Инкубаторы МСО
Технические характеристики

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pbh@nt-rt.ru || https://phcbi.nt-rt.ru/

CO_2 Incubators | MCO-50AIC/MCO-50AICL

Easier to Clean

The slide-out perforated stainless steel shelves rest securely in integrated shelf channels molded into the left and right sidewalls, eliminating the need for troublesome shelf brackets and clips. Molded shelf channels reduce the amount of interior parts. Perforated shelves promote natural temperature and gas uniformity.

Precision Gas Sensor IR CO_2

The IR CO_2 sensor offers continuous calibration for excellent control and accuracy. This ceramic sensor is not affected by moderate temperature and humidity changes and is linked to the P.I.D. controller for fast recovery. As CO_2 and pH levels are key components for proper tissue culture, "Real Time" recovery and monitoring of CO_2 levels provide better culture outcomes.

Reproducibility by Elimination of External Factors

Reduction of interior parts and condensation control by Peltier powered dew stick helps minimise external factors that often complicate efforts to reproduce cell culture and other protocols. Stable temperature is maintained by the Direct Heat and Air Jacket system. CO_2 is quickly restored to set-point after door openings, while relative humidity returns to an elevated state to prevent media desiccation.

Integrated shelves | inCu saFe | IR dual sensor | SafeCell UV (option)

H_2O_2 decontamination (option)

Model Number		MCO-50AIC/MCO-50AICL		
External dimensions (W x D x H)[1]	mm	480 x 550 x 585		
Internal dimensions (W x D x H)	mm	370 x 363 x 385		
Volume	litres	50		
Net weight	kg	45		
Performance				
Temperature control range and fluctuation	°C	AT +5 to +50[2], ±0.1		
Temperature uniformity[3]	°C	±0.25		
CO_2 setting range and fluctuation[3]	%	0 to 20, ±0.15		
Humidity level and fluctuation	% RH	95 ±5 (Natural evaporation with humidifying pan)		
Control				
Temperature sensor		Thermistor		
Sensor	CO_2	Dual IR		
Display		Digital (white graphic OLED) readable to 0.1 increments		
Construction				
Exterior material		Painted steel (rear cover not painted)		
Interior material		Stainless steel copper-enriched alloy		
Insulation material		Styrene AcryloNitrile copolymer		
Heating method		Direct Heat & Air Jacket System		
Outer door	qty	1 (Field reversible door)		
Inner door	qty	1 (tempered glass)		
Shelves	qty	2 x stainless steel copper-enriched alloy		
Shelf dimensions (W x D x H)	mm	353 x 308 x 12		
Max. load-per shelf	kg	7		
Access port	qty	1 (on the back side / Ø 30 mm)		
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R		
Out of temperature setting		V-B-R		
High temperature		V-B-R		
High/Low gas density		V-B-R		
Door open		V-B		
Electrical and Noise Level		**MCO-50AICL-PA**	**MCO-50AICL-PE**	**MCO-50AIC-PK**
Power supply	V	110-120	220-240	220
Frequency	Hz	60	50/60	60
Power Consumption (230V/50Hz)	kWh/day	1.014 (during cultivation)	0.245 (during decontamination cycle)	
Noise level[4]	dB (A)	29		
Options				
UV system set		MCO-170UVS-PA / MCO-170UVS-PE		
H_2O_2 decontamination kit[5]		MCO-50HB-PW		
Electric door lock with password[5]		MCO-170EL-PW		
H_2O_2 generator[5]		MCO-50HP-PW (on sale soon)		
H_2O_2 reagent		MCO-5H2O2-PV		
CO_2/N_2 gas pressure regulator		MCO-010R-PW		
Automatic CO_2 cylinder changeover system		MCO-50GC-PW		
Tray		MCO-50ST-PW (same as that of standard accessory)		
Double stacking bracket		MCO-170PS-PW (allows for stacking two MCO-50 series incubators)		
Stacking plate		MCO-50SB-PW		
Roller base		MCO-50RB-PW		
Optional Communication Systems				
Digital interface (RS232C/RS485)[6]		MTR-480-PW		
Ethernet interface (LAN)[6]		MTR-L03-PW		
Analogue interface (4–20 mA)		MCO-420MA-PW		
Quality Management System[7]		**MCO-50AICL-PA**	**MCO-50AICL-PE**	**MCO-50AIC-PK**
Certification		ISO9001		ISO13485

1) External dimensions of main cabinet only, excluding handle and other external projections.
2) When set temperature is 37°C, ambient temperature must be 32°C or less. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.
3) The measurement condition complies with PHCbi specified measuring method.
4) Nominal value background noise 20 dB(A).
5) MCO-50AIC(L) requires MCO-50HB, MCO-170EL, MCO-50HP and UV option for H_2O_2 decontamination.
6) Only for the data acquisition system MTR-5000 user.
7) MCO-50AICL is for laboratory use.

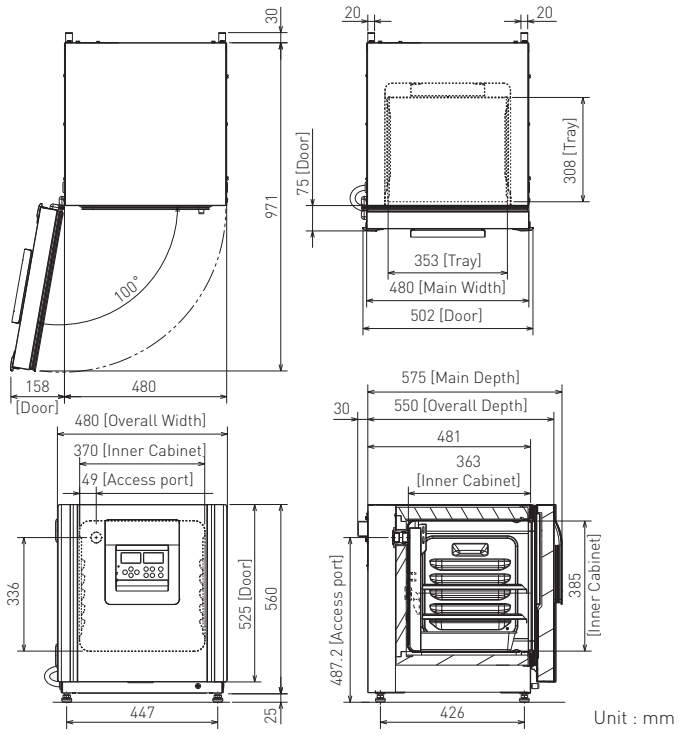
- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.

Unified Controller

A central intuitive control panel with graphic user interface simplifies operation and improves visibility of key performance parameters. An OLED input/output display creates an ergonomically-friendly selection of all functions including temperature, CO_2 setpoint and alarm deviation limits for temperature and CO_2. A USB data port permits downloading logged performance and event information.

Dimensions

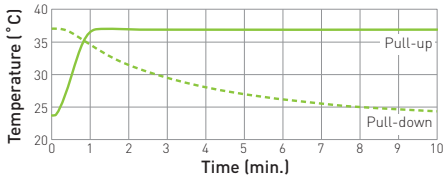


Unit : mm

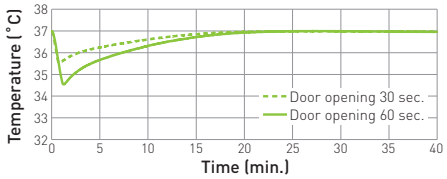
Performance Data

AT23°C, SV37°C, CO_2: 5 %, 230V/50Hz, no load

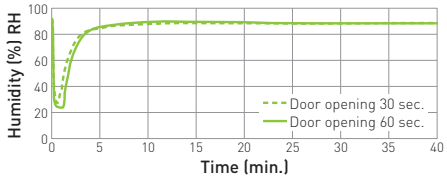
Temperature pull-down/pull-up characteristics



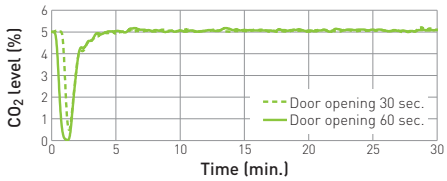
Temperature recovery characteristics



Humidity recovery characteristics

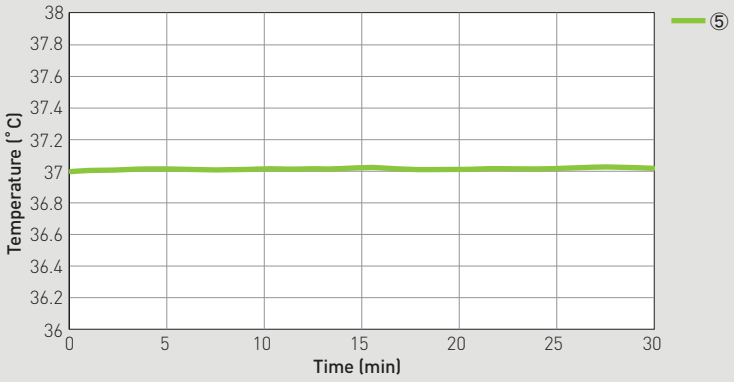


CO_2 level recovery characteristics

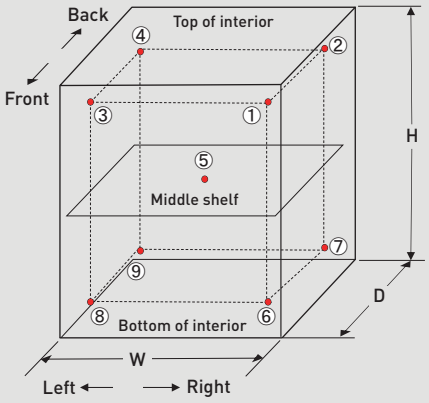


Temperature Stability

Condition: SV37°C, AT23°C, CO_2 0%, 220V 50Hz, no load



Temperature uniformity - 9 points measuring



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV37°C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23°C, CO_2 0%, 220V/50Hz

Unit:°C

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Chamber temp. at nine point (Ave.) <Pt:100Ω>	37.14	37.07	37.06	37.01	37.00	37.07	36.99	36.95	37.01

(Note) Disclaimer

• Specification may change without notice. • The performance data was measured by inhouse test data of PHC. • The Performance data is a reference data and not guaranteed.
• Not all the products available in all countries.

