

## s@fegrow 188

EuroClone CO<sub>2</sub> incubator, the best in its class

More than a new tool: an environment with unique and unmatched features for your cell cultures.



The New EuroClone S@feGrow 188 Direct Heat CO<sub>2</sub> Incubator, equipped with an “on-demand” decontamination cycle, is designed to provide a stable and convenient environment for Cell and Tissue culture, taking into consideration the most stringent needs of the cell biologists, for both continuous and batch cultures. The S@feGrow 188 maintains an accurate CO<sub>2</sub> gas percentage, uniform temperature and a consistently high level of humidity providing a stable culturing environment, even for most critical applications like IVF and Hybridoma cultures.

### **Best in its class: large usable capacity and maximum space for your cultures**

At the very heart of the S@feGrow 188 CO<sub>2</sub> incubator is the large internal capacity of 188.6 litres, corresponding to an actual available space of 140 litres, unmatched in the industry, thanks to a specially designed rack and 4 shelves system that provides a usable surface of 0.23 sqm per shelf.

### **Best in its class: culturing environment guaranteed**

The accurate and precise temperature is maintained by means of 4 independently controlled and validated “Direct Heating” elements, located on all 6 sides of the chamber, able to measure and control temperature down to 0.1 degree of the set value. Precise CO<sub>2</sub> percentage is maintained by a state-of-the-art IR sensor and controller system, that is independent from the humidity of the culturing environment. Humidity is passively maintained at 95% , thanks to a 2.5 litres stainless steel humidity tray, heated by the base heater. Finally, the unit has a built-in “on-demand” decontamination cycle programme, for absolute safety.



An elegantly crafted standard control panel and display, for your convenience ...

Programmable audio-visual alarm, warning "parameter out of range". Autoreset after chamber condition recovery.

Large 2 x 24 message centre, with alpha numeric display for setup and status information



Temperature display in steps of 0.1°C

Mode key to enter programmable parameters

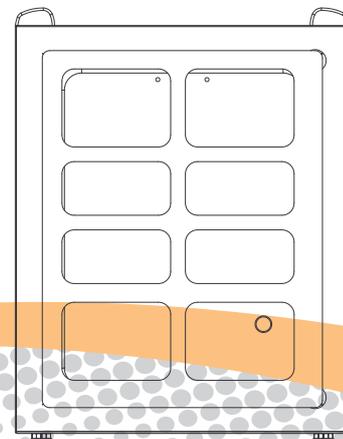
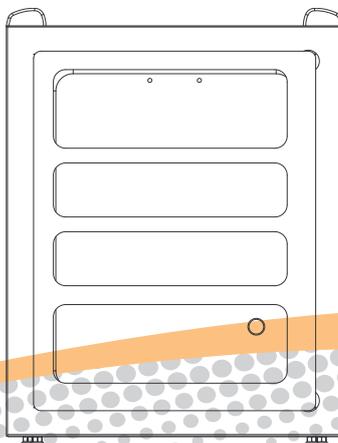
Scroll keys for selection of the parameters

CO<sub>2</sub> display in steps of 0.1%

In case of specific application requirements, your S@fegrow 188 can be conveniently customized



The diagram shows the Multi-position Shelf Rack Set, allowing the use of 8 shelves (maximum capacity)



The unit can be ordered with an inner glass door, which in turn can be fitted with 4/8 smaller doors system providing easier access to single sections of the chamber

