

EuroElone®
s@fegrow
PRO

CO₂
Incubators



EuroElone®
serving science through innovation



Designed for Comfort

With their high performance and high quality the S@fegrow incubators provide the ideal environment for cell growth, whether you are using primary cell lines or stem cells.

Comfort for cells...

The Advanced Direct Heating system, with its 4 independently controlled elements and 7 thermal sensors, provides unparalleled temperature uniformity and the solid-state IR CO₂ sensor guarantees the most precise control on gas levels.

...and users!

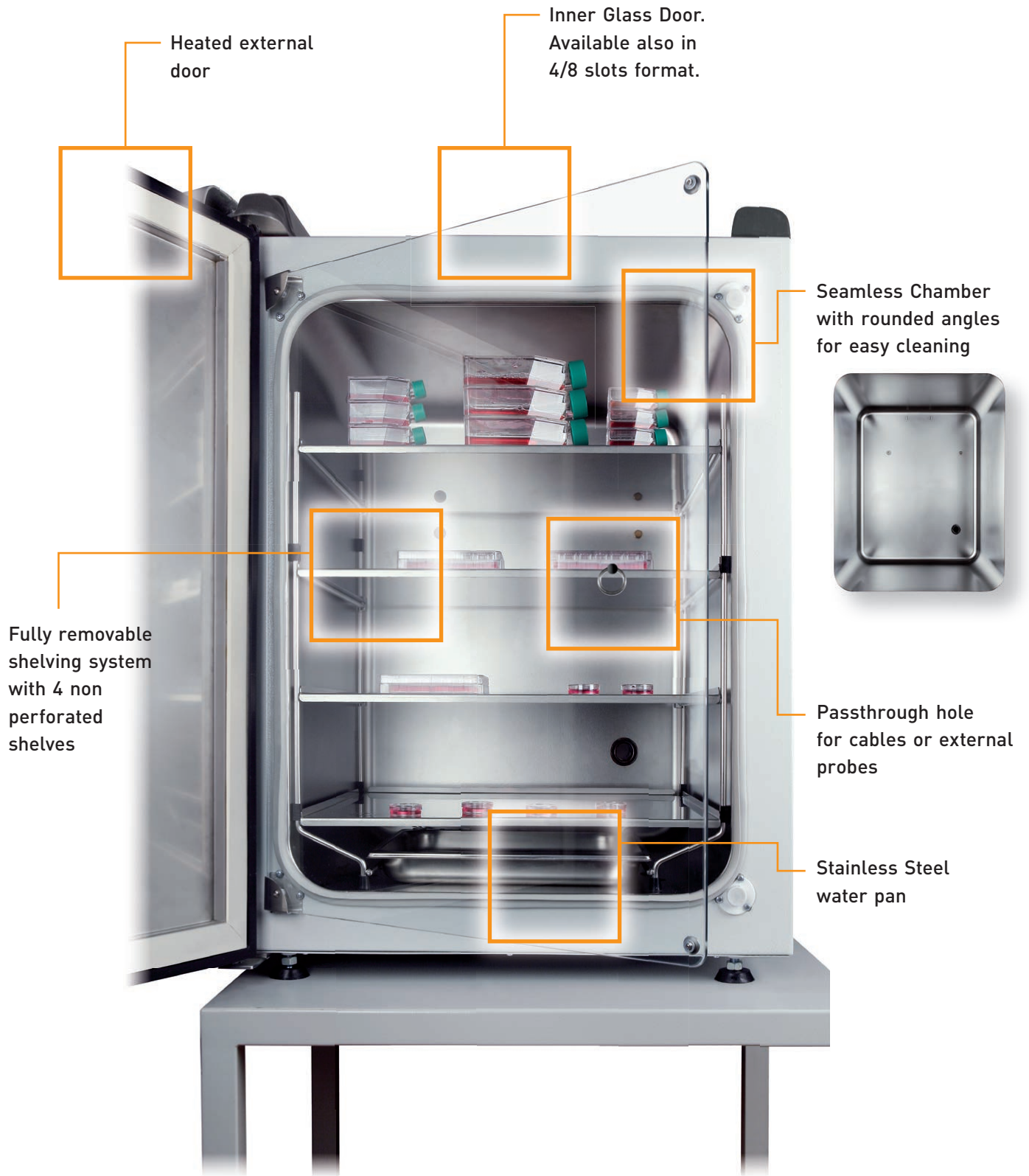
The seamless internal chamber and the fully removable shelving system with 4 non-perforated shelves allow for extremely easy and effective cleaning!
The integrated on-demand High Temperature Decontamination cycle completes the system allowing to keep contamination events under control!