MCO-170ACL/MCO-170AC

CO_2 Incubators

inCu saFe SafeCell UV (option)

165 L

Optimising cell culture outcomes and reproducibility

PHCbi CO_2 Incubators provide precise control of CO_2 concentration and accurate, uniform, and highly responsive temperature control within the chamber. During cell culturing, the inCu-saFe germicidal interior and optional SafeCell UV lamp continuously work to prevent contamination.

Easier to Clean

The slide-out perforated stainless steel shelves rest securely in integrated shelf channels molded into the left and right sidewalls, eliminating the need for troublesome shelf brackets and clips. Molded shelf channels reduce the amount of interior parts by up to 80%. Perforated shelves promote natural temperature and gas uniformity.

Unified Controller

A central intuitive control panel with graphic user interface simplifies operation and improves visibility of key performance parameters. An OLED input/output display creates an ergonomically-friendly selection of all functions including temperature and CO_2 setpoints and alarm deviation limits for temperature and CO_2. A USB data port permits download of logged performance and event information.

Elimination of Condensation

The innovative Peltier powered dew stick located in the interior chamber draws condensation away from the inner door, outer door and inside inCu-saFe copper-enriched stainless steel surfaces. The dew stick returns moisture to the humidity reservoir and halts contamination before it can destroy cell cultures. Interior temperature control and uniformity are not affected.

Germicidal Barriers

The inCu-saFe copper-enriched stainless steel alloy creates an internal germicidal barrier against airborne contaminants. Unlike pure copper, the inCu-saFe surface will not discolour or corrode due to CO_2 exposure over time. An optional UV lamp automatically destroys airborne contaminants through serial dilution of air that gently circulates through a rear plenum.

Central Management

The microprocessor controller manages all incubator functions and user inputs through an arrow prompted menu. Notifications include actual temperature, actual CO_2, door status, UV status and deviation alarms. CO_2 sensor maintains setpoint to within 0.1% and eliminates any need for periodic calibration.

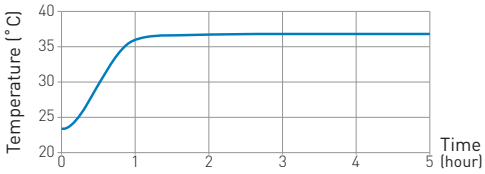
Reproducibility Assured

Reduction of interior parts and condensation control helps minimise external factors that often complicate efforts to reproduce cell culture and other protocols. Stable temperature and CO_2 are quickly restored to setpoints after door openings, while relative humidity returns to an elevated state to prevent media desiccation.

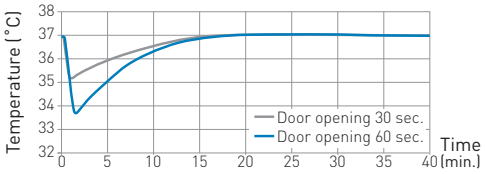
MCO-170ACL/MCO-170AC

Performance Data*

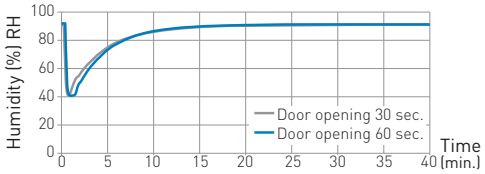
Temperature pull-up characteristics



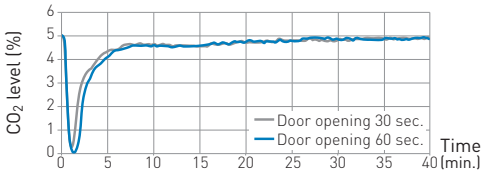
Temperature recovery characteristics



Humidity recovery characteristics

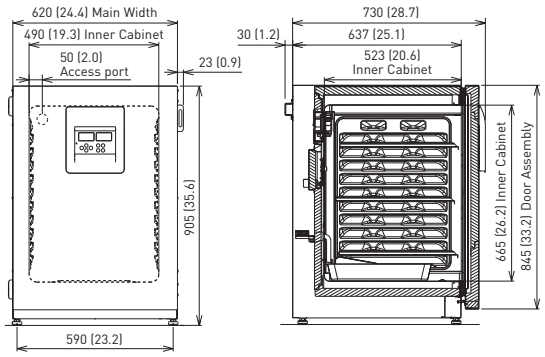


CO_2 level recovery characteristics



Dimensions

Unit : mm (inch)



Model Number		MCO-170ACL-PA	MCO-170ACL-PE	MCO-170AC-PK
External dimensions (W x D x H)[1]	mm	620 x 730 x 905		
Internal dimensions (W x D x H)	mm	490 x 523 x 665		
Volume	litres	165		
Net weight	kg	74		
Performance				
Temperature control range and fluctuation	°C	AT +5 to +50[2], ±0.1		
Temperature uniformity[3]	°C	±0.25		
CO_2 setting range and fluctuation[3]	%	0 to 20, ±0.15		
Humidity level and fluctuation	% RH	95, ±5		
Control				
Temperature sensor		Thermistor		
CO_2 sensor		Thermal conductivity		
Display		Digital (white graphic OLED)		
Construction				
Exterior material		Painted steel (rear cover not painted)		
Interior material		Stainless steel copper-enriched alloy		
Insulation material		Styrene AcryloNitrile copolymer		
Heating method		Direct Heat & Air Jacket System		
Outer door		1		
Field reversible door		Included		
Inner door		1 (tempered glass)		
Trays		3 x stainless steel copper-enriched alloy		
Shelf dimensions (W x D x H)	mm	470 x 450 x 12		
Max. load per shelf	kg	7		
Access port		1		
Access port position		Rear upper left		
Access port diameter	Ø mm	30		
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R		
Out of temperature setting		V-B-R		
High temperature		V-B-R		
Out of CO_2 setting		V-B-R		
Door open		V-B		
Electrical and Noise Level		MCO-170ACL-PA	MCO-170ACL-PE	MCO-170AC-PK
Power supply	V	110-120	220-240	220
Frequency	Hz	60	50 / 60	60
Noise level[4]	dB [A]	29		
Options				
UV system set		MCO-170UVS-PA / MCO-170UVS-PE		
CO_2 gas pressure regulator		MCO-010R-PW		
Automatic CO_2 cylinder changeover system		MCO-21GC-PW		
Small door		MCO-170ID-PW		
Tray		MCO-170ST-PW		
Half tray		MCO-25ST-PW		
Double stacking bracket		MCO-170PS-PW		
Stacking plate		MCO-170SB-PW		
Roller base		MCO-170RB-PW		
Optional Communication Systems				
Ethernet interface (LAN)[5]		MTR-L03-PW		
Digital interface (RS232C/RS485)[5]		MTR-480-PW		
Analogue interface (4–20 mA)		MCO-420MA-PW		
Quality Management System[6]		MCO-170ACL-PA	MCO-170ACL-PE	MCO-170AC-PK
Certification		ISO9001		ISO13485

1) External dimensions of main cabinet only, excluding handle and other external projections.

2) When set temperature is 37°C, ambient temperature must be 32°C or less. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.

3) The measurement condition complies with PHCbi specified measuring method.

4) Nominal value.

5) Only for the data acquisition system MTR-5000 user.

6) MCO-170ACL is for laboratory use.

- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

* Ambient temperature: 23°C, setting: 37°C, CO_2: 5 %, no load

Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents of the product.

CO_2 Incubators | MCO-170AIC/AICL/AICUV/AICUVL/AICUVHL

InCu-saFe® Construction for Germicidal Protection

PHCbi offers the exclusive use of inCu-saFe® copper-enriched stainless steel alloy interior surfaces to eliminate contamination sources such as mold, spores, and other contaminating spills while providing a noncorrosive environment, and to mitigate the effect of airborne contaminates introduced through normal use.

Precision Gas Sensor IR CO_2

The IR CO_2 sensor offers continuous calibration for excellent control and accuracy. This ceramic sensor is not affected by moderate temperature and humidity changes and is linked to the P.I.D. controller for fast recovery. As CO_2 and pH levels are key components for proper tissue culture, "Real Time" recovery and monitoring of CO_2 levels provide better culture outcomes.

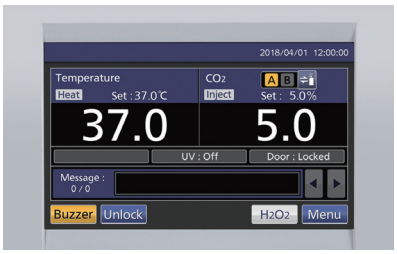
SafeCell UV Decontamination

Isolated Ultra Violet (UV) lamp decontaminates circulating air and the humidity water reservoir without harming the cultured cells. The 5,000 hour UV lamp provides long-term maintenance-free service without the ozone production. The UV lamp also provides easy access to an effective 24 hour chamber decontamination feature through the touch panel controller.