## Comfort for your cultures is guaranteed ...

### Precise control and recovery of set temperature

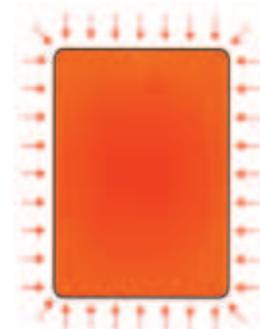
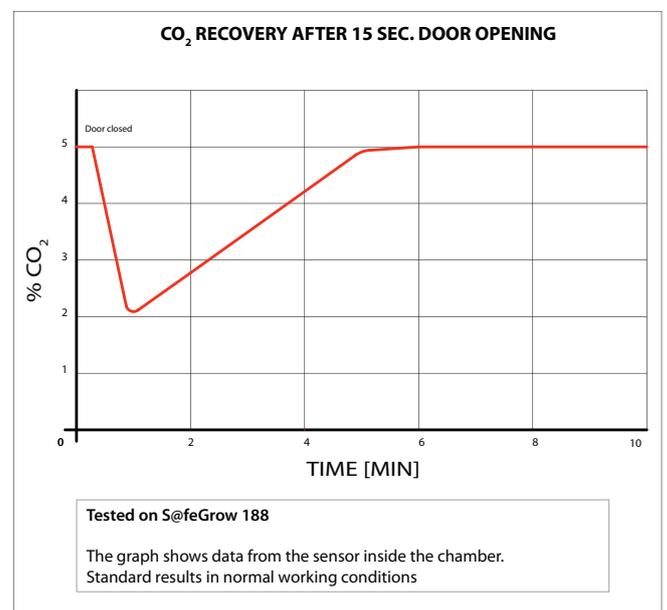
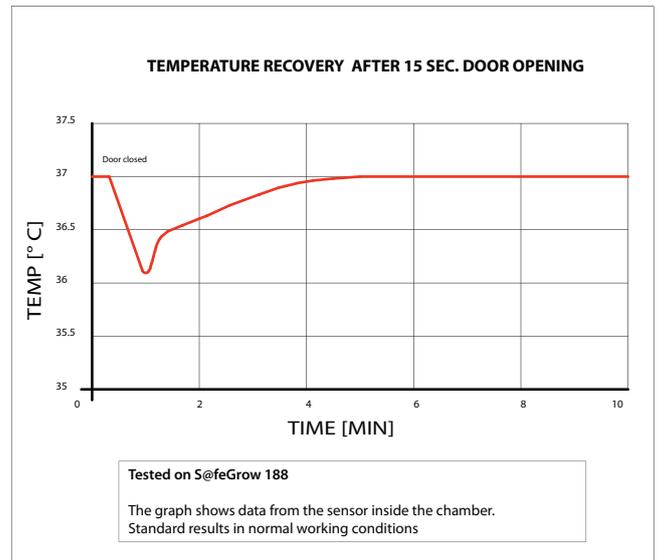
The accurate and precise temperature is maintained by means of a 4 sections independently controlled and validated Direct Heater system. A total of 73 meters of heating elements ensure even heating of all internal surfaces (chamber, front frame and door inner side); on top of this, a seven RT curve matched thermistors control system can measure and control temperature within to 0.1°C of the set value. Over-temperature protection is independent of the controls and inhibits all heaters when the temperature raises by 1 degree above the programmed value. The recovery of set temperature, after 15 seconds door opening, occurs within 5 minutes, thus protecting cultures against thermal shocks ( see Graph)

### Precise control and recovery of set CO<sub>2</sub> percentage

The CO<sub>2</sub> percentage is maintained within the chamber, thanks to a state-of-the-art controller, with a solid state infrared sensor with atmospheric auto zeroing of CO<sub>2</sub>. Mixing of air with inlet CO<sub>2</sub> gas is gently achieved, thanks to the complete absence of a forced air fan circulation system, enhancing a fast recovery of set CO<sub>2</sub> percentage within 5 minutes, following a 15 seconds long door opening (see Graph)

### Fully automatic 12 hours decontamination cycle

A fully tested "on demand" automatic decontamination cycle, heating up to 125°C, is a standard feature assuring your peace of mind when you start your culturing cycle. The beauty of the system is that there is no need to remove any parts or fixtures whatsoever. The total decontamination cycle is run overnight, with a 1.5-2.5 hour temperature ramp up time, a 4 hour exposure time and a 5-7 hour temperature ramp down time, totalling between 11-12 hours in average, depending upon the room temperature. At the end of the cycle, normal control of the CO<sub>2</sub> is automatically resumed, and the only action to be performed is the addition of sterile water into the humidity tray before start up.

