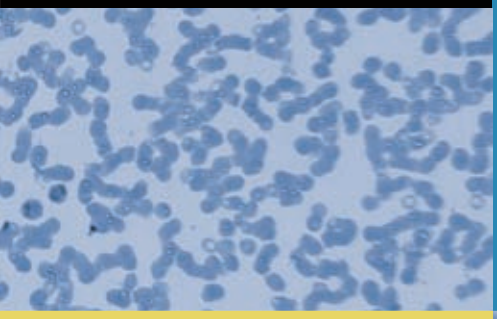


Thermo Scientific Forma® Steri-Cycle® CO_2 Incubators

Total contamination control and elimination

Thermo Scientific Forma Steri-Cycle CO_2 Incubators – Contamination control and elimination

Our reliable direct heat Steri-Cycle CO_2 incubator combines the best of both worlds – our unique in-chamber HEPA air filtration system providing continuous protection against unwanted airborne contaminants and an on-demand, high temperature sterilization cycle, to simplify your routine cleaning practices. Providing precise CO_2 control with choice of TC (thermal conductivity) or IR (infrared) sensor, excellent temperature uniformity and recovery characteristics, the Steri-Cycle is a favorite of researchers seeking the benefits of complete contamination control and dependable long term performance.

- **Total Contamination Control** is provided by the Steri-Cycle's unique design. Its validatable in-chamber HEPA air filtration system continuously removes invading particulates and maintains your important cultures in cleanroom-like Class 100 air quality conditions. Additionally, an on-demand 140ºC high temperature sterilization cycle, reliably eliminates contamination from all internal surfaces, simplifying cleaning procedures.

- **Adaptable to Your Specific Requirements** – configure the Steri-Cycle, to your specific needs and work environment with a choice of CO_2 sensors, reversible door swings and a host of options including available relative humidity monitoring, antimicrobial copper interiors, automatic gas tank switchers, datalogging and IQ/OQ documentation kits.

- **High Capacity for Maximum Culture Space –** the large 6.5 cu.ft Steri-Cycle chamber provides ample room for samples.

Our Steri-Cycle CO2 incubators are readily stackable to preserve floor space (hardware included).

Thermo Scientific Enviro-Scan® Microprocessor Message Center

Easy to navigate alpha-numeric messaging center clearly displays temperature, CO_2 and RH (optional) parameters, and provides the peace of mind of audible/visual alarms and a silence button

Calibration – Calibrate temp, CO_2, RH (optional)

System Configuration – Configure audible on/off, access code, HEPA filter change reminder, remote alarm contacts, tracking low temp and high and low CO_2 alarms, and the following options: automatic tank selector, RS-485 interface, and display temp/RH (selectable)

Setpoint – Set temp, overtemp, CO_2

Run – Class 100 timing reminder appears after door is closed for five minutes, message changes to describe alarm conditions

Heater On Indicator

Temperature Display

RH Display

Audible/Visual Alarm

Alarm Silence

Optional Built-In Gas Guard System

CO_2 Display

CO_2 Inject Indicator

Mode Select

Scroll for Program Parameters

Programming Buttons

Thermo Scientific Forma Steri-Cycle CO_2 Incubators – Contamination Control and Elimination

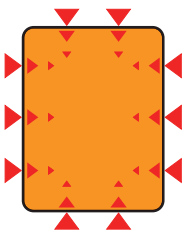
Designed for easy cleaning

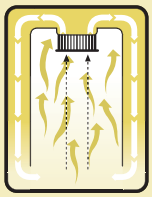
- Polished stainless steel interior with coved corners is easy to clean.
- Sturdy stainless steel shelves and supports are designed to support a full product load, and can be readily removed without tools for easy cleaning or adjustment.
- Microbiological filters are provided on gas inlet and sample ports and are readily accessible for simplified routine replacement.
- Inner door gasket is removable and cleanable, and adjusts continually to ensure a tight seal.
- On-demand high heat sterilization system destroys all mycoplasma, fungi, molds, yeast, bacteria, and hard-to-kill spores.