Model Number		MCO-170AIC/MCO-170AICL/MCO-170AICUV/MCO-170AICUVL/MCO-170AICUVHL		
External dimensions (W x D x H)[1]	mm	620 x 730 x 905		
Internal dimensions (W x D x H)	mm	490 x 523 x 665		
Volume	litres	165		
Net weight	kg	80		
Performance				
Temperature control range and fluctuation	°C	AT +5 to +50[2] (AT 5°C–35°C)		
Temperature uniformity[3]	°C	±0.25		
CO_2 setting range and fluctuation[3]	%	0 to 20, ±0.15		
Humidity level and fluctuation	% RH	95 ±5 (Natural evaporation with humidifying pan)		
Control				
Temperature sensor		Thermistor		
Sensor	CO_2	Dual IR		
Display		Touch Panel (WVGA full color LCD)		
Construction				
Exterior material		Painted Steel (rear cover not painted)		
Interior material		Stainless Steel Copper-Enriched Alloy		
Insulation material		Styrene AcryloNitrile copolymer		
Heating method		Direct Heat & Air Jacket System		
Outer door	qty	1 (Field reversible door)		
Inner door	qty	1 (tempered glass)		
Shelves	qty	4 x stainless steel copper-enriched alloy		
Shelf dimensions (W x D x H)	mm	475 x 450 x 12		
Max. load-per shelf	kg	7		
Access port	qty	1 (on the back side / Ø 30 mm)		
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R		
Out of temperature setting		V-B-R		
High temperature		V-B-R		
High/Low gas density		V-B-R		
Door open		V-B		
Electrical and Noise Level		MCO-170AIC-PK MCO-170AICUV-PK	MCO-170AICL-PE MCO-170AICUVL-PE/PA	MCO-170AICUVHL-PE MCO-170AICUVHL-PA
Power supply	V	220	220-240 (PE) / 110-120 (PA)	
Frequency	Hz	60	50 (PE) / 60 (PA)	
Power Consumption (230V/50Hz)	kWh/day	1,844 (during cultivation)	0.454 (during decontamination cycle)	
Noise level[4]	dB (A)	25		
Options				
UV system set		MCO-170UVS-PA / MCO-170UVS-PE		
H_2O_2 decontamination kit[5]		MCO-170HB-PA / MCO-170HB-PE		
Electric door lock with password[5]		MCO-170EL-PW		
H_2O_2 generator[5]		MCO-HP-PW		
H_2O_2 reagent		MCO-H2O2-PV		
CO_2 gas pressure regulator		MCO-010R-PW		
STD gas auto-calibration kit		MCO-SGP-PW		
Automatic CO_2 cylinder changeover system		MCO-21GCP-PW		
Tray		MCO-170ST-PW (same as that of standard accessory)		
Double stacking bracket		MCO-170PS-PW		
Stacking plate		MCO-170SB-PW		
Roller base		MCO-170RB-PW		
Optional Communication Systems				
Digital interface (RS232C/RS485)[6]		MTR-480-PW		
Ethernet interface (LAN)[6]		MTR-L03-PW		
Analogue interface (4–20 mA)		MCO-420MA-PW		
Quality Management System[7]		MCO-170AIC-PK MCO-170AICUV-PK	MCO-170AICL-PE MCO-170AICUVL-PE/PA	MCO-170AICUVHL-PE MCO-170AICUVHL-PA
Certification		ISO13485	ISO9001	

[1] External dimensions of main cabinet only, excluding handle and other external projections.
[2] When set temperature is 37°C, ambient temperature must be 32°C or less. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.
[3] The measurement condition complies with PHCbi specified measuring method.
[4] Nominal value background noise 20 dB(A).
[5] MCO-170AIC(L) requires MCO-170HB, MCO-170EL, MCO-HP and UV option for H_2O_2 decontamination.
[6] Only for the data acquisition system MTR-5000 user.
[7] MCO-170AICL is for laboratory use.
- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

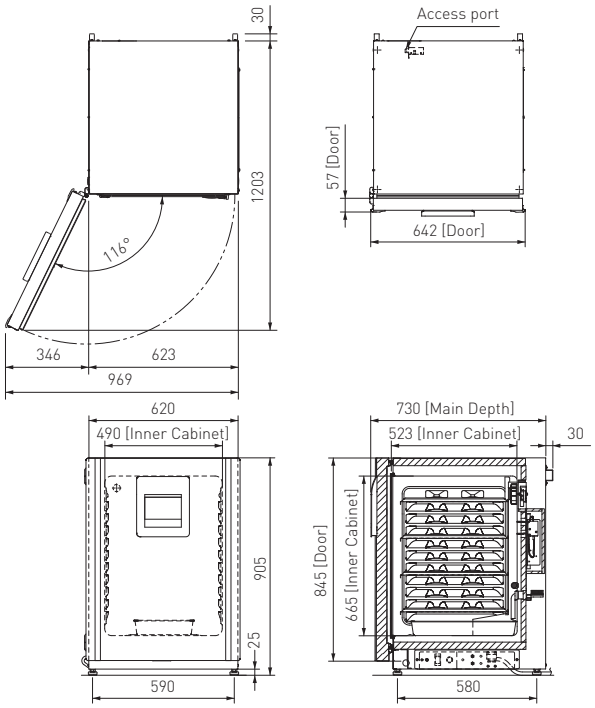
Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.



Reliable controllability and data log function.

Large colour LCD touchpanel is accurately controlled even with a gloved hand, while the USB memory port makes transferring logged data of product's operational status to a PC convenient.

Dimensions

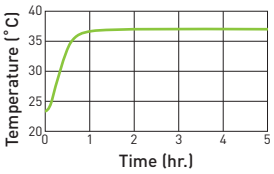


Unit : mm

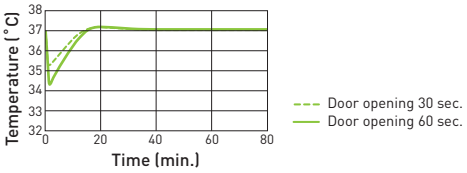
Performance Data

AT23°C, SV37°C, CO_2: 5 %, 220V/50Hz, no load

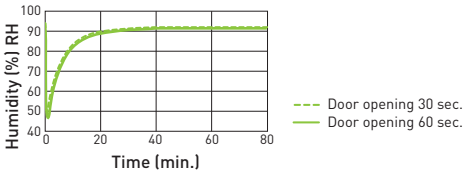
Temperature pull-up characteristics



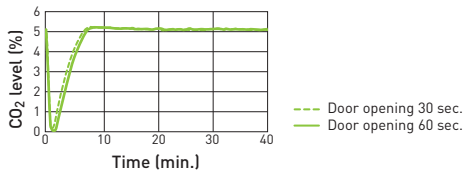
Temperature recovery characteristics



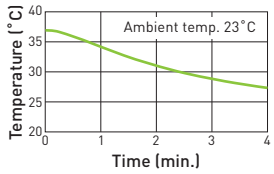
Humidity recovery characteristics



CO_2 level recovery characteristics

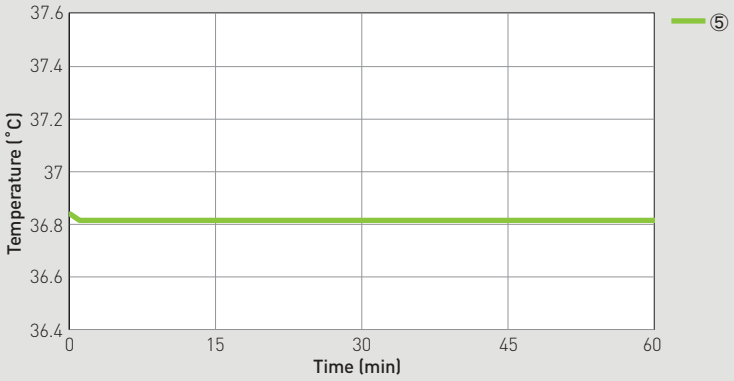


Temperature decrease characteristics when power failure occurs

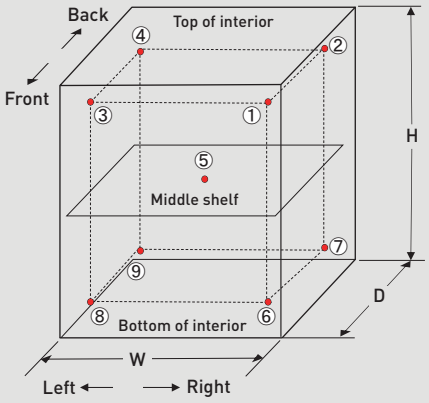


Temperature Stability

Condition: SV37°C, AT23°C, CO_2 0%, 220V 50Hz, no load



Temperature uniformity - 9 points measuring



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV37°C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23°C, CO_2 0%, 220V 50Hz

Unit:°C

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Chamber temp. at nine point (Ave.) <Pt:100Ω>	36.98	36.86	36.73	36.92	36.82	36.73	36.55	36.65	36.81

(Note) Disclaimer

- Specification may change without notice. • The performance data was measured by inhouse test data of PHC. • The Performance data is a reference data and not guaranteed.
- Not all the products available in all countries.

CO2 Incubator

MCO-170AICUVH CO2 Incubator

Effective capacity	165L
Temperature range	+5℃ above ambient to 50℃

Features

Optimising cell culture outcomes and reproducibility

We understand that creating successful cell cultures requires a CO2 incubator that offers the highest levels of precision, security and ease of use.

Our latest IncuSafe MCO-170AIC CO2 Incubators with innovative technologies offer outstanding quality in performance, maximise cell culture productivity and provide optimum results and reproducibility. The MCO-170AICUVH has a built-in UV lamp and a H2O2 Decontamination board and Electric door lock with password.

PHC Europe B.V. also offers three other sizes IncuSafe CO2 Incubators with Safecell UV lamp:

- MCO-170AICUV
- MCO-230AICUV

Benefits

- Improved insulation performance and lower running costs
- PID Control of CO2 and temperature
- Dual IR CO2 sensor
- Optimum protection for your cell culturers
- More space for more cultures
- PHCbi's H2O2 vapour sterilisation cycle reduces downtime to less than 3 hours for complete, validatable decontamination for increased productivity.

