Multigas Incubators

Optimizing cell culture productivity
Ideal for various cell culture needs that require CO₂ and sub-ambient or above-ambient oxygen control.

Consistent and uniform environment
- Multi-level contamination control with hydrogen peroxide (H₂O₂) decontamination control, SafeCell UV, inCu-saFe interior & Active Background Contamination control.
- Direct Heat and Air Jacket System for accurate temperature control.
- Dual IR sensor for precise CO₂ control and recovery.
- A solid zirconia oxygen sensor maintains sub-ambient O₂ levels.

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 mitigate the effect of airborne contaminates introduced through normal use.

Germicidal Interior

<table>
<thead>
<tr>
<th>Mycoplasma Stain</th>
<th>Positive Control</th>
<th>Conventional Stainless Steel 304</th>
<th>PHCbi inCu-saFe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycoplasma fermentans</td>
<td>-resistant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mycoplasma orale CH25299</td>
<td>resistant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mycoplasma arginini 0230</td>
<td>resistant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mycoplasma hominis PG21</td>
<td>resistant</td>
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</tbody>
</table>

Contaminant Growth
- No Contaminant Growth

Active Background Contamination Control
- Airflow
- Humidity Reservoir
- UV Light
- Airflow and water pan decontamination using a UV system

Efficient Decontamination

Time comparison between the H₂O₂ decontamination process and sterilization at above 180°C (Efficacy evaluation of sterilization techniques utilized by several cell culture incubators)

Rapid, Effective and Safe H₂O₂ Decontamination Cycle*
PHCbi's unique high-speed decontamination system uses vaporized H₂O₂ and UV light to safely clean the chamber in less than three hours. This technology provides 100% kill rate with at least 6 log reduction of major contaminants* (e.g. mycoplasma orale, staphylococcus aureus, candida albicans, etc.).
*Based on an independent study

The optional MCO-170UVS will add the UV function.
The optional MCO-170HB and MCO-170EL will add the H₂O₂ decontamination function.

LCD Touch Panel Controller
A WVGA Color LCD touch panel delivers full control over different protocols. Auto-lock can be set with the optional electric door lock MCO-170EL. The access can be limited, controlled, and traced by setting User-IDs and Passwords.

Security
- Responds to gloved finger action

USB port
- Control Panel with single-user Key Lock (Standard)
- USB port for easy data transfers

Integrated Tray Catches
Tray catches are integral parts of the chamber, opening up more space for trays by reducing 80% of the parts to accommodate more culture containers. [Comparison with MCO-19M]
**Multigas Incubators**

**MCO-170M | MCO-170ML**

**Precise CO₂ Control**

- A single beam dual detector infrared CO₂ system offers unprecedented control accuracy and stability by simultaneously measuring two wavelengths for continuous zero calibration.
- Benefits include ultra-fast recovery without overshoot and accurate CO₂ averages during periods of frequent incubator access with multiple door openings.

**Zirconia O₂ Control**

For the Multigas Incubator, a solid zirconia oxygen sensor maintains sub-ambient O₂ levels with high degree of precision. It has a long service life and has fast response to door openings.

**Performance Data**

**DISTRIBUTED BY:**

PHC Corporation, Biomedical Division
1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma 370-0596, Japan

**Dimensions Unit:** mm (inch)

- **Inner Cabinet:** 523 (20.6) mm
- **Door:** 845 (33.3) mm (without N₂ bubbling)
- **Main Height:** 620 (24.4) mm
- **Main Width:** 665 (26.2) mm
- **Main Depth:** 905 (35.6) mm

**Double-stacking Matching Table**

| Upper unit | MCO-2350SC/160 | MCO-2350B | MCO-2100C/160 | MCO-2100B |
| Lower unit | MCO-2350SC/160 | MCO-2350B | MCO-2100C/160 | MCO-2100B |

**Specifications and Optional Accessories**

- **CO₂ Gas pressure:** 0.5 – 0.10 MPa (G) (0.5 – 1.0 Kgf/cm²)
- **O₂ Gas pressure:** 0.05 – 0.10 MPa (G) (0.5 – 1.0 Kgf/cm²)
- **Exterior dimensions (W x D x H):** 490 x 520 x 660 (mm) / 19.3 x 20.4 x 26.2 (inch)
- **Volume:** 161 liters / 5.6 cubic feet
- **Weight:** 73 kg / 161 lbs

**Performance Data**

- **Humidity recovery characteristics:**
  - 95% ±5% R.H. at 37°C by natural evaporation with humidifying pan
  - 93% ±5% R.H. at 37°C by natural evaporation with humidifying pan

- **Temperature control uniformity:** ±0.25°C (23°C ambient, setting: 37°C, CO₂: 5%, O₂: 5%, no load)

- **CO₂ level recovery characteristics:**
  - ±0.25% (23°C ambient, setting: 37°C, CO₂: 5%, O₂: 5%, no load)

- **O₂ level recovery characteristics:**
  - ±1% (23°C ambient, setting: 37°C, CO₂: 5%, O₂: 5%, no load)

**Optional Accessories**

- **UV system set**
  - MCO-170HV
  - MCO-170SB
  - MCO-170EL
  - MCO-170I

- **Gas auto changer**
  - MCO-010R
  - MCO-21GC

- **H₂O₂ Decontamination System**
  - MCO-H₂O₂
  - MCO-170RB

- **Direct Heat & Air Jacket (DHA) Heating System**
  - MCO-170PS

**PHC Corporation, Biomedical Division**

- **Environmental management system:** ISO14001