Data Sheet

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

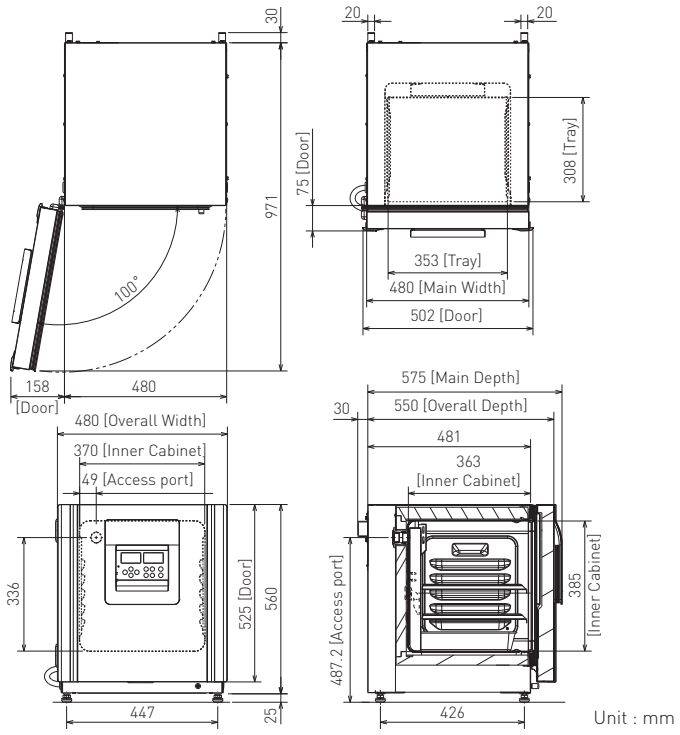
Unified Controller

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.

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.

Dimensions

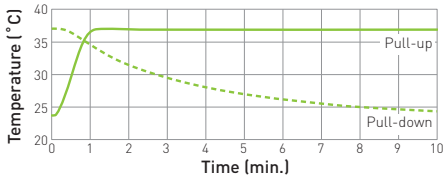


Unit : mm

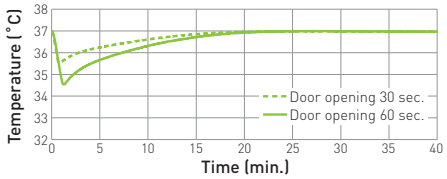
Performance Data

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

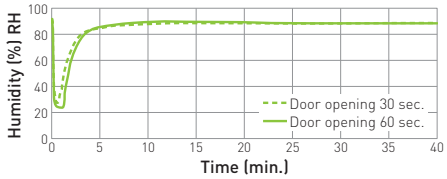
Temperature pull-down/pull-up characteristics



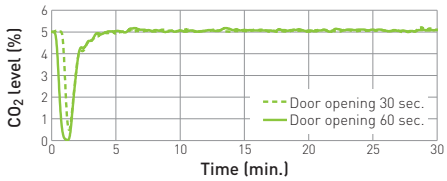
Temperature recovery characteristics



Humidity recovery characteristics

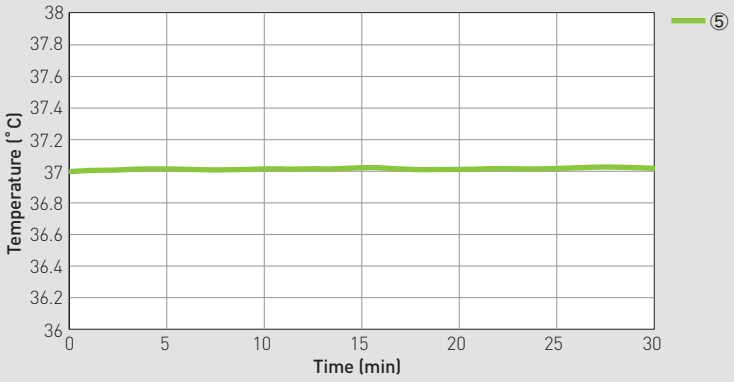


CO_2 level recovery characteristics

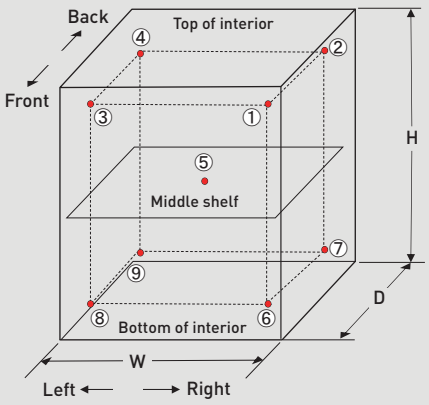


Temperature Stability

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.

PHC Corporation

https://www.phchd.com/global/biomedical/