Features

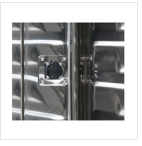
- DHA Direct heat and air jacket system
- Dual IR CO2 sensor
- InCu saFe® copper-enriched stainless steel interior
- Standard Safe Cell UV® with NEW increased UV lamp life
- Standard electric door lock with password
- Integrated shelf supports
- Full colour LCD touch screen
- USB port
- H2O2 Decontamination board

Product Photos







Specifications

External Dimensions (W x D x H)	620 x 730 x 905 mm
Internal Dimensions (W x D x H)	490 x 523 x 665 mm
Volume	165 liters
Net Weight	80 kg
Temperature Control Range & Fluctuation	AT +5 ~ +50, ±0.1 °C
Temperature Uniformity	±0.25 °C
CO2 Control Range & Fluctuation	0 ~ 20, ±0.15 %
O2 Control Range & Fluctuation	-
Humidity Level & Fluctuation	95, ±5 %RH
Sterilisation Method	H2O2 Decontamination
Temperature Sensor	Thermistor
CO2 Sensor	Dual IR
O2 Sensor	-
Display	
Exterior Material	Painted Steel (rear cover not painted)
Interior Material	Stainless Steel Copper-Enriched Alloy
Insulation Material	Styrene AcryloNitrile copolymer
Heating Method	Direct Heat & Air Jacket System

Outer Doors	1
Outer Door Lock	Standard
Field Reversible Door	Included
Inner Doors	1 gastight - made of tempered glass
Shelves	
Shelf Dimensions (W x D x H)	470 x 450 x 12 mm
Max. Load Per Shelf	7 kg
Max. Shelf Capacity	10
Access Port	1
Access Port Position	Rear Upper Left
Access Port Diameter	30
Power Failure	R
Out of Temperature Setting	V-B-R
High Temperature	V-B-R
Out of CO2 Setting	V-B-R
Out of O2 Setting	-
Door Open	V-B
Power Supply	Local
Frequency	Local
Noise Level	29 dB

Accessories

Options

Safe Cell UV system	standard
H2O2 Decontamination board	standard
Electric door lock with password	standard
H2O2 vapour generator	MCO-HP-PW
H2O2 reagent	MCO-H2O2-PE
Double stacking bracket	MCO-170PS-PW
Stacking plate	MCO-170SB-PW
CO2 gas pressure regulator	MCO-100L-PW
Automatic CO2 cylinder changeover system	MCO-21GC-PW

Semi-automatic one point gas calibration kit	MCO-SG-PW
InCu saFe shelf	MCO-170ST-PW
InCu saFe half tray system	MCO-25ST-PW
Roller base	MCO-170RB-PW

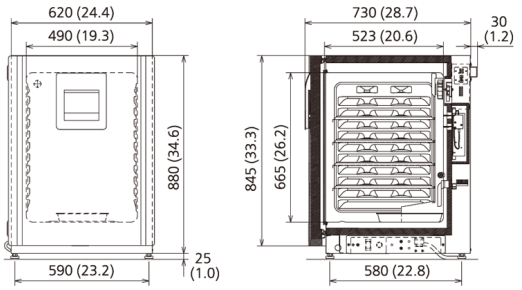
Optional communication systems

Ethernet interface (LAN)	MTR-L03-PW
Digital interface (RS232C/RS485)	MTR-480-PW
Analogue interface (4-20mA)	MCO-420MA-PW

Price

MCO-170AICUVH	Price Upon Inquiry. Please contact your local dealers.

Dimensions



Unit : mm

CO_2 Incubators | MCO-230AIC/AICL/AICUV/AICUVL

InCu-saFe® Construction for Germicidal Protection

PHCbi offers the exclusive use of inCu-saFe® copper-enriched stainless steel alloy interior surfaces to eliminate contamination sources such as mold, spores, and other contaminating spills while providing a noncorrosive environment, and to mitigate the effect of airborne contaminates introduced through normal use.

Precision Gas Sensor IR CO_2

The IR CO_2 sensor offers continuous calibration for excellent control and accuracy. This ceramic sensor is not affected by moderate temperature and humidity changes and is linked to the P.I.D. controller for fast recovery. As CO_2 and pH levels are key components for proper tissue culture, "Real Time" recovery and monitoring of CO_2 levels provide better culture outcomes.

SafeCell UV Decontamination

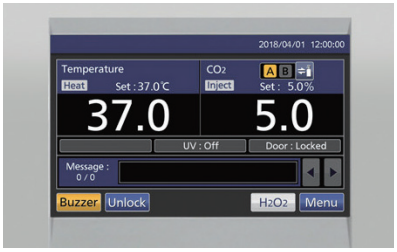
Isolated Ultra Violet (UV) lamp decontaminates circulating air and the humidity water reservoir without harming the cultured cells. The 5,000 hour UV lamp provides long-term maintenance-free service without the ozone production. The UV lamp also provides easy access to an effective 24 hour chamber decontamination feature through the touch panel controller.

Model Number		MCO-230AIC/MCO-230AICL/MCO-230AICUV/MCO-230AICUVL		
External dimensions (W x D x H)[1]	mm	770 x 730 x 905		
Internal dimensions (W x D x H)	mm	643 x 523 x 700		
Volume	litres	230		
Net weight	kg	90		
Performance				
Temperature control range and fluctuation	°C	AT +5 to +50[2] (AT 5°C–35°C)		
Temperature uniformity[3]	°C	±0.25		
CO_2 setting range and fluctuation[3]	%	0 to 20, ±0.15		
Humidity level and fluctuation	% RH	95 ±5 (Natural evaporation with humidifying pan)		
Control				
Temperature sensor		Thermistor		
Sensor	CO_2	Dual IR		
Display		Touch Panel (WVGA full color LCD)		
Construction				
Exterior material		Painted Steel (rear cover not painted)		
Interior material		Stainless Steel Copper-Enriched Alloy		
Insulation material		Styrene AcryloNitrile copolymer		
Heating method		Direct Heat & Air Jacket System		
Outer door	qty	1 (Field reversible door)		
Inner door	qty	1 (tempered glass)		
Shelves	qty	4 x stainless steel copper-enriched alloy		
Shelf dimensions (W x D x H)	mm	628 x 450 x 12		
Max. load-per shelf	kg	7		
Access port	qty	1 (on the back side / Ø 30 mm)		
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R		
Out of temperature setting		V-B-R		
High temperature		V-B-R		
High/Low gas density		V-B-R		
Door open		V-B		
Electrical and Noise Level		**MCO-230AIC-PK MCO-230AICUV-PK**	**MCO-230AICL-PE MCO-230AICUVL-PE**	**MCO-230AICUVL-PA**
Power supply	V	220	220-240	110-120
Frequency	Hz	60	50/60	60
Power Consumption (230V/50Hz)	kWh/day	2.021 (during cultivation)	0.508 (during decontamination cycle)	
Noise level[4]	dB (A)	25		
Options				
UV system set		MCO-170UVS-PA / MCO-170UVS-PE		
H_2O_2 decontamination kit[5]		MCO-170HB-PA / MCO-170HB-PE		
Electric door lock with password[5]		MCO-170EL-PW		
H_2O_2 generator[5]		MCO-HP-PW		
H_2O_2 reagent		MCO-H2O2-PV		
CO_2 gas pressure regulator		MCO-010R-PW		
STD gas auto-calibration kit		MCO-SGP-PW		
Automatic CO_2 cylinder changeover system		MCO-21GCP-PW		
Tray		MCO-230ST-PW (same as that of standard accessory)		
Additional half tray (inCu-saFe®)		MCO-35ST-PW		
Double stacking bracket		MCO-170PS-PW		
Stacking plate		MCO-230SB-PW		
Roller base		MCO-230RB-PW		
Optional Communication Systems				
Digital interface (RS232C/RS485)[6]		MTR-480-PW		
Ethernet interface (LAN)[6]		MTR-L03-PW		
Analogue interface (4–20 mA)		MCO-420MA-PW		
Quality Management System[7]		**MCO-230AIC-PK MCO-230AICUV-PK**	**MCO-230AICL-PE MCO-230AICUVL-PE**	**MCO-230AICL-PA**
Certification		ISO13485	ISO9001	

[1] External dimensions of main cabinet only, excluding handle and other external projections.
[2] When set temperature is 37°C, ambient temperature must be 32°C or less. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.
[3] The measurement condition complies with PHCbi specified measuring method.
[4] Nominal value background noise 20 dB(A).
[5] MCO-230AIC(L) requires MCO-170HB, MCO-170EL, MCO-HP and UV option for H_2O_2 decontamination.
[6] Only for the data acquisition system MTR-5000 user.
[7] MCO-230AICL and MCO-230AICUVL are for laboratory use.

- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

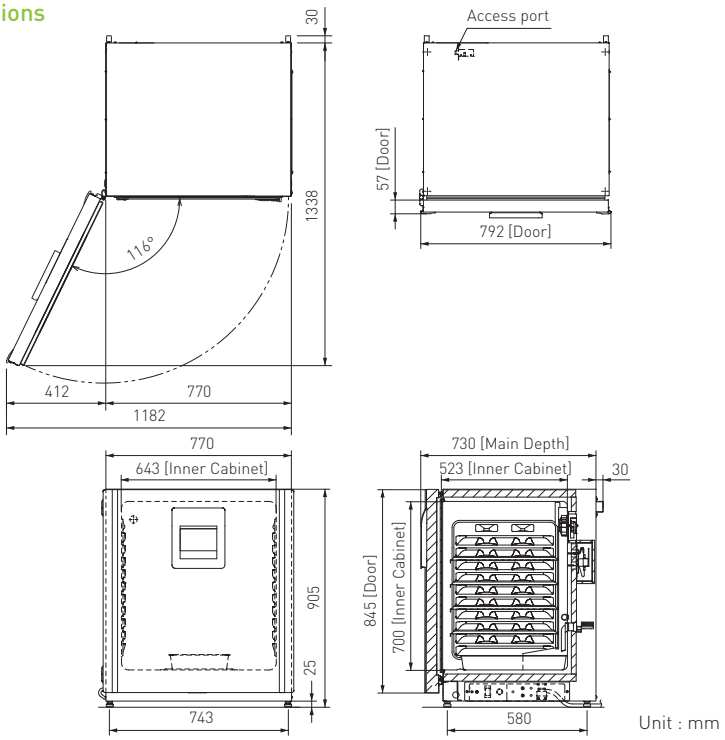
Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.



Reliable controllability and data log function.

Large colour LCD touchpanel is accurately controlled even with a gloved hand, while the USB memory port makes transferring logged data of product`s operational status to a PC convenient.

