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.

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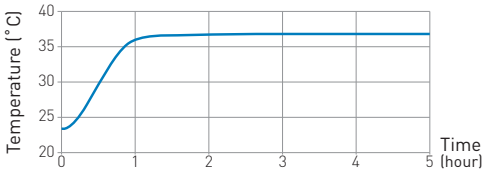
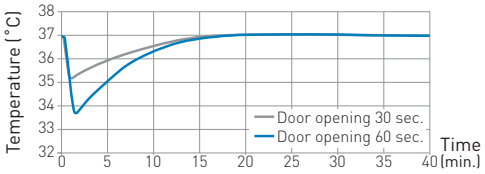
## Performance Data*

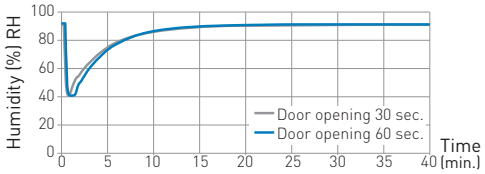
### Temperature pull-up characteristics



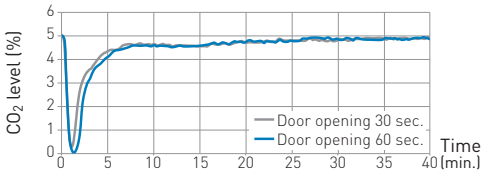

### Temperature recovery characteristics




### Humidity recovery characteristics

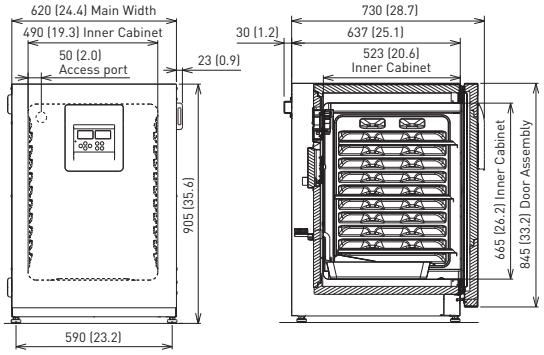



### $CO_2$ level recovery characteristics




## 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.

**Preservation Equipment, Experimental Environment Equipment, Dispensary Equipment, Culturing Equipment and Drying & Sterilising Equipment for General Laboratory use**
The management of the design, development, production and servicing of the above.

**Freezers, Refrigerators, Incubators, and Drying and Sterilising Equipment for Medical use**
The management of the design, development, production and distribution of the above.

PHC Corporation, Biomedical Division is certified for:
**Environmental management system: ISO14001**

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