



MCO-50M-PA

cellIQ™

Multigas (CO₂/O₂) Incubator



The Cell-IQ MCO-50M-PA multigas incubator is engineered to precisely and accurately control CO₂, O₂, and temperature for optimal culturing conditions. Contamination control is achieved through multiple passive and active decontamination capabilities in a compact design. Multiple units can be double, or triple stacked for a range of applications that demand sample isolation, including stem cell research and *in vitro* fertilization.

Responsive Performance

A stable and uniform temperature is maintained by the Direct Heat and Air Jacket system. CO₂ and O₂ are quickly restored to setpoints after door openings, while relative humidity returns to an elevated state to prevent media desiccation. A streamlined interior maximizes space and reduces contamination risk while improving ease of maintenance. A Peltier dew stick provides optimal humidity control by removing condensation from the interior chamber.

Contamination Control

Exclusive inCu-saFe® alloy interior provides the germicidal properties of copper with the corrosion resistance of stainless steel. Optional SafeCell™ UV light, safely destroys contaminants at the humidification source from behind a plenum wall. A high-speed H₂O₂ vapor decontamination option utilizes a combination of vaporized hydrogen peroxide and UV light to permeate and safely clean the chamber in less than 3 hours to achieve a minimal 6 log reduction of major contaminants. H₂O₂ vapor is reduced to water vapor by the UV light.

Event Management

The microprocessor controller manages and records incubator functions and user inputs through an arrow prompted touchscreen menu. Events and parameters include temperature, CO₂, O₂, humidity, door open/close status and timing, UV status and parameter deviation alarms. Precision CO₂ and O₂ sensors maintain setpoints to within 0.15% and 0.2% respectively.



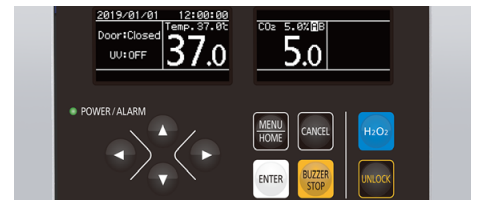
Precision Gas Sensors Dual IR CO₂ and Zirconia O₂

Unaffected by temperature or humidity changes, the dual infrared CO₂ sensor continuously calibrates for control and accuracy. The solid-state Zirconia sensor delivers a long-term precise and accurate oxygen control range of 1% to 18% and 22% to 80% without periodic calibration. A white LED graphic user interface control panel delivers full control over inner chamber environment and alarms.



Easy to Clean

Integrated inCu-saFe shelf design facilitates a seamless interior chamber that mitigates contamination while remaining easy to clean and remaining corrosion free. Shelf channels are molded into the sidewalls, minimizing moving parts and eliminating the need for brackets and clips.



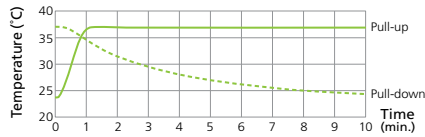
Advanced Touchpanel Controller

An intuitive controller provides full control over interior incubator chamber parameters. Temperature, CO₂, O₂ and humidity setpoints and alarm deviations are controlled on a white LED graphic user interface control panel for ease of use, even with gloved hands. Standard USB data port permits convenient transfer of logged performance.

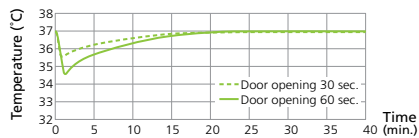
Time-Saving Decontamination

The high-speed H₂O₂ vapor decontamination system uses a combination of vaporized hydrogen peroxide and UV light to permeate and safely clean the chamber in less than 3 hours to achieving a minimal 6 log reduction of major contaminants. H₂O₂ vapor is reduced to water vapor by the UV light following the nebulizer sequence.