Dimensions

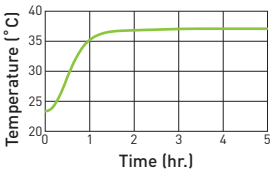


Unit : mm

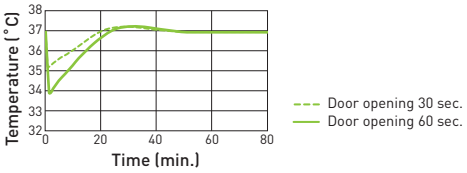
Performance Data

AT23°C, SV37°C, CO_2: 5 %, 220V/50Hz, no load

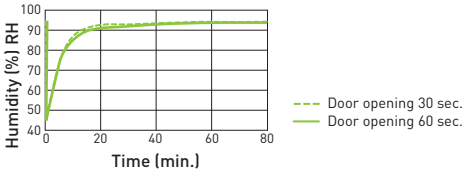
Temperature pull-up characteristics



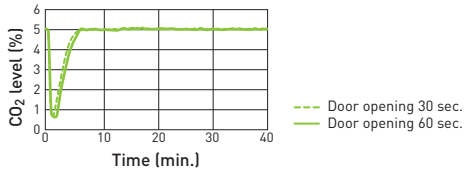
Temperature recovery characteristics



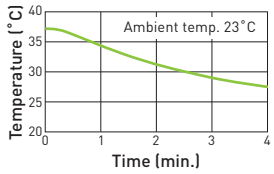
Humidity recovery characteristics



CO_2 level recovery characteristics

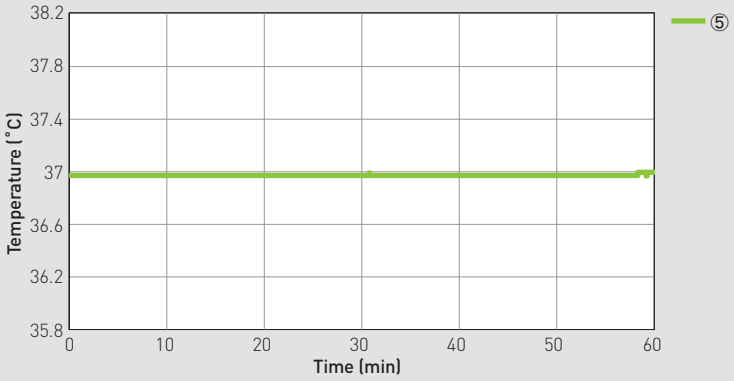


Temperature decrease characteristics when power failure occurs

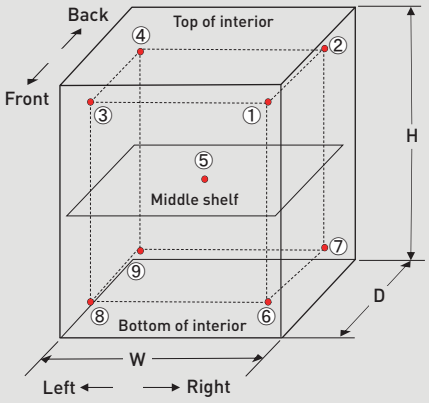


Temperature Stability

Condition: SV37°C, AT23°C, CO_2 0%, 220V 50Hz, no load



Temperature uniformity - 9 points measuring



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV37°C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23°C, CO_2 0%, 220V 50Hz

Unit:°C

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Chamber temp. at nine point (Ave.) <Pt:100Ω>	37.29	37.07	37.03	36.97	36.97	36.97	36.95	36.65	36.81

(Note) Disclaimer

• Specification may change without notice. • The performance data was measured by inhouse test data of PHC. • The Performance data is a reference data and not guaranteed.
• Not all the products available in all countries.

CO_2 Incubators | MCO-170AICD/AICDL/AICUVD/AICUVDL

Precise & Regulated Environment
InCu-saFe® and SafeCell UV both function to prevent contamination. Direct Heat System and melamine foam insulation ensure optimal temperature distribution throughout the chamber while the Dual IR sensor controls the CO_2 level.

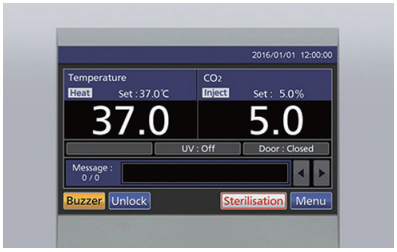
Dual Heat Sterilisation
Dual heat sterilisation utilises the incubator's two heaters during the 180°C sterilisation process, which takes 11 hours. Because there is no effect on temperature inside stacked incubators due to low heat dissipation, cell culturing can continue uninterrupted.

Improved Use & Maintenance
A colour LCD touchscreen panel allows full control, even with gloved hands. Transfer of data is easy via a USB port. The easy-to-clean incubator interior features fully rounded corners and integrated shelf supports.

Model Number		MCO-170AICD/MCO-170AICDL/MCO-170AICUVD/MCO-170AICUVDL			
External dimensions (W x D x H)[1]	mm	620 x 755 x 905			
Internal dimensions (W x D x H)	mm	490 x 523 x 665			
Volume	litres	165			
Net weight	kg	79 (MCO-170AICD) / 80 (MCO-170AICUVD/MCO-170AICUVDL)			
Performance					
Temperature control range and fluctuation	°C	AT +5 to +50[2] (AT 5°C–35°C)			
Temperature uniformity[2]	°C	±0.25			
CO_2 setting range and fluctuation[2]	%	0 to 20, ±0.15			
Humidity level and fluctuation	% RH	95 ±5 (Natural evaporation with humidifying pan)			
Control					
Temperature sensor		Thermistor			
Sensor	CO_2	Dual IR			
Display		Colour LCD touchscreen			
Construction					
Exterior material		Painted Steel (rear cover not painted)			
Interior material		Stainless Steel Copper-Enriched Alloy			
Insulation material		Melamine resin foam			
Heating method		Heater jacket			
Sterilisation method[3]		Dry heat sterilisation, 180°C, 11 hours			
Outer door	qty	1 (Field reversible door)			
Inner door	qty	1 (tempered glass)			
Shelves	qty	4 x stainless steel copper-enriched alloy			
Shelf dimensions (W x D x H)	mm	475 x 450 x 12			
Max. load-per shelf	kg	7			
Access port	qty	1 (on the back side / Ø 30 mm)			
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)			
Power failure		R			
Out of temperature setting		V-B-R			
High temperature		V-B-R			
High/Low gas density		V-B-R			
Door open		V-B			
Electrical and Noise Level		**MCO-170AICD MCO-170AICUVD**	**MCO-170AICDL**	**MCO-170AICUVDL**	
		-PK	**-PE**	**-PE**	**-PA**
Power supply	V	220	220-240		110-120
Frequency	Hz	60	50 / 60		60
Power Consumption (230V/50Hz)	kWh/day	1.367 (during cultivation) 2.887 (during dry heat sterilization)			
Noise level[4]	dB (A)	25			
Options					
UV system set		MCO-170UVSD-PE (MCO-170AICUVD/MCO-170AICUVDL Standard equipment)			
Gas regulator		MCO-010R-PW			
Gas auto changer		MCO-21GCP-PW			
STD gas auto calibration kit		MCO-SGP-PW			
Tray		MCO-170ST-PW			
Half tray		MCO-25ST-PW			
Double stacking bracket[5]		MCO-170PS-PW			
Stacking plate[5]		MCO-170SB-PW			
Roller base		MCO-170RB-PW			
Optional Communication Systems					
Digital interface (RS232C/RS485)[6]		MTR-480-PW			
Ethernet interface (LAN)[6]		MTR-L03-PW			
Analogue interface (4–20 mA)		MCO-420MA-PW			
Quality Management System[7]		**MCO-170AICD MCO-170AICUVD**	**MCO-170AICDL**	**MCO-170AICUVDL**	
		-PK	**-PE**	**-PE**	**-PA**
Certification		ISO13485	ISO9001		

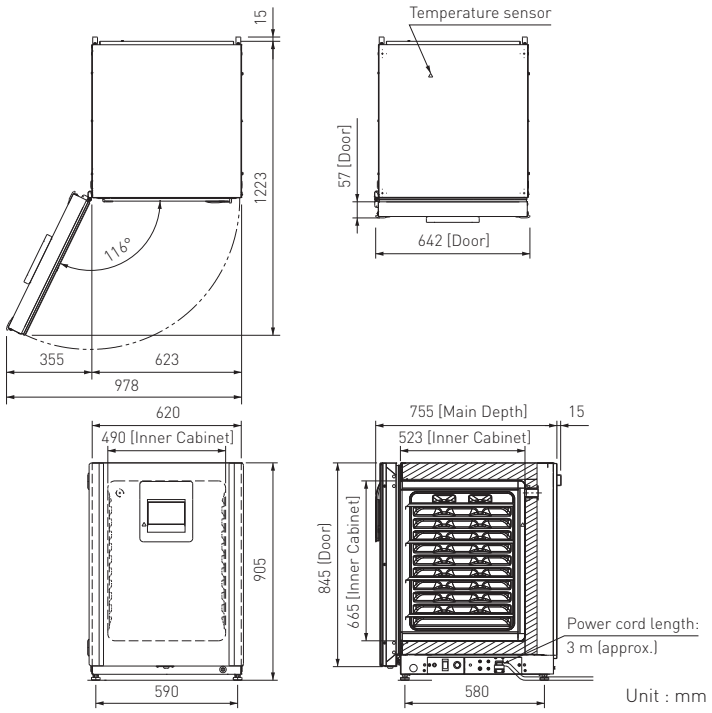
[1] External dimensions of main cabinet only, excluding handle and other external projections.
[2] Ambient temperature 23°C, setting 37°C, CO_2 5%, no load.
[3] Dry heat sterilisation can be performed only for the chamber and inner attachments with standard specifications, not for any other objects.
[4] Nominal value. [5] If stacking two incubators, make sure the double-stacking dedicated securing hardware and spacer are used.
[6] Only for the Data acquisition system MTR-5000 user. MCO-170AICD series can only be fitted with one communications interface.
[7] MCO-170AICDL and MCO-170AICUVDL are for laboratory use.
- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.



Intuitive Usability
Easy control and visibility of the internal conditions such as CO_2 level and temperature.