100 % HEPA filtration for rapid response class 100 air quality

- The patented in-chamber HEPA air filtration system, continuously filters the entire chamber volume every 60 seconds, reducing particulates to Class 100 cleanroom levels, to preserve your aseptic culturing environment.
- The HEPA filter entraps particulate air contaminants and prevents their escape. Airborne contaminants are the primary source of contamination in most cell culture lab settings. Efficiency and long term effectiveness of the HEPA filter Airflow System protect your cultures and minimize downtime.
- Optimized air flow system design will not interfere with samples or incubator function.
- Class 100 air quality conditions are achieved within five minutes following a routine door opening.
- *Volatile Organic Compounds (VOC) filtration system*
  An optional built-in VOC filtration system removes volatile organic vapors which could pose risk to sensitive cultures. Its molecular sieve technology captures potentially toxic chemicals commonly found in products such as lab solvents, cleaning agents and plastics, which may find their way into the incubator.
- This easily installed, low maintenance filtration system is more effective and longer lasting than activated charcoal systems in high humidity conditions, such as in a CO_2 incubator.
- Examples of chemicals/vapors filtered include alcohols (ethanol and methanol), alkanes (decanes, heptanes, hexanes), aromatics (toluene, xylene, benzene, styrene), and olefins (cyclohexane).

Uniform direct heat Steri-Cult chamber





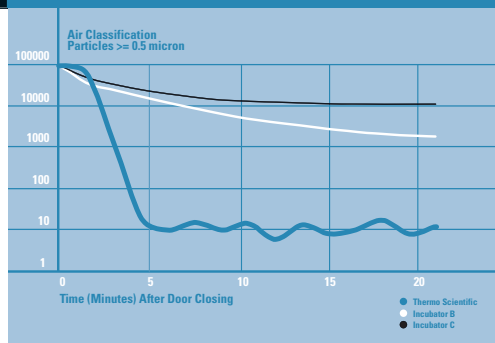
Validatable Class 100 air quality
Product yields and reliability can be affected by airborne contamination, costing you time and money. Particulates are reduced to cleanroom levels, minimizing the risk of product loss and downtime.

HEPA Air-Filter (VOC)

Particulate count reduction in a Steri-Cycle with Class 100 HEPA filtration versus competitive units with non-rated HEPA filtration systems

Sturdy stainless steel shelves and supports can be removed without tools for easy cleaning or adjustment

AIR QUALITY DEFINED
Federal Standard 209E and International Standard ISO 14644-1 define air quality classifications (e.g., Class 1, 10, 100 and ISO Class 1, 2, etc.). The Federal Standard classification number is the maximum allowable number of particles 0.5 microns and larger per cubic foot of air. ISO Class 2 correlates most closely to Federal Standard Class 100.



On-Demand Sterilization Cycle – for event based sterilization with proven reliability, there is no substitute for high temperature to erradicate unwanted microbial contaminants. Steri-Cycle incorporates a convenient automatic sterilization program at 140°C, to simplify your cleaning procedures.

Easy to Use

- Activate program with the touch of a button. The convenient messaging center guides you through the entire process…no chance for error.
- Heat-resistant T/C sensor can be left in place during the cycle for convenience. HEPA filter and IR sensor are easy to remove before running the cycle.

Fast

- Convenient overnight sterilization with limited downtime (approximate cycle length 14 hours).
- Post-cycle cleanup is not required, saving time. The incubator returns to your regular operating conditions at the end of the cycle.

Safe

- Audible alarm activates if the outer door is opened during the cycle and the temperature is 60°C (140°F) or greater, ensuring safety in the lab.
- Access code prevents accidental initiation of the cycle.

