

MCO-50M-PA

1.8 cu.ft. | 50 L



Multigas (CO₂/O₂) Incubator













MCO-50M-PA

The Cell-IQ MCO-50M-PA multigas incubator is engineered to precisely and accurately control CO_2 , O_2 , 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 SafeCellTM UV light, safely destroys contaminants at the humidification source from behind a plenum wall. A high-speed H_2O_2 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. H_2O_2 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.



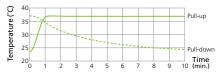
Advanced Touchpanel Controller

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.

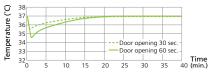
Time-Saving Decontamination

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



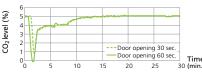
Temperature Recovery



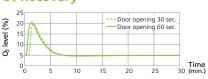
Humidity Recovery



CO₂ Recovery

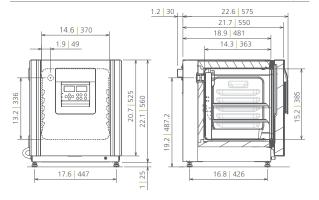


O₂ Recovery



Dimensions





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				:O-50M-PA
Model Number		MCO-50M-PA	With Optional UV Decontamination	With Optional H₂0 Decontamination
External Dimensions (W × D × H) 1)	inches mm	18.9	× 21.7 × 23.0 480 × 550	× 585
Internal Dimensions (W × D × H)	inches mm	14.6 × 14.3 × 15.2 370 × 363 × 385		
Volume	cu.ft. liters		1.8 50	
Net Weight	lbs kg		101 46	
Performance			·	
Varranty 2)			3 years parts and labor	
Femperature Control Range and Fluctuation 3)	°C	+5	above ambient to +50, ±	0.1
Temperature Uniformity 3)	°C		± 0.25	0.1
CO ₂ Control Range and Fluctuation ³⁾	%		0 to 20, ± 0.15	
D 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	numidifying pan)
Control				
Controller		Micro	processor – digital with so	ft kovs
emperature Sensor		Wildo	Thermistor	i keys
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				
		Paint	ad staal (raar savar saatad	stool)
exterior Material nterior Material		Painted steel (rear cover coated steel)		
nterior iviateriai Duter Door	atu	Stainless steel copper enriched alloy		
nner Door	qty	1 · Coolin	1; Field reversible g tempered glass with posi	tive latch
Humidity Pan	49	i, scain	1; Stainless steel	tive later
Shelves	qty	2· Sta		d alloy
Shelf Dimension (W × D × H)	inches mm	2; Stainless steel copper enriched alloy 13.9 × 12.1 × 0.5 353 × 308 × 12		
Max. Load per Shelf	lbs kg	15.9 × 12.1 × 0.5 353 × 306 × 12		
Max. Total Load	lbs kg		30.9 14	
Λax. Shelf Capacity	qty	5		
Access Port / Position	qty	1; On back wall, upper left side		
Access Port Diameter	inches mm	1.2 3	with silicone (non-VOC)	stopper
eveling Feet	qty	4		
Decontamination Control				
nCu-saFe Chamber, Plenum, Shelves, Shelf Channels	passive	Included (stainless steel copper enric	hed allov)
SafeCell UV Light System	passive/active			Included
Hydrogen Peroxide (H ₂ O ₂) Vapor	active	Optional	Optional	Included
Alarms		(V=Visual Alarm, Buz	zer Alarm. R=Remote	Alarm)
Power Failure		(==1)3447444111, 342	R	, ,,
	high		V-B-R	
Gas Deviation	CO ₂ O ₂		V-B-R V-B-R	
Gas Deviation supply Empty				
Gas Deviation Supply Empty Door Open	CO ₂ O ₂		V-B-R V-B-R V-B-R	
Gas Deviation Supply Empty Door Open	CO ₂ O ₂		V-B-R V-B-R V-B-R V-B	
Pemperature Deviation Gas Deviation Supply Empty Door Open Electrical and Noise Level Power Supply	CO ₂ O ₂		V-B-R V-B-R V-B-R V-B 15V, 1Ø, 60Hz, NEMA 5-1	
Gas Deviation Supply Empty Door Open Electrical and Noise Level Power Supply	CO ₂ O ₂ CO ₂		V-B-R V-B-R V-B -R V-B 15V, 1Ø, 60Hz, NEMA 5-1 juires NEMA 5-15R recepta	
isas Deviation upply Empty Door Open Electrical and Noise Level ower Supply Joise Level 4	CO ₂ O ₂		V-B-R V-B-R V-B-R V-B 15V, 1Ø, 60Hz, NEMA 5-1	
Gas Deviation Supply Empty Door Open Electrical and Noise Level Power Supply Hoise Level 40 Doptions	CO ₂ O ₂ CO ₂	rec	V-B-R V-B-R V-B-R V-B 15V, 1Ø, 60Hz, NEMA 5-1 1uires NEMA 5-15R recepta 29	icle