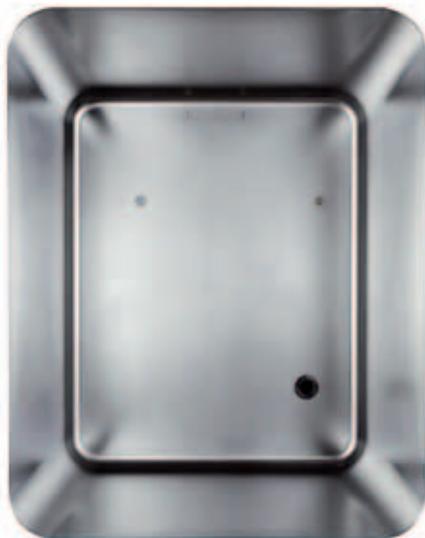


High temperature uniformity during decontamination cycle

## A number of features designed to ease your work



*Detail of the inner chamber with door opening from the left*



*Detail of the inner chamber showing the position of the temperature probe and CO<sub>2</sub> sensor. On the lower right the standard access port is visible*

The direct heated, single door, magnetic closure S@feGrow CO<sub>2</sub> incubator (Italian design) assures to the users an easy and quick access, without any loss of operational stability and performance.

Choosing the double door design, with fully sealed inner glass door and outer heated door, the CO<sub>2</sub> incubator can be equipped with an optional 4 or 8 inner glass door system to give you unmatched choice.

Left opening door option, factory installed, allows for optimal placement of the CO<sub>2</sub> incubator in an expensive and crowded lab space.

Optional multi-position shelf rack set, allows up to 8 shelves to be used, optimizing the area available for culture vessels.

Solid shelves are supplied as standard to provide even surface for the culture vessels however, at no extra cost, the traditional perforated shelves can be supplied.

Fanless construction, with gentlest possible air movement by thermal convection, ensures low contamination risk, simplifies cleaning and decontamination and allows for long life of incubator components.

Seamless, electro-polished, Stainless Steel 304 internal chamber (with fully rounded corners and no internal projections or holes) makes it easy to clean, corrosion resistant and minimize contamination risk.

Large 27.5 mm access port allows user to supply power to small instruments placed on the interior, or allows any other utilities access to the incubator chamber.

## TECHNICAL SPECIFICATIONS

<b>TEMPERATURE CONTROL</b>	<b>Direct heat, 6 sides, 4 independently controlled heaters, 73 meters of heating elements</b>
Temperature range	10-50° C in 0.1 increments ( minimum setting: ambient + 1° C)
Temperature measurement	Seven RT curve matched thermistors
Temperature control	± 0.1° C
Temperature accuracy	± 0.1° C
Temperature uniformity	Better than ± 0.3° C
Temperature recovery	About 5 minutes following a 15 seconds door opening
Over Temperature protection	Independent, inhibits all heaters above 1.0° C over set temperature value (in the unlikely event of a control system failure)
<b>CO<sub>2</sub> SYSTEM</b>	
Sensor	Solid State IR Sensor, automatic atmospheric CO <sub>2</sub> zeroing. Measurement is independent from chamber humidity level
CO <sub>2</sub> range	0.5 to 20 % CO <sub>2</sub> , in steps of 0.1%
CO <sub>2</sub> control	± 0.1% CO <sub>2</sub>
Uniformity	Better than ± 0.1 % CO <sub>2</sub>
Accuracy	± 0.2% at 5% CO <sub>2</sub> set point
Recovery rate	About 5 minutes following a 15 seconds door opening
<b>RELATIVE HUMIDITY SYSTEM</b>	
Reservoir	2.5 litres, 304 Stainless Steel electro-polished humidity tray
RH level	Minimum 95% ( adjustable in a small range through base heater setting)
<b>DECONTAMINATION CYCLE</b>	
Decontamination cycle type	Fully automatic, 125° C cycle, Validated
Temperature ramp up time	1.5- 2.5 hours
Exposure time	4 hours
Temperature ramp down time	5-7 hours
Total cycle time	10.5 to 13.5 hours
<b>CONSTRUCTION</b>	
Inner Chamber	304 Stainless Steel, totally seamless, electro-polished
Chamber volume (gross /usable)	188.6 litres/140 litres
Internal Dimensions (W x H x D) mm	530 x 690 x 500
External Dimensions (W x H x D) mm	680 x 896 x 746
Exterior	Powder painted mild steel with ABS plastic outer door cover
Interior access	Heated outer door with direct chamber access or sealed inner glass door (with optional 4/8 inner glass doors)
Door swing	Right side opening with optional left side door swing ( factory fitted)
Net Weight	102 Kg
Packed Weight	135 Kg

