


## Options


## CO<sub>2</sub>/MULTI-GAS INCUBATOR

**Gas Pressure Regulator**  
**IM-055**



Dual-stage regulator with easy-to-read meters, optimum for use with an incubator.  
Easy fine adjustment in the low-pressure range.  
Primary pressure gauge 0~25Mpa  
Secondary pressure gauge 0~0.3Mpa

**Auto Gas Analyzer**  
**AGA-2008**



Auto Gas Analyzer is equipped with a rechargeable built-in battery and can measure both CO<sub>2</sub> and O<sub>2</sub> concentration.  
CO<sub>2</sub> measuring range 0~18.0%  
O<sub>2</sub> measuring range 0~22.0%  
Dimensions W150×D280×H187mm  
Weight 4.5Kg  
Power supply AC100V1A

**163-Liter Incubator Pedestals**  
**IM-011/IM-033**



163-liter incubators can be secured on stable pedestals. Tools for securing the pedestal onto the floor or wall are also available.

**Shelves and Shelf Brackets**



Shelves made of stainless steel, sturdy with smooth surface. Shelf brackets come in a set of two and are easy to install.

SCA/SMA-165 Shelf	165001
SCA/SMA-165 Brackets	165002(2/set)
SCA/SMA-80 Shelf	800001
SCA/SMA-80 Brackets	800002(2/set)

**Shelf Doors**



Shelf doors minimize the drastic change in the environment inside the chamber and reduce the amount of gas consumption and the risk of contamination.

SCA/SMA-165 IM-102(2pcs) W451×H234mm×2pcs
IM-103(3pcs) W451×H155mm×3pcs
IM-104(4pcs) W451×H116mm×4pcs
IM-100(6pcs) W451×H77mm×6pcs
SCA/SMA-80 IM-802(2pcs) W363×H184mm×2pcs
IM-804(4pcs) W363×H91mm×4pcs

**Air Filter Kits**



IF-200(for SCA/SMA-165Models)  
IF-80(for SCA/SMA-80Models)


The optional 0.3μ glass paper air dust filters capture dust particles and fungus spores circulating in the chamber, reducing the risk of contamination.  
Replacement Air Dust Filter IF-15

**Gas Guard System**  
**GS-701**



Gas Guard System automatically switches to a backup tank when the tank in use runs out of gas. It is equipped with audio and visual alarms and can also be operated manually.  
Dimensions W210×D390×H94mm  
Weight 4.5Kg  
Power Supply AC100V1A

**80-Liter Incubator Pedestals**  
**IM-811/IM-833**



80-liter incubators can be secured on stable pedestals. Tools for securing the pedestal onto the floor or wall are also available.

**Half-Sized Trays (for SCA/SMA-165 Models)**



Two half-sized trays can fit into each level of shelves and are available in aluminum and stainless steel. Lightweight and easy to handle, they greatly improve working efficiency.

Aluminum Half Tray	165003
Stainless Steel Half Tray	165008

**Glass Small Windows**  
**GAW-165DH** Available for 165 models only



Optional glass small windows minimize the change in the environment inside and can accommodate to high temperature during heat sterilization.

No. of windows 3  
Window size W377×H126mm  
Type of glass 14mm tempered glass



SCA/SMA Series

# DIRECT HEAT CO<sub>2</sub>/MULTI-GAS INCUBATOR



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Design and specifications of these products are subject to change without prior notice.



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# From research laboratories to industrial facilities, ASTEC's wide variety of versatile CO<sub>2</sub>/Multi-Gas incubators will meet ever-changing customer needs!

80L Type

## 1 Direct Heat Temperature Control

Fast and easy set up

## 2 Air Filter(Optional)

The optional air dust filter for the air inlet of the inner chamber fan captures dust particles circulating inside the chamber effectively. It is available for all models.

## 3 Dry Heat Sterilization

The DS/DRS models are equipped with the Dry Heat Sterilization Feature, enabling the simple, effective sterilization of the inner chamber after cleaning or changing samples.

## 4 Auto Setup and Auto CO<sub>2</sub> Calibration Functions

With the Auto Setup Function, the unit is ready to use in 12 hours with precisely controlled CO<sub>2</sub> concentration. The models equipped with the IR sensor can be calibrated with the optional Automatic Two-Point CO<sub>2</sub> Calibration Function. The IR sensor is calibrated regularly to reset the zero point.

## 5 Wide Variety of Capacities and Features

In addition to the standard CO<sub>2</sub> models, new multi-gas models have been introduced to our product lineup! With 2 types of gas control, 2 types of sensor and the Dry Heat Sterilization feature, there are 16 models to choose from, to accommodate your needs.

## 6 Stackable

The SCA/SMA series incubators can be stacked in places where space is limited, and yet the Dry Heat Sterilization of one will not affect the performances of the other (note: a stacking kit is required for double-stacking).

## 7 Access Port

The 163L models come standard with an access port to provide power or to introduce air into the inner chamber (note: for the 80L models, an access port can be selected as a factory option).

## 8 Shelf Doors

The multi-gas models come standard with shelf doors, which are designed to minimize the environmental change inside the chamber by door opening (shelf doors are optional for CO<sub>2</sub> models). Note: The number of shelf doors in a set can be selected. Please refer to the options section on the back page for more details.