isas Deviation upply Empty Door Open ilectrical and Noise Level ower Supply loise Level 4 Options afeCell UV Light System	CO ₂ O ₂ CO ₂	rec MCO-170UVS-PA	V-B-R V-B-R V-B-R V-B 15V, 1/2, 60Hz, NEMA 5-11 juires NEMA 5-15R recepta 29	Included
isas Deviation upply Empty Door Open clectrical and Noise Level cover Supply loise Level 4 Options afeCell UV Light System lydrogen Peroxide (H ₂ O ₂) Vapor Board	CO ₂ O ₂ CO ₂	MCO-170UVS-PA MCO-50HB-PW ⁽⁵⁾	V-B-R V-B-R V-B V-B 15V, 107, 60Hz, NEMA 5-11 juires NEMA 5-15R recepta 29 Included MCO-50HB-PW ⁽³⁾	Included Included 5)
isas Deviation upply Empty Door Open electrical and Noise Level lower Supply loise Level 4 Options afeCell UV Light System lydrogen Peroxide (H ₂ O ₂) Vapor Board Duter Door-Password Access Electronic Lock	CO ₂ O ₂ CO ₂	rec MCO-170UVS-PA	V-B-R V-B-R V-B V-B 15V, 107, 60Hz, NEMA 5-11 uuires NEMA 5-15R recepta 29 Included MCO-50HB-PW ⁹ MCO-170EL-PW ⁹	Included
Gas Deviation upply Empty Door Open clectrical and Noise Level loise Level 4 Options afeCell UV Light System tydrogen Peroxide (H ₂ O ₂) Vapor Board Duter Door-Password Access Electronic Lock H ₂ O ₂ Vapor Generator	CO ₂ O ₂ CO ₂	MCO-170UVS-PA MCO-50HB-PW ⁽⁵⁾	V-B-R V-B-R V-B V-B V-B 15V, 1Ø, 60Hz, NEMA 5-11 uires NEMA 5-15R recepta 29 Included MCO-50HB-PW ⁹ MCO-170EL-PW ⁹ MCO-50HP-PW ⁹	Included Included 5)
ias Deviation upply Empty foor Open ilectrical and Noise Level ower Supply loise Level 4 Options afeCell UV Light System lydrogen Peroxide (H ₂ O ₂) Vapor Board outer Door–Password Access Electronic Lock EO ₂ Vapor Generator	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B V-B V-B 15V, 1Ø, 60Hz, NEMA 5-11 uires NEMA 5-15R recepta 29 Included MCO-50HB-PW ³ MCO-170EL-PW ³ MCO-50HP-PW ³ MCO-512O2-PV	Included Included ³⁰ Included ⁹
ias Deviation upply Empty foor Open ilectrical and Noise Level ower Supply foise Level 4 Options afeCell UV Light System flydrogen Peroxide (H ₂ O ₂) Vapor Board outer Door–Password Access Electronic Lock EiO ₂ Vapor Generator EiO ₃ Reagent OO ₂ N ₂ Gas Pressure Regulator	CO ₂ O ₂ CO ₂	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B R V-B 15V, 1Ø, 60Hz, NEMA 5-1; uires NEMA 5-15R recepts 29 Included MCO-50HB-PW ³ MCO-170EL-PW ³ MCO-50HP-PW ³ MCO-5H2OZ-PV ; MCO-100L 0-60; MCO-	Included Included ³⁰ Included ⁹
cas Deviation upply Empty Door Open Electrical and Noise Level Cower Supply Loise Level Options afeCell UV Light System Hydrogen Peroxide (H ₂ O ₂) Vapor Board Duter Door–Password Access Electronic Lock 1:02 Vapor Generator 1:02 Reagent 1:03 N ₂ Gas Pressure Regulator Automatic CO ₂ Cylinder Changeover System	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B R V-B V-B 15V, 1Ø, 60Hz, NEMA 5-1; uires NEMA 5-15R recepts 29 Included MCO-50HB-PW ³ MCO-170EL-PW ³ MCO-50HP-PW ³ MCO-50HP-PW ³ MCO-50HP-PW ³ MCO-50HP-PW ³ MCO-50HP-PW ³	Included Included ³⁰ Included ⁹
Sas Deviation upply Empty Door Open Sectrical and Noise Level Ower Supply Jose Level Options Jose Level Options Jose Level Jose Level Options Jose	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵ MCO-170EL-PW ⁵	V-B-R V-B-R V-B V-B V-B 15V, 1Ø, 60Hz, NEMA 5-11; ujures NEMA 5-15R recepte 29 Included MCO-50HB-PW ³ MCO-50H2-PW ³ MCO-50H2-PW ³ MCO-5H2O2-PV ; MCO-100L 0-60; MCO-MCO-50GC-PW MCO-420MA-PW	Included Included 9 Included 9
Cos Deviation upply Empty Door Open Sectrical and Noise Level ower Supply doise Level 4 Options afeCell UV Light System dydrogen Peroxide (H ₂ O ₂) Vapor Board Duter Door-Password Access Electronic Lock 16:O Vapor Generator 16:O: Reagent 16:O: Reagent 16:O: Que Gas Pressure Regulator Automatic CO: Cylinder Changeover System 16:O: OmA Analog Output 16:O: SaFe Shelf	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B V-B V-B 15V, 1Ø, 60Hz, NEMA 5-11; uires NEMA 5-15R recepta 29 Included MCO-50HB-PW ³⁾ MCO-5170EL-PW ³⁾ MCO-50HP-PW ³⁾ MCO-5H2O2-PV ; MCO-100L 0-60; MCO-MCO-50GC-PW MCO-420MA-PW W (stainless steel copper e	Included Included 9 Included 9 Included 9 Included 9
