

Direct Heat & Air Jacket™ CO₂ Incubator - MCO-18AIC MCO-36AIC

MCO-18AIC
6.0 CU. FT.



MCO-36AIC
12.0 CU. FT.



SUPERIOR CO₂, TEMPERATURE AND CONTAMINATION CONTROL

- SANYO Laboratory CO₂ Incubators are designed for a wide range of applications in biomedical, pharmaceutical and clinical laboratories.
- SANYO is known for innovative and exclusive contamination control features, such as inCu saFe™, a copper enriched stainless steel alloy with inherent germicidal protection against contaminants.
- Patented Direct Heat & Air Jacket™ temperature control ensures for accurate and uniform chamber temperature and CO₂ levels.
- Fast Recovery of the CO₂ level is due to the effective combination of an infrared CO₂ sensor and P.I.D. (Proportional, Integrated and Differential) control.

FEATURE	BENEFIT
inCu saFe™ Interior	Copper-enriched stainless steel interior surfaces provide preventative germicidal protection
Direct Heat and Air Jacket™ Temperature Control	Patented, radiant wall heating with air jacket technology is microprocessor controlled to maintain temperature uniformity and optimum humidity
CO ₂ Control/IR Sensor	The ceramic based IR sensor is maintenance free with no moving parts

TECHNOLOGY

- inCu saFe™ Construction for Germicidal Protection
- Direct Heat and Air Jacket™ Heating System
- Precise and reliable P.I.D. Temperature Control
- Precise Infrared (IR) Sensor CO₂ Control

InCu saFe™ is selected to provide natural germicidal protection without rust or corrosion. InCu saFe™ expresses a natural germicidal attribute to inhibit the growth of mold, fungi, mycoplasma and bacteria. Interior components, including the air flow plenum, shelf supports, humidity pan and blower wheel assembly are easily removable without tools if necessary. When components are removed, all interior surfaces are exposed for conventional cleaning wipe down. Large coved corners and electro-polished surfaces are easy to clean.

The U.S. patented Direct Heat and Air Jacket™ surrounds the inner walls with a natural convection airflow that converts to radiant wall heat through thermal conduction. This technique achieves accurate, uniform and highly responsive temperature control within the chamber. The microprocessor controller directs proportional distribution of power to independent heating sources surrounding the chamber. Arranged in three zones, each zone is controlled by the microprocessor which manages continuous feedback from the incubator chamber sensors via a P.I.D. control algorithm.

The SANYO MCO-18AIC and MCO-36AIC uses a unique ceramic based infrared sensor system to maintain precise CO₂ control regardless of temperature and relative humidity changes within the incubator chamber. Sensor stability is especially useful following door openings while temperature and humidity return to equilibrium.

*Direct Heat and Air Jacket™ U.S. Patent 5519188;

**inCu saFe Direct Heat and Air Jacket™, P.I.D./R™ are trademarks of SANYO Electric Biomedical Co., Ltd.

i n c u b a t i o n

ANTI-CONTAMINATION DESIGN BENEFITS

- Circulation blower and CO₂ injection cuts off when door is opened, keeping contaminated ambient air from being drawn into the chamber.
- Full rounded corners in the interior chamber are constructed of electro-polished copper-alloy-stainless steel. Copper-alloy-stainless plenums, shelves and brackets extend contamination control to the chamber interior. All are easily removed for cleaning.

CONTROL, ALARM & MONITORING

A range of setpoint, alarm and programmable inputs are established through the use of intuitive keypad. Extra large digital displays are easy to read.



- Tactile feedback, touch pad and entry keys simplify operation.
- Standard parameters are factory-set for quick start-up, and all parameters can be changed as required.
- A remote alarm terminal mounted at the rear of the cabinet can be connected to an external remote alarm system.

WATER PAN LEVEL SENSOR

The humidity pan has an optical water level sensor to warn of a low water pan level.

FIELD-REVERSIBLE DOOR

The reversible door allows right or left opening depending on the installation space and how other peripheral equipment is positioned. Each corner of the door has a special grip for easier opening.

IMPROVED TEMPERATURE STABILITY WITH DHA SYSTEM

Three independently controlled heaters plus SANYO's proprietary air jacket structure provides a high-precision temperature environment.

AUTOMATIC CO₂ CYLINDER SWITCHOVER SYSTEM (OPTION)

This system automatically switches from the primary to secondary gas cylinder when a CO₂ gas level drop in the chamber is detected. The in-use gas cylinder is confirmed on the control panel.

