
Regulator ( <b>Φ</b> 9mm barbed nozzle)	1pc required for each cylinder.	All
Shelves for MG	1 x Shelf, 2 x Shelf board, If necessary.	MG-71C, MG-71M
Stackable base for MG	The fixing tool when the stacked in use.	All
Single stand for MG	To utilize the space effectively (shown right)	All (Up to 520 x 500 x 560Hmm of ones can be stored in the space.)
Dual stand for MG	To avoid the placement of bottom of unit on the floor directly.	All
Support rack for Multilayer culture plates	with 1 x supply hose for Multilayer culture vessels	MG-71C-A, MG-71M-A (When using Multilayer culture plates)
Branch unit with mounting brackets for MG	Six branch gas tube, with Connection hose and Mounting brackets	MG-71C-A, MG-71M-A (When using Erlenmeyer flasks, up to 6pcs)
Supply hose for MG	Supply hose for Erlenmeyer flasks, 6pcs	MG-71C-A, MG-71M-A (When using Erlenmeyer flasks, up to 6pcs)
Flask Cap B	For 125/250 mL Disposable flasks, 6pcs	MG-71C-A, MG-71M-A (When using Erlenmeyer flasks, up to 6pcs)
Spinner flask ventilation cap for MG	GL45, for 500mL to 3L, 6pcs	MG-71C-A, MG-71M-A (When using Spinner flasks)
Syringe filter for MG	Required for "Active Gus Ventilation", consumables, 50pcs	for Flask Cap B and Spinner flask ventilation cap (When the standard ones are consumed)
External fan unit for MG	Required when put shaker or stirrer inside the unit. (*)	MG-71C-A, MG-71M-A

(")Not required for Shaker for high humidity CS-LR (page 52) as its heat generation is low.

•Branch unit with mounting brackets for MG/Spinner flask ventilation cap for MG/Flask Cap B are collectively available as "Branch tube set for MG".

# The examples of Customization

#### **Obligatory anaerobe culture system**

Enables for the cultivation of Obligatory anaerobe with multiple test tubes at the same conditions. Shaking culture can be performed while aerating the gas controlled with  $O_2/CO_2$  concentration into each test tube. We have a delivery record for Campylobacter culture.

#### MG-71M-A Obligatory anaerobe culture system

Active gas ventilation  $\mathbf{CO}_2$  incubator  $\mathbf{MG-71M-A}$ 

Oxygen concentration program unit MG-PU01

Shaker for high humidity CS-LR

Spring net shaking platform MR-2030

**Test tube cap** 

Gas supply hose set

**Syringe filter** 



Equipped with Precision regulator to fine-adjust the gas flow.

The gas controlled with  $O_2/CO_2$  concentration is supplied into aseptically into each test tube.





The number of gas tube is up to 12.





### USER'S VOICE

Obligate anaerobes are microorganisms that cannot grow in normal atmospheric concentrations of oxygen.

#### Ultra-hypoxia culture system

This system can be used with  $O_2$  concentration by 0.5%.

Since Hypoxic culture consumes large amount of  $N_2$  gas,  $N_2$  gas cylinder and additionally Nitrogen gas generator " $N_2$  GENESIS 200" and optional tank "GST-0205M" are incorporated in combination in this system for supplying  $N_2$  sufficiently.

 $N_{\rm z}$  gas cylinder works until the preset concentration with the low oxygen booster function of MG-71M will shift it to low oxygen quickly. In the stable  $O_{\rm z}$  condition,  $N_{\rm z}$  GENESIS 200 enables ultra-low oxygen culture while reducing the consumption of nitrogen gas.

#### MG-71M Ultra-low oxygen culture system

Multi-gas incubator MG-71M

Oxygen concentration program unit MG-PU01

Gas changer MG-GCH02

Nitrogen gas generator N2 GENESIS 200

Optional tank for N2 genesis GST-0205M

Single stand for MG

# Gas changer The state of the s



#### **USER'S VOICE**

Very useful for Cell culture at oxygen concentrations even lower than 1%.  $N_{\rm 2}$  is supplied stably thanks to the nitrogen generator; Makes sense!

We contribute to the development of research and industry.