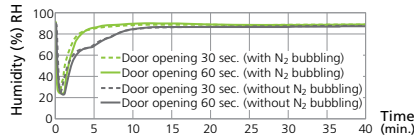
Temperature Response



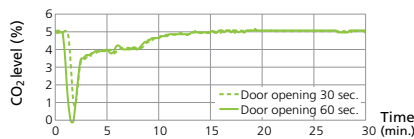
Temperature Recovery



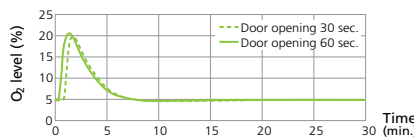
Humidity Recovery



CO₂ Recovery

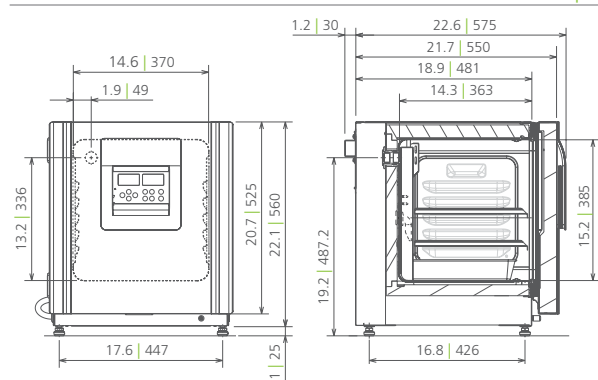


O₂ Recovery



Dimensions

Unit : inch | mm



Model Number	MCO-50M-PA	With Optional UV Decontamination	With Optional H ₂ O ₂ Decontamination	
External Dimensions (W x D x H) ¹⁾	inches mm	18.9 x 21.7 x 23.0 480 x 550 x 585		
Internal Dimensions (W x D x H)	inches mm	14.6 x 14.3 x 15.2 370 x 363 x 385		
Volume	cu.ft. liters	1.8 50		
Net Weight	lbs kg	101 46		
Performance				
Warranty ²⁾		3 years parts and labor		
Temperature Control Range and Fluctuation ³⁾	°C	+5 above ambient to +50, ± 0.1		
Temperature Uniformity ³⁾	°C	± 0.25		
CO ₂ Control Range and Fluctuation ³⁾	%	0 to 20, ± 0.15		
O ₂ Control Range and Fluctuation ³⁾	%	1% to 18%, 22% to 80% ± 0.2		
Humidity Level & Fluctuation	% RH	95 at 37°C, ± 5 (natural evaporation with humidifying pan)		
Control				
Controller		Microprocessor – digital with soft keys		
Temperature Sensor		Thermistor		
Display	qty	White graphic OLED – (temperature, CO ₂ , O ₂) readable to 0.1 increments		
Sensor	CO ₂ O ₂	Dual filter IR Stabilized zirconia		
Construction				
Exterior Material		Painted steel (rear cover coated steel)		
Interior Material		Stainless steel copper enriched alloy		
Outer Door	qty	1; Field reversible		
Inner Door	qty	1; Sealing tempered glass with positive latch		
Humidity Pan		1; Stainless steel		
Shelves	qty	2; Stainless steel copper enriched alloy		
Shelf Dimension (W x D x H)	inches mm	13.9 x 12.1 x 0.5 353 x 308 x 12		
Max. Load per Shelf	lbs kg	15.4 7		
Max. Total Load	lbs kg	30.9 14		
Max. Shelf Capacity	qty	5		
Access Port / Position	qty	1; On back wall, upper left side		
Access Port Diameter	inches mm	1.2 30 with silicone (non-VOC) stopper		
Leveling Feet	qty	4		
Decontamination Control				
inCu-safe Chamber, Plenum, Shelves, Shelf Channels	passive	Included (stainless steel copper enriched alloy)		
SafeCell UV Light System	passive/active	Optional	Included	Included
Hydrogen Peroxide (H ₂ O ₂) Vapor	active	Optional	Optional	Included
Alarms (V=Visual Alarm, Buzzer Alarm, R=Remote Alarm)				
Power Failure				R
Temperature Deviation	high			V-B-R
Gas Deviation	CO ₂ O ₂			V-B-R V-B-R
Supply Empty	CO ₂			V-B-R
Door Open				V-B
Electrical and Noise Level				
Power Supply		115V, 1Ø, 60Hz, NEMA 5-15P requires NEMA 5-15R receptacle		
Noise Level ⁴⁾	dB(A)	29		
Options				
SafeCell UV Light System		MCO-170UVS-PA	Included	Included
Hydrogen Peroxide (H ₂ O ₂) Vapor Board		MCO-50HB-PW ⁵⁾	MCO-50HB-PW ⁵⁾	Included ⁵⁾
Outer Door–Password Access Electronic Lock		MCO-170EL-PW ⁵⁾	MCO-170EL-PW ⁵⁾	Included ⁵⁾
H ₂ O ₂ Vapor Generator			MCO-50HP-PW ⁵⁾	
H ₂ O ₂ Reagent	package of 6		MCO-5H2O2-PV	
CO ₂ N ₂ Gas Pressure Regulator	psi		0-15; MCO-100L 0-60; MCO-100N	
Automatic CO ₂ Cylinder Changeover System			MCO-50GC-PW	
4-20mA Analog Output			MCO-420MA-PW	
inCu-safe Shelf			MCO-50ST-PW (stainless steel copper enriched alloy)	
Double Stacking Bracket ⁶⁾		MCO-170PS-PW (two required for stacking three MCO-50 series incubators)		
Roller Base			MCO-50RB-PW	
Stacking Plate			MCO-50SB-PW	
Optional Communication System				
Wireless, Cloud-Based, Automatic Data Management			LabAlert® Monitoring System	
Quality Management System				
Certification			QPS Listed	

¹⁾ Exterior dimensions of main cabinet only, excluding handle and other external projections
²⁾ Current warranty offered at time of printing and may be subject to change; US and Canada only
³⁾ Ambient temperature 23°C, setting 37°C, CO₂ 5%, no load, air temperature measured at incubator center
 • The optimum performance may not be obtained if the ambient temperature is not above 15°C
⁴⁾ Nominal value – Background noise 20 dB(A)
⁵⁾ MCO-50M-PA requires MCO-50HB-PW, MCO-170EL-PW, MCO-50HP-PW and MCO-170UVS-PA for H₂O₂ decontamination
⁶⁾ If stacking two incubators, make sure the double stacking dedicated secure hardware and spacer are used
 Note: Additional options available.

Specifications are subject to change without notice.
 For latest specification information contact PHC Corporation of North America at info@us.phcd.com.
 Performance data herein is based on independent testing at time of publication.