### SHELVING SYSTEM

Shelf racks	Easy to assemble , 304 stainless steel construction, with high temperature plastic spacers
Shelf type	Solid (non perforated) stainless steel shelves ( perforated available as option)
Shelf dimensions (W x D) mm	510x 455 mm, with 150 mm height above each shelf
Shelf surface area, Sq meter	0.23 m2 ( 2.76 sq ft)
Capacity: standard - maximum	4-8 shelves

### ALARM SYSTEM

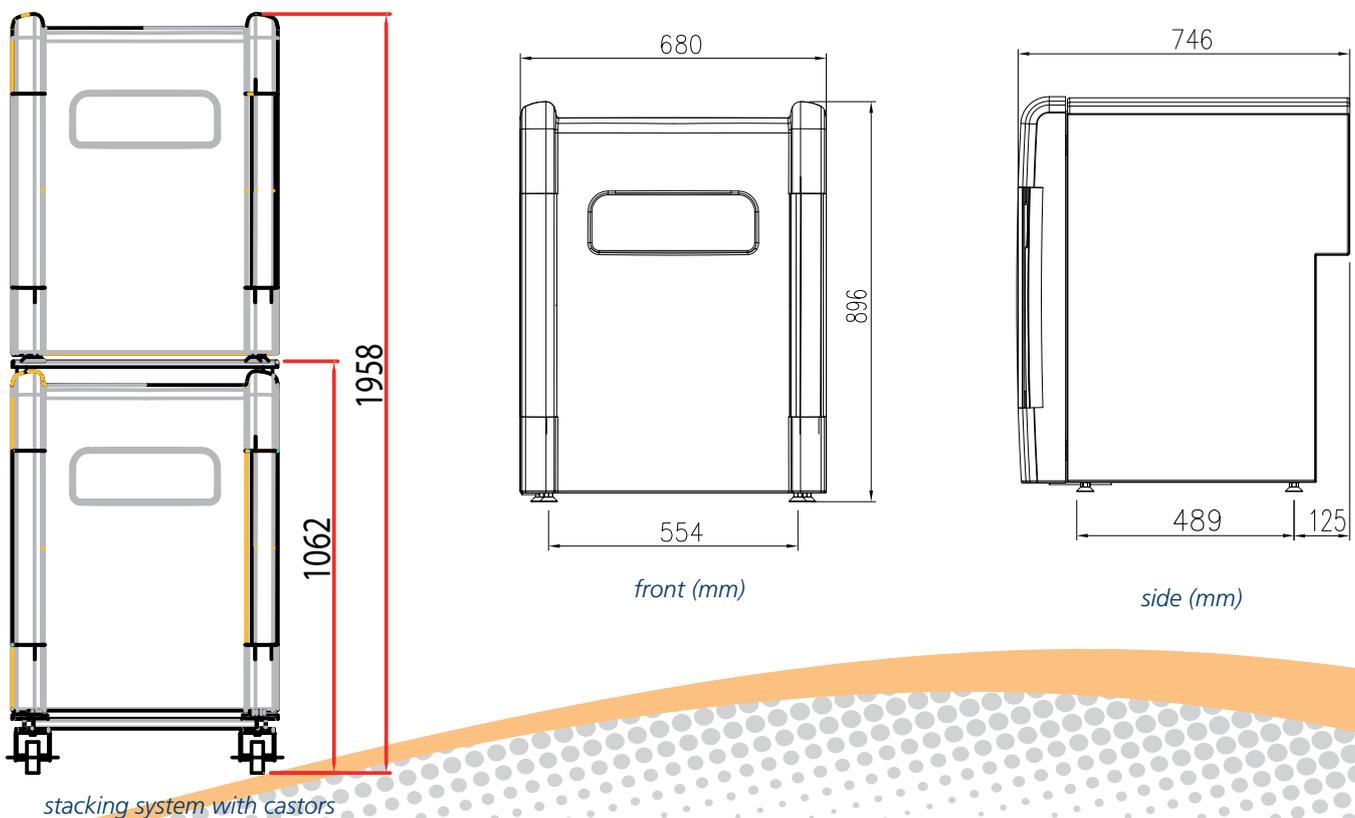
Chamber status alarm	Fully programmable, audio-visual, auto reset when chamber conditions resume
Incubator function alarm	Fully automatic alarms to advise failure in heaters or sensors
Alarm events Log	Up to 500 alarm events held in memory on a rolling basis, displayed on 2 x 24 display, showing programmed value, actual value, time and duration of alarm event