[ 2019-2020 General Catalog ]

Splestion

temperature incubator shake OD-Monitor

cO<sub>2</sub> incustors shaker

ncubator ncubator

2 P M

Bead beater homogenizer Ultrasonic

Aluminum
block bath
Minisize hat

Shaking water ba

xibue

# Customized Bioshaker CO<sub>2</sub>-BR series (MADE-TO-ORDER)

Dramatically improves the efficiency of Floating cell culture. Optimum for Mammalian cell and Microalgal culture and Substance production.







with Gas controller (Option) and LED Irradiation unit (Option)

CO<sub>2</sub>-BR-180LF with 4 pcs of 5L Disposable flask and Gas controller (Option)

#### Features **S**

- Proprietary "Gas supply branch tubes" for vessels
- •CO<sub>2</sub>, O<sub>2</sub> and N<sub>2</sub> Gas can be used.
- •5L Disposable flask can be used [CO<sub>2</sub>-BR-180LF]

#### **Applications**

- Shaking culture of Floating cells (CHO, etc).
- Shaking culture of Microaerobic or anaerobic bacteria
- Shaking culture of Microalgae [CO<sub>2</sub>-BR-43FL-MR with LED Irradiation unit]

Model (Shaking incubator)	CO <sub>2</sub> BR-40-LF	CO <sub>2</sub> -BR-43FL-MT/MR	CO <sub>2</sub> -BR-180LF
Temperature range/accuracy	4°C to 50°C, ±0.3 to ±1.0 °C (*1)	002 Dit 401 E IIII/IIII	OO2 DIT TOOLI
Shaking motion/speed	Switchable Reciprocal/Orbital, 20 to 200r/min		Switchable Reciprocal/Orbital, 25 to 250r/min
Number of Gas supply tube	6 pcs (Standard)/Up to 12 pcs (Option)		12 pcs
Capacity for Erlenmeyer flask	6 x 250mL/500mL, 1 x 3L (12 x 250mL/500mL can be used with 12 GAS tubes, option)	6 x 25mL/500mL, 4 x 1L	12 x 500mL, 6 x 1L, 4 x 3L/5L
Door	Swing lift-up door (Easily viewable)	Double hinged door (Easy to make chamber dark)	Clamshell split door (Accessible for large vessels)
Dimensions/Weight	W 585 x D 630 x H 660mm, AC100V/9A	W 600 x D 732 x H 643mm, AC100V/12A	W 1110 x D 716 x H 990mm, AC100V/12A
Standard accessories	1 x Gas supply hose set (6 pcs) 1 x Universal shaking platform	1 x Gas supply hose set (6 pcs) 1 x Spring net shaking platform (MR) 1 x Universal shaking platform (MT)	1 x Gas supply hose set (12 pcs) 1 x Universal shaking platform (MR) Light shielding plate for Door

(\*1)The temp. of defrost function just run is not included. Ambient temperature is 5°C to 35°C.
(\*2)In Mammalian cells, the flask caps for the gus supply connection are designed for based on Disposable flask (125mL to 3L, and Thomson Disposable flask 5L).



Model (Gus contre	oller)	CO-GAS1000	CO-GAS3000	Multi-GASS3000
CO <sub>2</sub> Control (Infrared sensor)  Control range  Control accuracy		Atmospheric concentration up to 10%	Atmospheric concentration up to 15%	
		±1%		
CO <sub>2</sub> Control (Zirconia sensor)	Control range	-	-	1% to 50% (*1)
	Control accuracy	-	-	±1%
Flow rate		30 to 300mL/min (*2)		
Gas supply branch tubes		-	Max. 12 tubes (Upto 1L Erlenmeyer flask)	
Dimentions (W x D x H)		135 x 260 x 216mm,	200 x 300 x 260mm	
Weight/Power supply		approx. 5kg, AC100V/2A	approx. 11kg, AC100V/2A	
Standard accessories 2 x		$2 \times \text{Air filter, 1} \times \text{Silicon tube (5m), 1} \times \text{Gus supply tube (5m), 1} \times \text{Gus cap, 1} \times \text{Tube fitting, 1} \times \text{Hose joint}$		

<sup>(\*1)</sup> Above atmospheric concentration can be set. CO<sub>2</sub> and O<sub>2</sub> concentration are controlled by connecting N<sub>2</sub> or O<sub>2</sub> gas in Multi-GASS3000. (\*2) 50 to 500mL/min is available as an option to built it in CO<sub>2</sub>-BR-180LF.

# **Optional accessories**

#### **System Configuration**

Customized Bioshaker CO<sub>2</sub>-BR-43FL-MT and Gas controller CO-GAS3000 are shown in the photo below.



#### Ocustomized Bioshaker CO<sub>2</sub>-BR, Shaking plat form (Standard)

Comes with a set of gas supply hoses.

BR-53FP (New model) can be modified to like this specs. (Ask us for details).