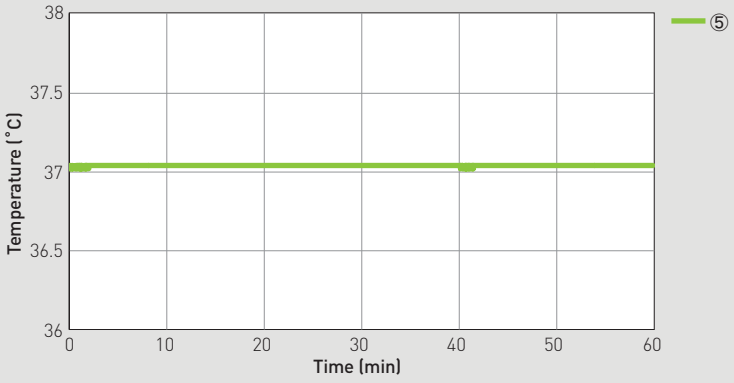
Dimensions



Unit : mm

Temperature Stability

Condition: SV37˚C, AT23˚C, CO_2 0%, 220V 50Hz, no load



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV37˚C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23˚C, CO_2 0%, 220V 50Hz

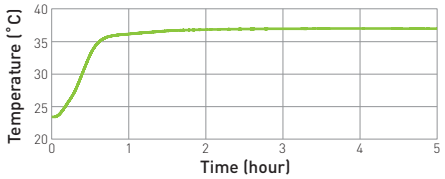
Unit:˚C

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Chamber temp. at nine point (Ave.) <Pt:100Ω>	37.16	37.10	36.91	36.94	37.03	37.01	36.94	37.07	36.90

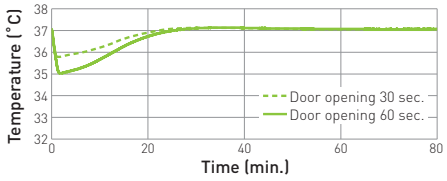
Performance Data

AT23°C, SV37°C, CO_2: 5 %, 220V/50Hz, no load

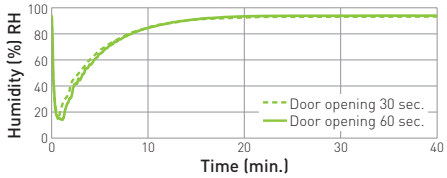
Temperature pull-up characteristics



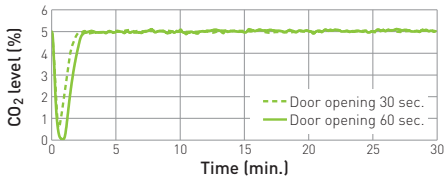
Temperature recovery characteristics



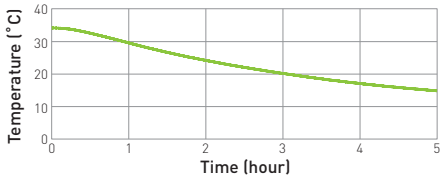
Humidity recovery characteristics



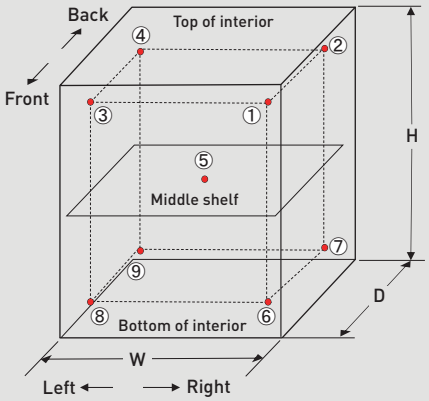
CO_2 level recovery characteristics



Temperature decrease characteristics when power failure occurs



Temperature uniformity - 9 points measuring



(Note) Disclaimer

• Specification may change without notice. • The performance data was measured by inhouse test data of PHC. • The Performance data is a reference data and not guaranteed.
• Not all the products available in all countries.

CO2 Incubators

MCO-80IC CO2 Reach-In Incubator

Effective capacity 851L

Temperature range +5℃ above ambient to 50℃

Features

Large-scale cell culture CO2 Incubator

The IncuSafe MCO-80IC is a large capacity, Reach-in CO2 Cell Culture Incubator, ideal for culturing large volumes of patient samples, performing short-term studies, and working with large volume cell culture apparatus. Superior contamination control with an antibacterial copper-alloy stainless interior that helps eliminate molds, spores and other contaminating spills, kills mycoplasma and provides a noncorrosive environment

Superior CO2 Recovery and Lower CO2 Consumption

The large capacity incubator was specifically designed for critical applications in pharmaceutical, biotechnology and clinical investigations.

Superior CO2, Temperature, and Contamination Control

- CO2 range: 0 to 20%
- Temperature range 5°C above ambient to 50°C
- Effective capacity per chamber: 851 liters

Benefits

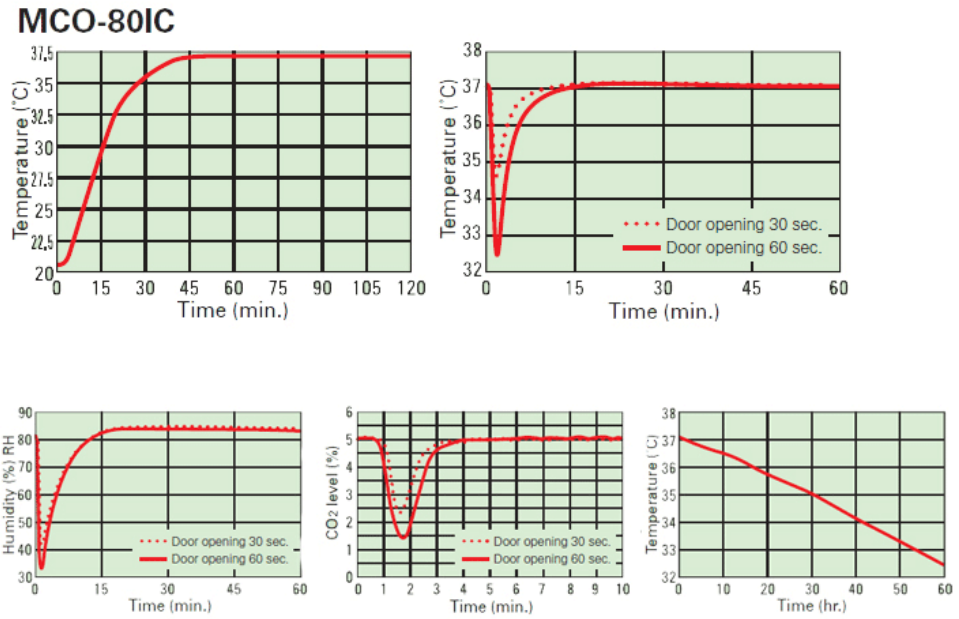
- Passive Resistance To Mycoplasma
- Integrated Core Technologies For Maximum Performance
- Active Background Contamination Control
- IR Infrared CO2 System
- SafeCell Active Background Contamination Control
- InCu saFe Copper-Enriched Stainless Steel
- Microprocessor Control System
- Exceptionally low CO2 consumption rates, less than half of similar competitive units

Features

- inCu saFe copper-alloy-stainless interior, shelves and plenum
- 851 liters capacity cabinet
- Cabinet can accommodate a roller bottle apparatus, 5 bottles wide x 7 bottles high (requires mounting kit, MCO-80RBS)
- Temperature uniformity
- Forced air surrounding chamber
- Cell Culture Protection Systems
- Superior CO2 Recovery and Lower CO2 Consumption
- Optional UV Sterilization and Humidity Control

- Horizontal Laminar Airflow System promotes temperature uniformity
- Forced air surrounding chamber allows uniform temperature distribution with no temperature gradients
- Exceptional Contamination Control
- Superior Contamination Control

Performance



Product Photos

Specifications

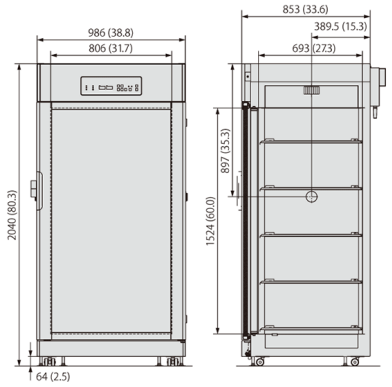
External Dimensions (W x D x H)	986 x 853 x 2040 mm
Internal Dimensions (W x D x H)	806 x 693 x 1524 mm
Volume	851 liters
Net Weight	275 kg
Temperature Control Range & Fluctuation	AT +5 ~ +50, (AT; 20oC to 35oC) ±0.1 °C
Temperature Uniformity	±0.5 °C
CO2 Control Range & Fluctuation	0 ~ 20, ±0.15 %
O2 Control Range & Fluctuation	-
Humidity Level & Fluctuation	Normal mode; >80 | High mode; > 90 %RH
Sterilisation Method	-
Temperature Sensor	Thermistor
CO2 Sensor	IR
O2 Sensor	-
Display	
Exterior Material	Painted Steel
Interior Material	Stainless Steel Copper-Enriched Alloy
Insulation Material	Rigid polyurethane foamed-in place (CFC-Free)
Heating Method	Horizontal laminar airflow system
Outer Doors	1 double paned glass
Outer Door Lock	N/A
Field Reversible Door	-
Inner Doors	-
Shelves	
Shelf Dimensions (W x D x H)	776 x 659 x 10 mm
Max. Load Per Shelf	30 kg
Max. Shelf Capacity	37
Access Port	2
Access Port Position	Left and right hand side
Access Port Diameter	40
Power Failure	R
Out of Temperature Setting	V-B-R

High Temperature	V-B-R
Out of CO2 Setting	V-B-R
Out of O2 Setting	-
Door Open	V
Power Supply	Local
Frequency	Local
Noise Level	33 dB

Price

MCO-80IC	Price Upon Inquiry. Please contact your local dealers.

Dimensions



Unit : mm

CO_2 /O_2 Multi-gas Incubator | MCO-50M

Easier to Clean

The slide-out perforated stainless steel shelves rest securely in integrated shelf channels molded into the left and right sidewalls, eliminating the need for troublesome shelf brackets and clips. Molded shelf channels reduce the amount of interior parts. Perforated shelves promote natural temperature and gas uniformity.

Precision Gas Sensors IR CO_2 and Zirconia O_2

The IR CO_2 sensor offers continuous calibration for excellent control and accuracy. This ceramic sensor is not affected by moderate temperature and humidity changes and is linked to the P.I.D. controller for fast recovery. As CO_2 and pH levels are key components for proper tissue culture, "Real Time" recovery and monitoring of CO_2 levels provide better culture outcomes. A Zirconia O_2 sensor controls oxygen within a 1-18% / 22-80% range.