A number of features designed to ease your work

- Double door design, with fully sealed inner glass door and outer heated door. The S@fegrow PRO can be equipped with an optional 4 or 8 inner glass door system.
- Solid shelves are supplied as standard to provide even surface for the culture vessels (perforated shelves available as optional)
- 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, 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.
- Access to the latest 500 events directly from the control panel for immediate review on incubator's operating status!



S@fegrow Incubators are completely made in Italy using components of Italian or European origins! We use only the best for our incubators!

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.

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



Temperature display in steps of 0.1°C

Soft keys to access menu and modify parameters

CO₂ display in steps of 0.1°C

Maximum cleanability:

- The inner chamber is derived from a single sheet of stainless steel, resulting in a seamless surface with big round corners.
- Shelving system is fully removable with no fixtures on the inner chamber's walls.
- Water is placed inside an easily removable and cleanable dedicated steel pan.
- No air circulation channels or conduits.



Advanced Direct Heat system:

The Direct Heat system has been designed to provide top level performances in term of uniformity and recovery:

- 4 independent heaters controllers
> maximum precision!
- 73 meters of heating elements on 6 sides
> maximum uniformity!



Infrared CO₂ Sensor:

The humidity independent IR sensor provides high accuracy in CO₂ level measurement, and the programmable AutoZero function makes sure it always works at top performance!

The sensor has been designed in order to allow running the High Temperature Decontamination Cycle without the need to remove it!

High Temperature Decontamination Cycle

This standard feature of S@fegrow PRO incubators allows to raise the internal chamber temperature to 125°C in order to remove residual contaminations and keep the incubator clean!

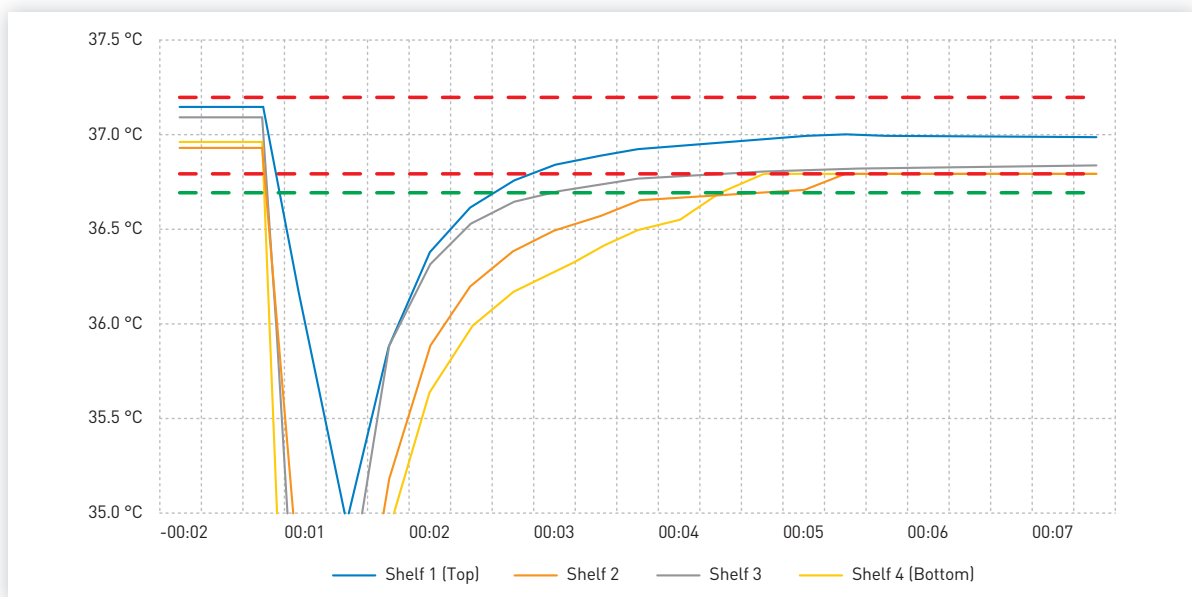
Full optional

Access port, RS232 port for connection to data logging systems, Volt-Free connection for external alarms

Full Performance: no Fans Attached!

S@fegrow's Advanced Heating System has been designed to provide top level performances without requiring any help from active air circulation fans!