### POWER REQUIREMENTS

Voltage	220-240 V, 50/60 Hz
Rated Power	1.5 kW
Power to maintain 37° C	< 0.1 kW

### EXTERNAL CONNECTIONS

RS 232 output	Operating conditions, alarms and events data output
RS 232 interface	Standard supply, for remote access
Contact for remote alarm	Volt-free, for wiring to a remote external alarm device or alarm system (BMS)



## FROM EUROCLONE A COMPLETE RANGE OF PR

### Class II Microbiological Safety Cabinets

For over 35 years EuroClone-Bioair has been developing and producing Class II Microbiological Safety Cabinets certified by TÜV Rheinland to the EN12469 European Standard.

Our range of 14 different models meets any quality or budget requirement.

S@feMate is without a doubt the most complete series available with solid or glass sides.



The range is completed by the top of the range S@feFlow series and our entry level TopSafe series ideal for laboratories with a modest budget.

### Cytostatic Drugs Handling Cabinets

**S@femate Cyto:** Cytostatic drug handling Cabinets manufactured according to the most stringent safety standards for this category of Safety Cabinets (DIN12980, EN12469). Offers the maximum level of protection against aerosols generated during the reconstitution protocols.

Available in 0.9, 1.2 and 1.8 m sizes.

Other than the two classic HEPA H14 filters needed for the filtration of exhausted air and downflow recirculating

airflow, a tertiary HEPA 14 filtration stage (with patented bag-in, bag-out filter changing protocol) is located underneath the work surface in order to provide, by filtering 100% of the recirculated airflow, total removal of any contaminants.



### Horizontal & Vertical Laminar Flow Cabinets

These cabinets provide Class 100 working conditions and guarantee product protection.

**AURA HZ:** Horizontal Laminar Flow Cabinet with unique lateral side dynamic tightness system to prevent any contamination from the outside

**AURA MINI:** Laminar Downflow Station is ideal when space is a premium. Available with INWARD and OUTWARD air barrier configuration.

**AURA Vertical SD4:** is a partial-recirculating Class 100 vertical laminar airflow: air coming through the front aperture is mixed underneath the work surface with the downflow air and recirculated. Excellent product, operator and environment protection.



## PRODUCTS FOR ALL YOUR CELL CULTURES NEEDS

### Cell biology media and sera

EuroClone offers a wide range of basal media and reagents for cell culture and fetal bovine serum.



EuroClone has recently developed a complete line of media dedicated to different origins stem cell culture among which murine, mesenchymal and neuronal stem cells.

Media are produced using raw material of the highest

quality according to UNI EN ISO 9001:2008 and NF EN ISO 13485:2004 directives.

### Disposable cell culture plasticware

EuroClone promotes a complete range of high quality single use plasticware dedicated to cell culture. Primo® plasticware is manufactured in compliance with UNI EN ISO 9001-2008 in class 100.000 clean room conditions, using high quality 100% USP VI crystal virgin polystyrene and high quality polyethylene.



Flasks and plates undergo a special treatment that produces an extremely smooth surface ideal for cell adhesion and optimal cell growth. Gamma radiated and certified pyrogen free.

### IVF Cabinets

**Embryos@fe Series:** Embryos@fe series: innovative solutions for human Assisted Reproduction Techniques. Dedicated to IVF techniques, Embryos@fe cabinets are available in downflow and in the unique Class II version. Embryos@fe guarantees optimal temperature, CO<sub>2</sub> and humidity control. The unique Stainless Steel heated worksurface can be equipped with all major microscope brands.



### Water baths: static, stirring or shaking

The EuroClone 12 litre water baths combine water thermal uniformity with magnetic or mechanical shaking to offer quiet, vibration free, stable and precise performances.