Sas Deviation Supply Empty Door Open Electrical and Noise Level Power Supply Noise Level Options SafeCell UV Light System Advorgen Peroxide (H ₂ O ₂) Vapor Board Duter Door-Password Access Electronic Lock H-O ₂ Vapor Generator H-O ₃ Reagent CO ₂ N ₃ Gas Pressure Regulator Automatic CO ₃ Cylinder Changeover System H-20mA Analog Output nCu-safe Shelf Double Stacking Bracket ©	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B V-B V-B 15V, 1Ø, 60Hz, NEMA 5-1: 115V, 1Ø, 60Hz, NEMA 5-	Included Included 9 Included 9 Included 9 Included 9
Sas Deviation Supply Empty Door Open Electrical and Noise Level Power Supply Noise Level Options SafeCell UV Light System Aydrogen Peroxide (H ₂ O ₂) Vapor Board Duter Door-Password Access Electronic Lock H-O ₂ Vapor Generator H-O ₂ Reagent CO ₂ N ₂ Gas Pressure Regulator Automatic CO ₂ Cylinder Changeover System H-20mA Analog Output ncu-safe Shelf Double Stacking Bracket ® Noiler Base	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B-R V-B V-B 15V, 1Ø, 60Hz, NEMA 5-1: 115V, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø	Included Included 9 Included 9 Included 9 Included 9
Sas Deviation Supply Empty Door Open Selectrical and Noise Level Power Supply Noise Level Options SafeCell UV Light System Advorgen Peroxide (H ₂ O ₂) Vapor Board Duter Door-Password Access Electronic Lock H-O ₂ Vapor Generator H-O ₃ Reagent CO ₂ N ₃ Gas Pressure Regulator Automatic CO ₃ Cylinder Changeover System H-20mA Analog Output nCu-safe Shelf Double Stacking Bracket © Noiler Base Stacking Plate	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B V-B V-B 15V, 1Ø, 60Hz, NEMA 5-1: 115V, 1Ø, 60Hz, NEMA 5-	Included Included 50 Included 50 Included 50 Included 50 Included 50
Cosa Deviation upply Empty Door Open Selectrical and Noise Level ower Supply Joise Level Options Jordan Selected (H2O2) Vapor Board Opter Door-Password Access Electronic Lock H2O2 Vapor Generator H2O2 Reagent LO2 N2 Gas Pressure Regulator Automatic CO2 Cylinder Changeover System L-20mA Analog Output nCu-safe Shelf Double Stacking Bracket (Incomplete Stacking Bracket) Jordan Lock (Incomplete Stacking Bracket)	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ⁵⁾ MCO-170EL-PW ⁵⁾	V-B-R V-B-R V-B-R V-B V-B 15V, 1Ø, 60Hz, NEMA 5-1: 115V, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø	Included Included 9 Included 9 Included 9 Included 9
isas Deviation upply Empty toor Open Ilectrical and Noise Level ower Supply loise Level 4 Options afeCell UV Light System lydrogen Peroxide (H ₂ O ₂) Vapor Board outer Door-Password Access Electronic Lock LiO ₂ Vapor Generator LiO ₂ Reagent LiO ₂ N. Gas Pressure Regulator automatic CO ₂ Cylinder Changeover System -20mA Analog Output nCu-safe Shelf ooble Stacking Bracket 4 oller Base tacking Plate	CO ₂ O ₂ CO ₂ CO ₂ dB(A)	MCO-170UVS-PA MCO-50HB-PW ^(s) MCO-170EL-PW ^(s) 0-15 MCO-50ST-P MCO-170PS-PW (two rec	V-B-R V-B-R V-B-R V-B V-B 15V, 1Ø, 60Hz, NEMA 5-1: 115V, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø, 1Ø	Included Included ³⁰ Include

- Exterior dimensions of main cabinet only, excluding handle and other external projections

- ⁹ Exterior dimensions on main cabinet only, excluding handle and otner external projections
 ⁹ Current warranty offered at time of printing and may be subject to change; US and Canada only
 ⁹ Ambient temperature 23°C, setting 37°C, CO, 5%, no load, air temperature measured at incubator center
 ^e The optimum performance may not be obtained if the ambient temperature is not above 15°C
 ^e Nominal value Background noise 20 dB(A)
 ⁹ MCO-50M-PA requires MCO-50HB-PW, MCO-170EL-PW, MCO-50HP-PW and MCO-170UVS-PA for H₂O₂ decontamination
 ⁹ 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.phchd.com. Performance data herein is based on independent testing at time of publication.