The system allows to recover nominal temperature uniformity after only 4 minutes following a door opening of 15 seconds! (see graph, green dashed line). Furthermore in 5 minutes uniformity typically exceeds nominal values! (see graph, red dashed line).



Temperature recovery test: Incubator set point 37°C; Temperature probes: 9 probes/shelf; Room temperature: 21°C; Door opening: 15 seconds. Green dashed line represents nominal uniformity (+/- 0.3°C from set point); Red dashed line is +/- 0.2°C from set point.

The design of the S@fegrow PRO with 6 sided heating and an independent base heater which gives a temperature boost each time the door is opened, optimises chamber recovery without compromising the design by having to use a fan. Tests have shown that CO₂ homogenises within the chamber almost as soon as the 5% level is reached.

- The risk of contaminating samples is lowered by allowing the gentlest possible air movement commensurate with providing fast recovery and homogeneous chamber conditions.
- Cleaning the chamber is far simpler because internal ducting and fan guards are eliminated, also the fan blade, which is impossible to clean properly without removing it and autoclaving.
- The gentle air movement reduces desiccation of samples to a minimum. The rate of evaporation is in direct proportion to the speed of the air movement within the chamber at constant RH level. Air movement is at least 10 times higher in an incubator with a fan.
- The usable capacity within the chamber is increased by up to 30% by eliminating ducting and the fan. This optimises the usable volume in a given space, particularly important in a busy laboratory.

Uniformity where it's most important!

Using perforated shelves creates cold spots due to the different thermal conductivity of air and steel: these may have unwanted effects to cells' growth patterns. The S@fegrow PRO is supplied with 4 non perforated shelves to increase temperature uniformity where it counts the most: near your cells!!

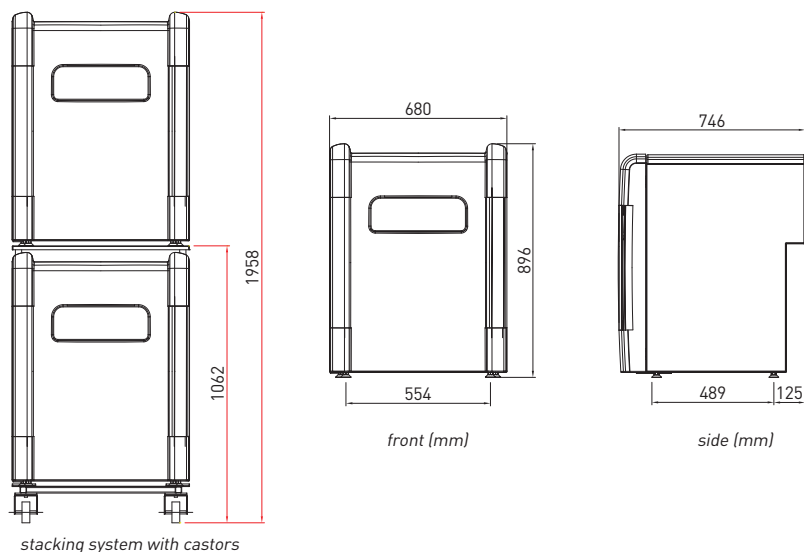
Moreover the solid surface is extremely easy to clean, keeping the risk of contaminations under control!

Models

PART NUMBER	DESCRIPTION
CO20010	S@fegrow PRO - CO ₂ Incubator - 230 Volts, 50/60 Hz Double Door w/Glass - Right open (hinges on the left) - HT Decontamination
CO20011	S@fegrow PRO - CO ₂ Incubator - 230 Volts, 50/60 Hz Double Door w/Glass - Left open (hinges on the right) - HT Decontamination

Accessories & Optionals

PART NUMBER	DESCRIPTION
COA08100	Stacking kit for S@fegrow, composed of base with castors and intermediate plate
COA0004	Inner glass door. 4 doors version for S@fegrow mod.: CO20010
COA0008	Inner glass door. 8 doors version for S@fegrow mod.: CO20010
COA0005	Inner glass door. 4 doors version for S@fegrow mod.: CO20011
COA0009	Inner glass door. 8 doors version for S@fegrow mod.: CO20011
COA0040	Set of 4 perforated shelves for S@fegrow
COA08105	Inlet CO ₂ Filter for S@fegrow
COA08106	Autozero Filter for S@fegrow
COA08109	Bottles Change Over for S@fegrow
COA08110	Portable electronic CO ₂ analyzer for S@fegrow
COA08111	5.0% CO ₂ Small Bottle for analyzer calibration
AS70001	Stand w/castors for S@fegrow, height 540 mm
AS70002	Stand w/castors for S@fegrow, height 200 mm