Main features include:



- Artificial intelligence system (TAC System) maintains precise thermostatic control
- Brushless DC motor for low noise levels and no vibration.
- LED display indicating temperature, speed and time.
- Deep drawn stainless steel bath. Optional metal cover.

### Magnetic Stirrers, Shakers and Vortex Mixers

EuroClone's **Stirrerclone**, **Shakerclone** and **Vortexclone** offers a complete range of mixing equipment, ideal for everyday laboratory use.



**Stirrerclone** magnetic stirrers handle various quantities, either with or without heating capabilities. Used with open or closed vessels,

these state of the art magnetic stirrers easily master even complex tasks. **Shakerclone** shakers offer speeds up to 350RPM during continuous operations, a digital display, timer function, and controlling options via the optional lab software. An extensive choice of attachments enables the use of vessels of every shape and size. **Vortexclone**, is available in fixed or variable speed configurations and can accommodate without difficulty adapters for many kinds of vessels. Sturdy and reliable. It is the workhorse of every laboratory.

### Benchtop centrifuges: versatile, accurate, silent

A complete range of centrifuges to meet every laboratory requirement at a very competitive price.

**Speed Master 14** and **14R**, **Speed Master 18R** combine compact size with high speed centrifugation.



The clever design results in a compact footprint with generous capacity which not only saves precious bench space

but also provides the flexibility to alternate from microvolume centrifugation to medium-volume centrifugation up to 300 ml (6 x 50 ml tubes) of sample.

### Dry Wall Incubators

EuroClone's **Blue Bator Dry Wall Incubators** are developed and manufactured to offer the right answer when a precise temperature control is needed over all the working range, particularly in microorganism culture, growth tests, flocculation

tests and many other applications. Standard microprocessor control, for heating the inner chamber at temperatures ranging from ambient +5°C to 65°C, with an accuracy of  $\pm 0.1^\circ\text{C}$ . Standard fitted with overtemperature acoustic and visual alarms. The sealed control panel offers intuitive programming of the parameters and a quick readout. The non volatile memory, stores the set values during potential blackouts, allowing the unit to restart automatically. Mirror finish inner Stainless Steel Chamber, durable and easy to clean and sanitise.





## ORDERING INFORMATION

Code	Description	Pack
CO20000	S@feGrow 188 CO <sub>2</sub> Incubator, 230 Volts, 50/60 Hz -Direct heated single door, right-hand opening, Standard Display	Each
CO20010	S@feGrow 188 CO <sub>2</sub> Incubator, 230 Volts, 50/60 Hz -Sealed glass inner door and heated outer door, right-hand opening, Standard Display	Each
CO20001	S@feGrow 188 CO <sub>2</sub> Incubator, 230 Volts, 50/60 Hz -Direct heated single door, left-hand opening, Standard Display	Each
CO20011	S@feGrow 188 CO <sub>2</sub> Incubator, 230 Volts, 50/60 Hz -Sealed glass inner door and heated outer door, left-hand opening, Standard Display	Each
<b>Options and Accessories (factory fitted or supplied with the incubator)</b>		
COA0004	Fully sealed four glass door system	Kit
COA0008	Fully sealed eight glass door system	Kit
COA0040	Perforated shelves	Pack of 4
<b>Accessories (supplied with the incubator or sold separately)</b>		
COA08100	Stacking kit and stand with feet	Each
COA08101	Stacking kit and stand with castors	Each
COA08102	Shelf non perforated	Each
COA08103	Shelf perforated	Each
COA08104	Multi position shelf rack set	Kit
COA08105	CO <sub>2</sub> filter	Pack of 5
COA08106	Air Zero filter	Pack of 5
COA08109	CO <sub>2</sub> "change over" unit	Each
COA08110	Portable electronic CO <sub>2</sub> analyzer	Each
COA08111	5.0% calibrated CO <sub>2</sub> cylinder	Each

*EuroClone S.p.A. reserves the right to change product specifications without prior notice*

# EuroClone®

serving science through innovation



ISOAIR®

LAB EQUIPMENT

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EuroClone S.p.A. has a Quality System certified in compliance with UNI EN ISO 9001:2008 and NF EN ISO 13485:2004

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