Image: SCA-165DS



Image: SCA-80DS (top), SMA-80D (bottom)

### SCA/SMA-165 Specifications (Dimensions unit = mm)

Model	Dry Heat Sterilization Type		Standard Type	
	CO <sub>2</sub> Type	Multi-Gas Type	CO <sub>2</sub> Type	Multi-Gas Type
	SCA-165DS	SMA-165DS	SCA-165DR	SMA-165DR
CO <sub>2</sub> Sensor	Thermistor	IR Sensor	Thermistor	IR Sensor
O <sub>2</sub> Sensor	Galvanic battery			
Outer Dimensions	W 625 × D 635 × H 915			
Inner Chamber Dimensions	W 510 × D 500 × H 640			
Shelf Dimensions	W 430 × D 430 × H 15			
No. of Shelves	4 (Max. 19 / 18 when the air filter is used)			
Capacity	163L			
Temp. Control Range	Ambient temp. + 5°C - 50.0°C			
Temp. Control Accuracy	±0.1°C (ambient temp. + 5°C - 50.0°C)			
Temp. Accuracy	±0.3°C (ambient temp. + 5°C - 50.0°C)			
Sterilization Temp.	60°C to 140°C (1.0°C increment)			
Sterilization Temp. Accuracy	±3.0°C			
Sterilization Time	30 minutes - 10 hours			
CO <sub>2</sub> Control Range	0% ~ 20.0%			
CO <sub>2</sub> Stability	±0.1%			
O <sub>2</sub> Control Range	2% ~ 80.0%			
O <sub>2</sub> Stability	±0.5%			
Humidity	95±3%RH, natural evaporation			
Safety Cut	Over temperature stop (software/thermostat)			
Options	Alarm contact output (DC12V 0.3A), etc.			
Weight	85kg		80kg	
Power	AC100V Max9A 50Hz/60Hz (AC110/115/220/230/240V available with internal transformer)			

### SCA/SMA-80 Specifications (Dimensions unit = mm)

Model	Dry Heat Sterilization Type		Standard Type	
	CO <sub>2</sub> Type	Multi-Gas Type	CO <sub>2</sub> Type	Multi-Gas Type
	SCA-80DS	SMA-80DS	SCA-80DR	SMA-80DR
CO <sub>2</sub> Sensor	Thermistor	IR Sensor	Thermistor	IR Sensor
O <sub>2</sub> Sensor	Galvanic battery			
Outer Dimensions	W 533 × D 506 × H 760			
Inner Chamber Dimensions	W 418 × D 377 × H 510			
Shelf Dimensions	W 350 × D 350 × H 11			
No. of Shelves	4 (Max. 13 / 11 when the air filter is used)			
Capacity	80L			
Temp. Control Range	Ambient temp. + 5°C - 50.0°C			
Temp. Control Accuracy	±0.1°C (ambient temp. + 5°C - 50.0°C)			
Temp. Accuracy	±0.3°C (ambient temp. + 5°C - 50.0°C)			
Sterilization Temp.	60°C to 140°C (1.0°C increment)			
Sterilization Temp. Accuracy	±3.0°C			
Sterilization Time	30 minutes - 10 hours			
CO <sub>2</sub> Control Range	0% ~ 20.0%			
CO <sub>2</sub> Stability	±0.1%			
O <sub>2</sub> Control Range	2% ~ 80.0%			
O <sub>2</sub> Stability	±0.5%			
Humidity	95±3%RH, natural evaporation			
Safety Cut	Over temperature stop (software/thermostat)			
Options	Alarm contact output (DC12V 0.3A), etc.			
Weight	63kg			
Power	AC100V Max7A 50Hz/60Hz (AC110/115/220/230/240V available with internal transformer)			

※ Applicable to multi-gas models only.

## Four Models to Suit Your Needs

**D Standard Type**  
Cost-effective air-jacketed incubator at a very reasonable price

**DR IR Sensor**  
Unaffected by the temperature and humidity changes inside the chamber, the IR sensor controls the CO<sub>2</sub> concentration precisely and maintains the optimum cell culture environment.

**DS Dry Heat Sterilization Feature**  
With programmable sterilization temperature (max. 140°C) and time (max. 10 hours), the Dry Heat Sterilization Feature is an easy and effective tool against contamination.

**DRS IR Sensor + Dry Heat Sterilization**  
High-grade model equipped with the combined advantages of the IR sensor and Dry Heat Sterilization Feature.

### ● Dry Heat Sterilization Effectiveness Test

**Test Incubator** : Direct Heat CO<sub>2</sub> Incubator SCA-165DS  
**Test Summary** : Two biological indicators (details below) were placed at the center of the inner chamber, and the incubator's Dry Heat Sterilization Feature was set into operation. Upon the completion of the operation, the biological indicators were removed from the inner chamber of the incubator. One was used for live bacterial count while the other was inoculated in culture medium. The latter was later inspected for bacterial growth after having been incubated for 72 hours at 37°C.  
**Biological Indicator** : Bacillus Subtilis ("Mekkin Tesper G," Eiken Kizai Co., Ltd., 1 x 10<sup>6</sup>/sheet)  
**Culture Medium Used and Culture Conditions** : Culture Medium for Bacterial Count: Standard agar medium (Eiken Kizai Co., Ltd.), 37°C±1°C, 72 hours  
 Culture Medium for Bacteria Incubation: Tryptsoy bouillon medium (Eiken Kizai Co., Ltd.), 37°C±1°C, 72 hours

### ■ Result of Live Bacterial Count per Biological Indicator

140°C	Subject	<10
2H	Control	1.6×10 <sup>6</sup>
140°C	Subject	<10
1H	Control	1.6×10 <sup>6</sup>

Control: Untreated biological indicator

### ■ Result of Biological Indicator Incubation

140°C	Subject	—
2H	Control	+
140°C	Subject	—
1H	Control	+

Control: Untreated biological indicator +: Bacterial growth detected. —: No bacterial growth detected.