Reproducibility by Elimination of External Factors

Reduction of interior parts and condensation control by Peltier powered dew stick helps minimise external factors that often complicate efforts to reproduce cell culture and other protocols. Stable temperature is maintained by the Direct Heat and Air Jacket system. CO_2 and O_2 are quickly restored to set-point after door openings, while relative humidity returns to an elevated state to prevent media desiccation.

Integrated shelves | inCu saFe | IR dual sensor | SafeCell UV (option) | H_2O_2 decontamination (option) | zirconia O_2 control

Model Number		MCO-50M		
External dimensions (W x D x H)[1]	mm	480 x 550 x 585		
Internal dimensions (W x D x H)	mm	370 x 363 x 385		
Volume	litres	50		
Net weight	kg	46		
Performance				
Temperature control range and fluctuation	°C	AT +5 to +50[2], ±0.1		
Temperature uniformity[3]	°C	±0.25		
CO_2 setting range and fluctuation[3]	%	0 to 20, ±0.15		
O_2 setting range and fluctuation[3]	%	1 to 18, 22 to 80, ±0.20		
Humidity level and fluctuation	% RH	95 ±5 (Natural evaporation with humidifying pan)		
Control				
Temperature sensor		Thermistor		
Sensor	CO_2, O_2	Dual IR, Stabilised Zirconia		
Display		Digital (white graphic OLED) readable to 0.1 increments		
Construction				
Exterior material		Painted steel (rear cover not painted)		
Interior material		Stainless steel copper-enriched alloy		
Insulation material		Styrene AcryloNitrile copolymer		
Heating method		Direct Heat & Air Jacket System		
Outer door	qty	1 (Field reversible door)		
Inner door	qty	1 (tempered glass)		
Shelves	qty	2 x stainless steel copper-enriched alloy		
Shelf dimensions (W x D x H)	mm	353 x 308 x 12		
Max. load-per shelf	kg	7		
Access port	qty	1 (on the back side / Ø 30 mm)		
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R		
Out of temperature setting		V-B-R		
High temperature		V-B-R		
High/Low gas density		V-B-R		
Door open		V-B		
Electrical and Noise Level		**MCO-50M-PA**	**MCO-50M-PE**	**MCO-50M-PK**
Power supply	V	110-120	220-240	220
Frequency	Hz	60	50/60	60
Power Consumption (230V/50Hz)	kWh/day	1.014 (during cultivation)	0.245 (during decontamination cycle)	
Noise level [4]	dB (A)	29		
Options				
UV system set		MCO-170UVS-PA / MCO-170UVS-PE		
H_2O_2 decontamination kit [5]		MCO-50HB-PW		
Electric door lock with password [5]		MCO-170EL-PW		
H_2O_2 generator [5]		MCO-50HP-PW (on sale soon)		
H_2O_2 reagent		MCO-5H2O2-PV		
CO_2/N_2 gas pressure regulator		MCO-010R-PW		
Automatic CO_2 cylinder changeover system		MCO-50GC-PW		
Tray		MCO-50ST-PW (same as that of standard accessory)		
Double stacking bracket		MCO-170PS-PW (allows for stacking two MCO-50 series incubators)		
Stacking plate		MCO-50SB-PW		
Roller base		MCO-50RB-PW		
Optional Communication Systems				
Digital interface (RS232C/RS485) [6]		MTR-480-PW		
Ethernet interface (LAN) [6]		MTR-L03-PW		
Analogue interface (4–20 mA)		MCO-420MA-PW		
Quality Management System		**MCO-50M-PA**	**MCO-50M-PE**	**MCO-50M-PK**
Certification		ISO9001	ISO13485	

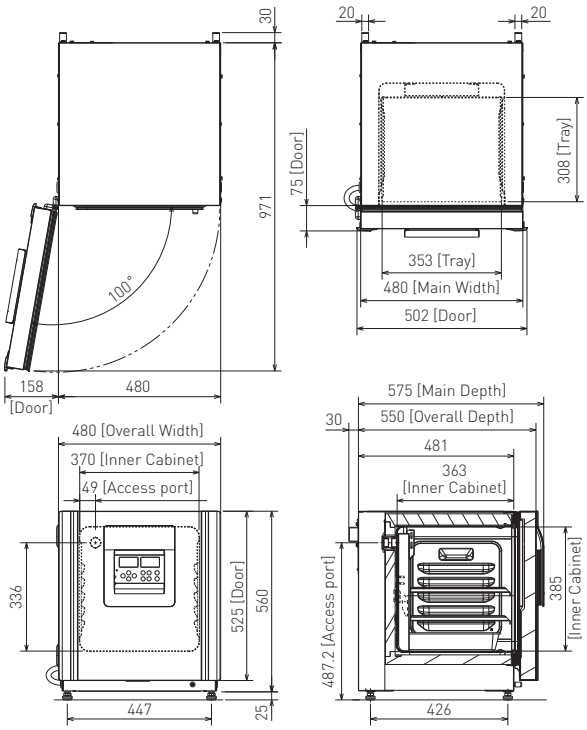
[1] External dimensions of main cabinet only, excluding handle and other external projections.
[2] When set temperature is 37°C, ambient temperature must be 32°C or less. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.
[3] The measurement condition complies with PHCbi specified measuring method.
[4] Nominal value background noise 20 dB(A).
[5] MCO-50M requires MCO-50HB, MCO-170EL, MCO-50HP and UV option for H_2O_2 decontamination.
[6] Only for the data acquisition system MTR-5000 user.
- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.

Unified Controller

A central intuitive control panel with graphic user interface simplifies operation and improves visibility of key performance parameters. An OLED input/output display creates an ergonomically-friendly selection of all functions including temperature, CO_2 and O_2 setpoints and alarm deviation limits for temperature, CO_2 and O_2. A USB data port permits downloading logged performance and event information.

Dimensions

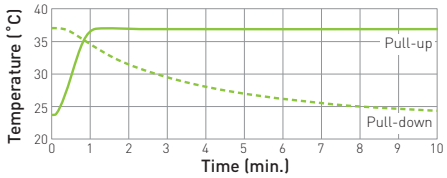


Unit : mm

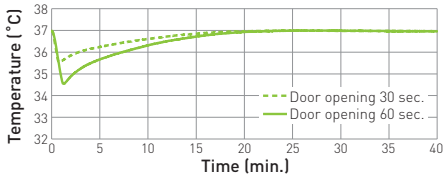
Performance Data

AT23°C, SV37°C, CO_2: 5 %, O_2: 5 %, 230V/50Hz, no load

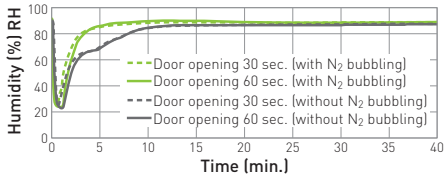
Temperature pull-down/pull-up characteristics



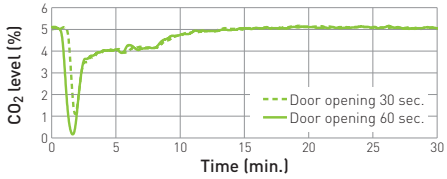
Temperature recovery characteristics



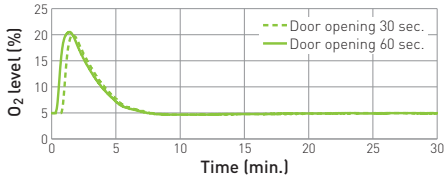
Humidity recovery characteristics



CO_2 level recovery characteristics

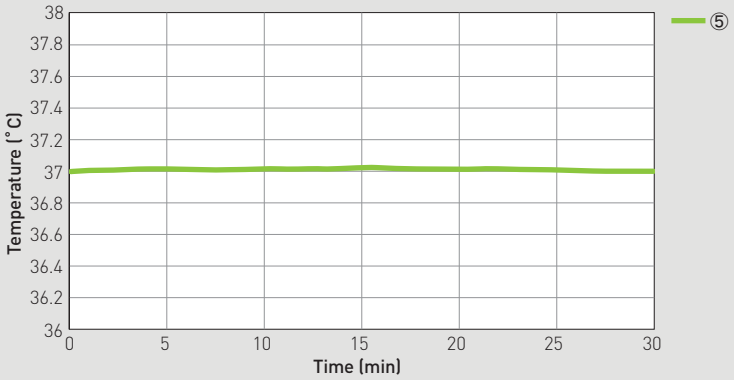


O_2 level recovery characteristics

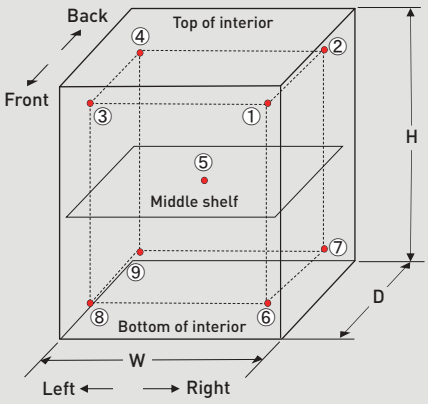


Temperature Stability

Condition: SV37°C, AT23°C, CO_2 0%, O_2 20%, 220V/50Hz, no load



Temperature uniformity - 9 points measuring



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV37°C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23°C, CO_2 0%, O_2 20%, 220V/50Hz

Unit:°C

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Chamber temp. at nine point (Ave.) <Pt:100Ω>	37.14	37.07	37.06	37.01	37.00	37.07	36.99	36.95	37.01

(Note) Disclaimer

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- Not all the products available in all countries.

CO_2 /O_2 Multi-gas Incubators | MCO-170M/MCO-170ML

InCu-saFe® Construction for Germicidal Protection

PHCbi offers the exclusive use of inCu-saFe® copper-enriched stainless steel alloy interior surfaces to eliminate contamination sources such as mold, spores, and other contaminating spills while providing a noncorrosive environment, and to mitigate the effect of airborne contaminates introduced through normal use.

SafeCell UV Decontamination*

Isolated Ultra Violet (UV) lamp decontaminates circulating air and the humidity water reservoir without harming the cultured cells. The 5,000 hour UV lamp provides long-term maintenance free service without the ozone production. The UV lamp also provides easy access to an effective 24 hour chamber decontamination feature through the touch panel controller.