Technical Data

TEMPERATURE CONTROL		Direct heat, 6 sides, 4 independently controlled heaters, 73 meters of heating elements
Temperature range	10-50° C in 0.1 increments (minimum setting: ambient + 5° 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 4 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)	
CO₂ SYSTEM		
Sensor	Solid State IR Sensor, automatic atmospheric CO ₂ zeroing. Measurement is independent from chamber humidity level	
CO ₂ range	0.5 to 20 % CO ₂ , in steps of 0.1%	
CO ₂ control	± 0.1% CO ₂	
Accuracy	± 0.2% at 5% CO ₂ set point	
Recovery rate	About 5 minutes following a 15 seconds door opening	
RELATIVE HUMIDITY SYSTEM		
Reservoir	2.5 litres, 304 Stainless Steel humidity tray	
RH level	Minimum 95% (adjustable in a small range through base heater setting)	
DECONTAMINATION CYCLE		
Decontamination cycle type	Fully automatic, 125° C cycle	
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	
CONSTRUCTION		
Inner Chamber	304 Stainless Steel, totally seamless	
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	510 x 455 mm, with 150 mm height above each shelf	
Shelf surface area, Sq meter	0.23 m ² (2.76 sq ft)	
Capacity: standard - maximum	4 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	
Contact for remote alarm	Volt-free, for wiring to a remote external alarm device or alarm system (BMS)	

Every Lab Every Day

EuroClone® is virtually able to **meet all needs**, in terms of *reagents, equipment and know-how*, which may arise in any of the following *markets*:

BIOTECHNOLOGY (Research and Production) *offering products for*:
Cell Biology; Molecular Biology; Proteomics; Contamination Control Equipment for Research & Industrial Application

DIAGNOSTICS (Human, Agro-Food and Veterinary) *featuring*: Cytogenetics; Food Control; Animal and Plant Infectious Diseases

MEDICAL DEVICES (both for General and Specialistic application) *to be used in*:
General Surgery; Laparoscopy; Gynaecology; ENT Neurosurgery

The **Corporate Headquarters**, located in Pero (nearby Milan), coordinate the activities of 2 *satellite sites* as well as the sales efforts of more than **70 Distributors worldwide**, covering the most significant countries throughout 5 continents.



EuroClone® headquarters
Pero (MI)



Production site
Siziano (PV)

Primo® Cell Culture Consumable and General Microplates

Primo® Cell Culture is the new series of products developed by EuroClone to satisfy high demanding scientists' needs.

Primo® Cell Culture has been innovatively designed by our engineers.

The entire line of Primo®'s product is manufactured in clean-room environment under a ISO 9001-2008 and 13485:2003/AC:2007 international standards.

Primo® Cell Culture products are manufactured with 100% USP VI crystal class virgin polystyrene and high quality polyethylene to ensure optimal surface for your cells.

Primo® Flasks and Plates are vacuum-plasma treated to create a negatively charged and hydrophilic surface; this treatment ensures a more even and consistent cell attachment together with optimal cell growth.

Primo® screening plates are polystyrene plates designed for cell based high content screening, confocal microscopy, FRET and homogeneous assays where an optimum signal to noise ratio and high consistency are essential.

Primo® polypropylene storage plates have very low biomolecular binding properties, tolerate high temperature and are resistant to many standard laboratories chemicals.



Euromed Cell Culture Media Sera & Reagents

EuroClone products for cell culture provides the highest quality, consistency and performance for your cell culture and tissue culture needs. The portfolio is complete and includes sera, standard media, salts solutions, reagents and supplements. EuroClone has also developed media and reagents for stem cells cultivation and differentiation. All facilities and processes are thoroughly validated to ensure that our products meet EuroClone quality standards.

All raw materials are pre-tested and have to conform to the most stringent quality standards. Only purified water (AP) grade is used in media and in solutions production, all the processes that bring to the release of a product are strictly controlled. Before sterile filtration, important parameters are analyzed such as pH, osmolality and endotoxin and finally the reagents are bottled on fully automated filling lines.

The growth of animal cells depends crucially on the growth factors contained in the medium. In most cases this is achieved by adding blood serum to the medium which also contains proteins, vitamins, hormones, trace elements and adhesion factors, EuroClone offers different type of sera from bovine to other animal as well as human; they are all characterized by high quality, sterility and homogeneity.





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