

S@fegrow 188

CO₂ Incubator

The New EuroClone S@feGrow 188 Direct Heat CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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.





Main Features

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.

Precise control and recovery of set CO₂ percentage

The CO₂ 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 CO₂. Mixing of air with inlet CO₂ gas is gently achieved, thanks to the complete absence of a forced air fan circulation system, enhancing a fast recovery of set CO₂ percentage within 5 minutes, following a 15 seconds long door opening.

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 CO₂ is automatically resumed, and the only action to be performed is the addition of sterile water into the humidity tray before start up.

TECHNICAL SPECIFICATIONS

INTENDED USE: Life Science, Scientific Research

APPLICATION: Growth of cell cultures

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 + 1° C)
- Temperature measurement Seven RT curve matched thermistors
- Temperature control $\pm 0.1^\circ$ C
- Temperature accuracy $\pm 0.1^\circ$ C
- Temperature uniformity Better than $\pm 0.3^\circ$ 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)

CO₂ SYSTEM

- Sensor Solid State IR Sensor, automatic atmospheric CO₂ zeroing. Measurement is independent from chamber humidity level
- CO₂ range 0.5 to 20 % CO₂, in steps of 0.1%
- CO₂ control $\pm 0.1\%$ CO₂
- Uniformity Better than $\pm 0.1\%$ CO₂
- Accuracy $\pm 0.2\%$ at 5% CO₂ set point
- Recovery rate About 5 minutes following a 15 seconds door opening

RELATIVE HUMIDITY SYSTEM

- Reservoir 2.5 litres, 304 Stainless Steel electro-polished 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, 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

CONSTRUCTION

- 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 fi tted)
- 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)

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