*The optional MCO-170UVS will add the UV function.

Precision Gas Sensors IR CO_2 and Zirconia O_2

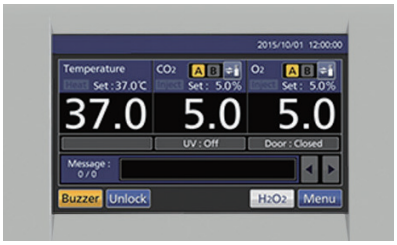
The IR CO_2 sensor offers continuous calibration for excellent control and accuracy. This ceramic sensor is not affected by moderate temperature and humidity changes and is linked to the P.I.D. controller for fast recovery. As CO_2 and pH levels are key components for proper tissue culture, "Real Time" recovery and monitoring of CO_2 levels provide better culture outcomes. A Zirconia O_2 sensor controls oxygen within a 1-18% / 22-80% range.

Model Number		MCO-170M-PK	MCO-170ML-PE	MCO-170ML-PA
External dimensions (W x D x H)[1]	mm	490 x 523 x 665		
Internal dimensions (W x D x H)	mm	620 x 730 x 905		
Volume	litres	161		
Net weight	kg	77		
Performance				
Temperature control range and fluctuation	°C	AT +5 to +50[2]		
Temperature uniformity[3]	°C	±0.25		
CO_2 setting range and fluctuation[3]	%	0 to 20, ±0.15		
O_2 setting range and fluctuation[3]	%	1 to 18, 22 to 80, ±0.20		
Humidity level and fluctuation	% RH	95 ±5 (Natural evaporation with humidifying pan)		
Control				
Temperature sensor		Thermistor		
Sensor	CO_2, O_2	Dual IR, Stabilised Zirconia		
Display		Digital (white graphic OLED) readable to 0.1 increments		
Construction				
Exterior material		Painted steel (rear cover not painted)		
Interior material		Stainless steel copper-enriched alloy		
Insulation material		Styrene AcryloNitrile copolymer		
Heating method		Direct Heat & Air Jacket System		
Outer door	qty	1 (Field reversible door)		
Inner door	qty	1 (tempered glass)		
Shelves	qty	3 x stainless steel copper-enriched alloy		
Shelf dimensions (W x D x H)	mm	475 x 450 x 12		
Max. load-per shelf	kg	7		
Access port	qty	1 (on the back side / Ø 30 mm)		
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R		
Out of temperature setting		V-B-R		
High temperature		V-B-R		
High/Low gas density		V-B-R		
Door open		V-B		
Electrical and Noise Level		**MCO-170M-PK**	**MCO-170ML-PE**	**MCO-170ML-PA**
Power supply	V	220	220-240	110-120
Frequency	Hz	60	50/60	60
Power Consumption (230V/50Hz)	kWh/day	2.021 (during cultivation) 0.493 (during decontamination cycle)		
Noise level [4]	dB (A)	25		
Options				
UV system set		MCO-170UVS-PA / MCO-170UVS-PE		
H_2O_2 decontamination kit [5]		MCO-170HB-PA / MCO-170HB-PE		
Electric door lock with password [5]		MCO-170EL-PW		
H_2O_2 generator [5]		MCO-HP-PW		
H_2O_2 reagent		MCO-H2O2-PV		
CO_2/N_2 gas pressure regulator		MCO-010R-PW		
STD gas auto-calibration kit		MCO-SGP-PW		
Automatic CO_2 cylinder changeover system		MCO-21GCP-PW		
Tray		MCO-170ST-PW (same as that of standard accessory)		
Double stacking bracket		MCO-170PS-PW		
Stacking plate		MCO-170SB-PW		
Roller base		MCO-170RB-PW		
Optional Communication Systems				
Digital interface (RS232C/RS485) [6]		MTR-480-PW		
Ethernet interface (LAN) [6]		MTR-L03-PW		
Analogue interface (4–20 mA)		MCO-420MA-PW		
Quality Management System [7]		**MCO-170M-PK**	**MCO-170ML-PE**	**MCO-170ML-PA**
Certification		ISO13485	ISO9001	

1) External dimensions of main cabinet only, excluding handle and other external projections.
2) When set temperature is 37°C, ambient temperature must be 32°C or less. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.
3) The measurement condition complies with PHCbi specified measuring method.
4) Nominal value background noise 20 dB(A).
5) MCO-170M requires MCO-170HB, MCO-170EL, MCO-HP and UV option for H_2O_2 decontamination.
6) Only for the data acquisition system MTR-5000 user.
7) MCO-170ML is for laboratory use.

- The optimum performance may not be obtained if the ambient temperature is not above 15°C.
- Appearance and specifications are subject to change without notice.

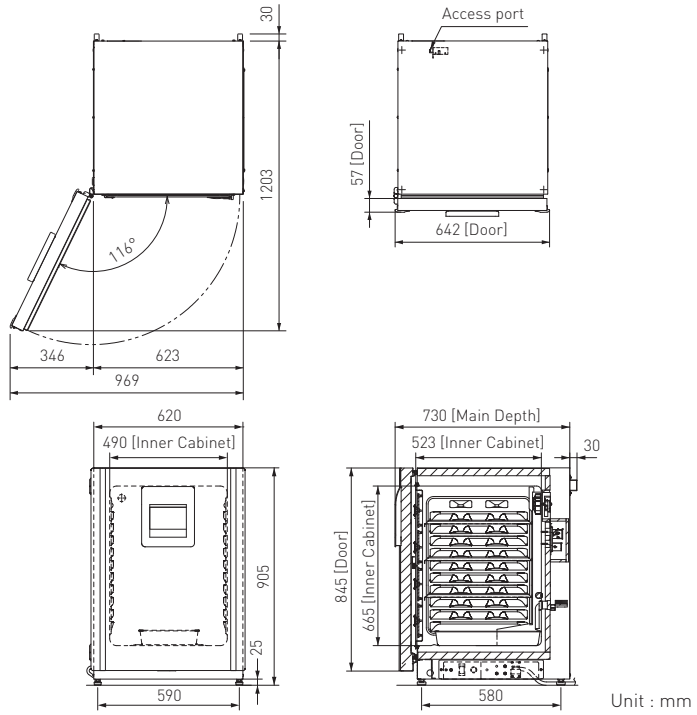
Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.



Reliable controllability and data log function.

Large colour LCD touchpanel is accurately controlled even with a gloved hand, while the USB memory port makes transferring logged data of product's operational status to a PC convenient.

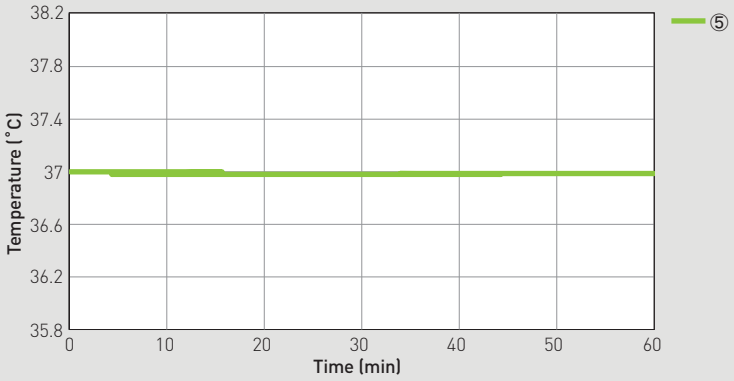
Dimensions



Unit : mm

Temperature Stability

Condition: SV37°C, AT23°C, CO_2 0%, O_2 20%, 230V/50Hz, no load



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV37°C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23°C, CO_2 0%, O_2 20%, 220V/50Hz

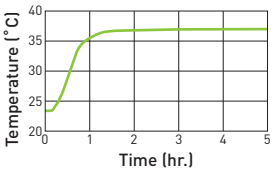
Unit:°C

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Chamber temp. at nine point (Ave.) <Pt:100Ω>	37.30	37.03	37.16	36.94	36.99	36.96	37.00	36.99	36.94

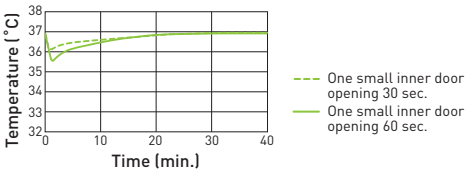
Performance Data

AT23°C, SV37°C, CO_2: 5 %, O_2: 5 %, 220V/50Hz, no load

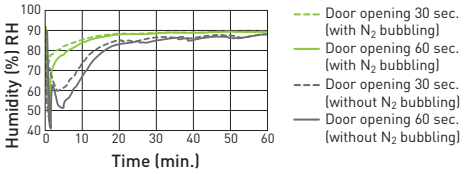
Temperature pull-up characteristics



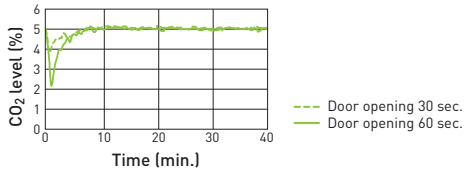
Temperature recovery characteristics



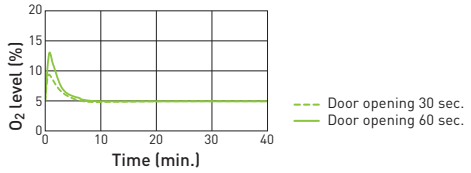
Humidity recovery characteristics



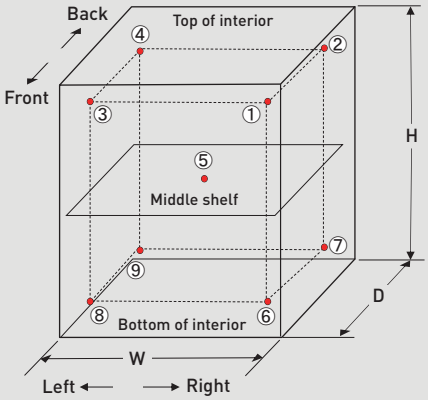
CO_2 level recovery characteristics



O_2 level recovery characteristics



Temperature uniformity - 9 points measuring



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• Not all the products available in all countries.

По вопросам продаж и поддержки обращайтесь:

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Архангельск (8182)63-90-72
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