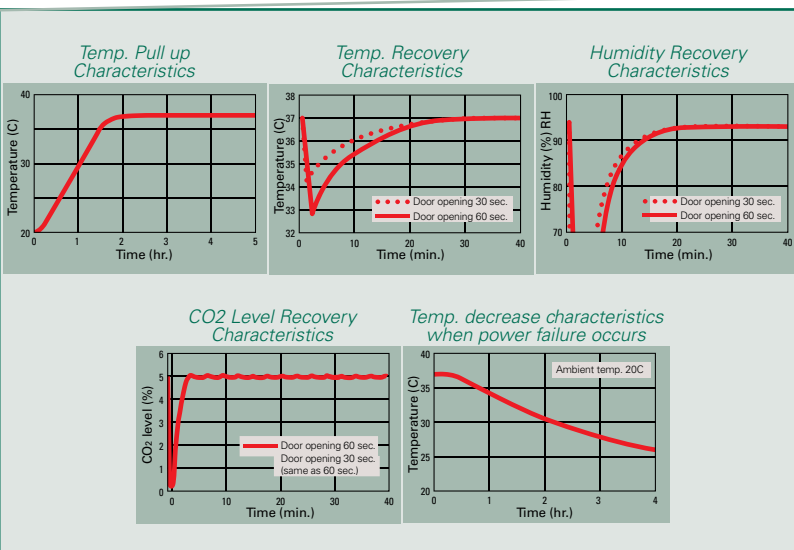
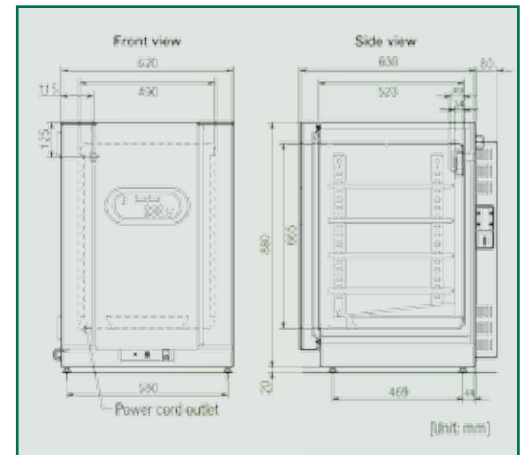
ERGONOMIC DESIGN

Low profile, stackable design for efficient use of available laboratory space. User-friendly door mounted control panel is easy to use and access.

Specifications

MCO-18AIC		
Exterior dimensions (WxDxH)	24.4" x 28.0" x 35.4" (620 x 710 x 900 mm)	
Interior dimensions (WxDxH)	19.3" x 20.6" x 26.2" (490 x 528 x 665 mm)	
Interior volume	6.0 cu. ft. (170L)	
Net Weight	205lbs. (93kg)	
Temperature	Heating Method	Direct heat & Air jacket (DHA)
	Temp. control system	Microprocessor PID
	Temp. range	5°C above ambient temperature to +50°C (Ambient temp.: +5°C to 35°C)
	Temp. uniformity	±0.25°C*
CO ₂	Temp. controllability	±0.1°C*
	CO ₂ control system	Microprocessor PID
	CO ₂ sensor	Infrared
	CO ₂ range	0 to 20%
Humidity	CO ₂ controllability	±0.15%*
	Humidifying system	Natural evaporation by water in humidity pan over bottom heater (with water level sensor)
Shelves	Chamber humidity	95 ± 5%RH
	Shelves (WxDxH)	12.7" x 12.7" x .47" (450 x 450 x 12 mm)
	Shelf material	Copper Alloy stainless steel
	Maximum load	15.4 lbs. per shelf (7kg)
Contamination control	Shelves	4(standard)
	Interior surface	Copper Alloy stainless steel
Access port	1.2" diameter (30mm)	
Alarm system	High/low temperature, CO ₂ level, door and UV lamp failure, independent overheat protection	
Remote alarm contacts	30V DC, 2A allowable	
Options	CO ₂ pressure regulator (MCO-100L) InCu-saFe shelf (MCO-46ST) Automatic CO ₂ cylinder switchover system (MCO-21GC) Roller base (MCO-18RB)	

* Conditions: Ambient temperature: 25°C, Temperature setting: 37°C, CO₂ level setting: 5%, no load.



SANYO

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