#### **2**Clamps (Optional parts) **3**Flask/Needle caps (Optional parts)

 $\rm CO_2$ -BR-40LF/43FL-MT,  $\rm CO_2$ -BR-180LF come with Universal shaking platform (w/o clamps). Select clamps that just fit the Erlenmeyer flasks. In  $\rm CO_2$ -BR-43FL-MR the vessels can be fixed on only its Universal shaking platform (w/o clamps). Select flask caps that just fit to the Erlenmeyer flasks. \*A needle cap should be used for Algal culture in  $\rm CO_2$ -BR-43FL.



#### **4** Erlenmeyer flask (The users prepare)

We recommend CORNING Disposable flask 125ml to 3L or Thomson Disposable flask 5L for mammalian cells culture.

Glass flasks can be used for Algae culture. In the disposable flasks the compatibility with the flask cap is determined according to the manufacturer and the size. Please ask us if the compatibility is unknown.



#### **5**LED irradiation unit (Option)

White LED unit. Recommended to purchase for Algae culture. On the premise, use it for mainly  $\rm CO_2\text{-}BR\text{-}43FL\text{-}MR$  in combination but it can be retrofitted to other models with some modifications.



6

#### **3** Syringe filter (Option)

Consumables attached to the Flask cap/Needle cap. Contains 50pcs.



#### **Gas controller (Option)**

Available for 2 models for  $CO_2$  and 1 model of multi-gas type for  $CO_2$ ,  $O_2$  and N2. In  $CO_2$ -BR-180LF, Available for the built-in type. The flow rate should be 50 to 500 mL/min in the built-in type.



#### **3**Regulator (Option)

The secondary pressure supply gauge is approx. 0.3MPa. \*NOTE: If use another regulator, use one that should be adjustable for 0.05MPa equipped with Needle valve.

#### **9**CO<sub>2</sub> gas cylinder (The users prepare)

# **Optional accessories**

#### Optional accessories • Replacement and Consumable parts

Product Name / Model	Remarks
Clamp CF-0100	Required for CORNING Disposable flask 125mL.
Clamp <b>CF-0250</b>	Required for CORNING Disposable flask 250mL.
Clamp <b>CF-0500</b>	Required for CORNING Disposable flask 500mL.
Clamp CF-1000	Required for CORNING Disposable flask 1L.
Clamp CF-3000DSP	Required for CORNING Disposable flask 3L and Thomson Disposable Flask 5L.
Flask cap B	Fitted to CORNING Disposable flask 125/250mL, Contains 6pcs
Flask cap C	Fitted to CORNING Disposable flask 250/500mL/1L, Contains 6pcs
Flask cap D	Fitted to CORNING Disposable flask 3L, Contains 6pcs
Flask cap E	Fitted to Thomson Disposable flask 5L, Contains 2pcs
Needle cap 100mL NC100	Fitted to Glass flask 100mL, Suitable for Algae culture, Contains 12pcs
Needle cap 200mL NC200	Fitted to Glass flask 200mL, Suitable for Algae culture, Contains 12pcs
Needle cap 300mL NC300	Fitted to Glass flask 300mL, Suitable for Algae culture, Contains 12pcs
Needle cap 500mL NC500	Fitted to Glass flask 500mL, Suitable for Algae culture, Contains 12pcs
Needle cap 1000mL NC1000	Fitted to Glass flask 1L, Suitable for Algae culture, Contains 12pcs
Syringe filter <b>E255</b>	Consumables for Flask caps, Lure lock type, Correspond to Autoclave, Pore size 0.2µm, Contains 50pcs
Gas supply hose set (6pcs)	For CO <sub>2</sub> -BR-40LF/43FL, 6pcs x Hose (25cm length) with connection connector, For replacement when the accessories are worn.
Gas supply hose set (12pcs)	For CO <sub>z</sub> -BR-180LF, 12pcs x Hose (35cm length) with connection connector, For replacement when the accessories are worn.

#### **Optional accessories**

Product Name / Model	Remarks
Regulator (One-touch joint $\phi$ 6mm)	Needle valve type, Inner diameter 4 mm/Outer diameter 6 mm for PISCO Hoses
Light shielding plate SHP-180LF	For shielding Door and Window of CO <sub>2</sub> -BR180LF from a light, 2pcs, Included in CO <sub>2</sub> -BR-180LF, For repair, Ask us for CO <sub>2</sub> -BR-43FL
LED irradiation unit LC-LED450W	LED Color <sup>*</sup> .White, Peak wavelength 450nm, Photon flux density Approx. 150µmol/m²/s (See page 037 for details )
Nitrogen gas generator N <sub>2</sub> GENESIS 200	Concentrates the atmospheric nitrogen and supplies it; Can be connected directly to CO <sub>2</sub> -BR or via Multi-GAS 3000 (See page 043 for details )