Effective

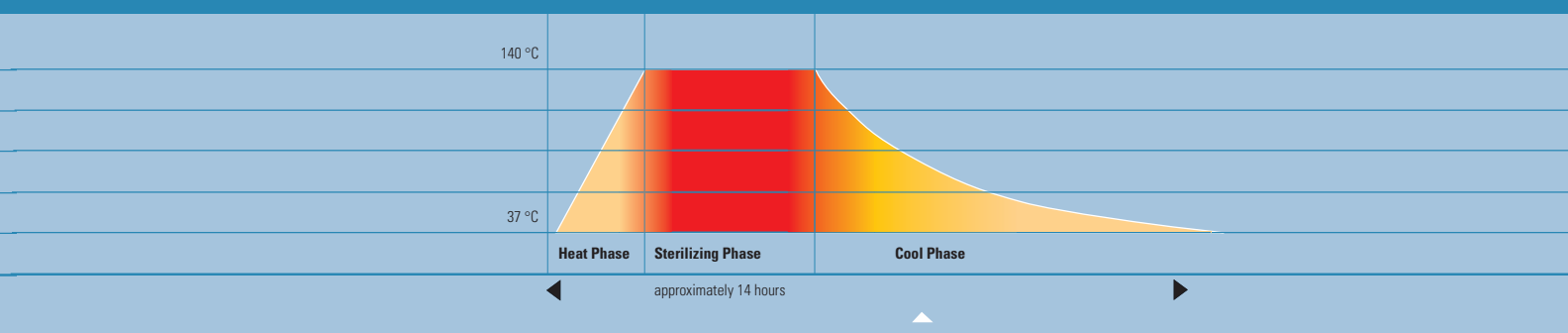
- Unlike UV decontamination systems and manual disinfection processes, heat sterilization destroys all forms of microbial contamination easily and with certainty.

The Cycle Starts with the Press of a Button!
During the heat sterilization process, the Micro-processor control/monitoring system's message center guides you through the cycle with start-up and cycle status messages. The three sterilization cycle phases are heat, sterilizing (hold), and cool.

Heat Phase – Incubator is ramping to the heat sterilization temperature

Sterilizing Phase – Chamber has reached the sterilization temperature and all microbial life is destroyed

Cool Phase – Incubator is cooling to normal operating temperature; you are then prompted to replace the HEPA filter and sensor, if applicable



Sterilization temperature profile

Thermo Scientific Steri-Cycle® CO_2 Incubators

Description	Cat. No.
RH Display	
Humidity (RH) Display, readable in 1% increments, includes low RH programmable alarm (alerts you of need to add water to humidity pan), factory installed	1900091
Shelving, Ductwork, and Humidity Pans	
Stainless Steel Components –	
Stainless Steel Shelf and Channels	190884
Stainless Steel Humidity Pan	237016
Stainless Steel Ductwork Kit, includes side ducts and shelf channels	190670
Solid Copper Components –	
Copper Interior Components Kit; includes side ducts, shelf channels, four shelves, and humidity pan; factory installed at time of order	1900095
Copper Perforated Shelf with Channels	190879
Copper Humidity Pan (Fig. 01)	237020
Filters[1] and Filter Kits	
Replacement HEPA Filter (Fig. 04)	760175
HEPA Value Pack (four filters)	760209
10 Disposable Polypropylene In-Line Filters	760210
HEPA Filter Replacement Kit, includes HEPA, in-line, and access port filters	1900067
Replacement HEPA[2] VOC Filter	760200
HEPA[2] VOC Filter Replacement Kit, includes HEPA[2], in-line and access port filters	1900094
HEPA[2] VOC Filtration System (kit), converts HEPA Filter Airflow System to HEPA[2] Filtration System, includes HEPA[2] filter and two silicone plugs	760199
Door Kit and Right Hand Door Swing	
Independent Inner Glass Door Kit (eight glass doors with latches), mounts inside heated inner glass door, is removable and can be autoclaved (Fig. 02)	190650
Right Hand Door Swing, factory installed at time of order	190666
CO_2 Accessories	
Built-In CO_2 Gas Guard, monitors CO_2 and automatically switches from one cylinder to the other when the supply is exhausted, factory installed	1900086
Wall Clamp for a CO_2 Bottle, includes cylinder holder with web strap	950316
Two-Stage CO_2 Gas Regulator with barbed connection and shut off valve (Fig. 03)	965010
CO_2 Fyrite® Analyzer Kit, 0-20%	155021
Roller Dolly	
Roller Dolly (heavy-duty, powder coated steel base) with dual-wheel, swivel locking casters and leveling feet; supports one or two (stacked) incubators; raises unit 3.0" (7.6cm) off the floor (Fig. 06)	1900063
Data Outputs (select one), factory installed	
RS-485 interface	1900085
4-20 milliamp	190512
0-5V analog	190543
0-1V analog	190544

(continued)

[1]HEPA and HEPA[2] filters are rated a minimum 99.97% efficient at 0.3 microns. Filters are easily replaced without tools.

Thermo Scientific Steri-Cycle® CO_2 Incubators

Description	Cat. No.
Monitoring and Alarm Systems	
Monitor/Alarm System, interfaces with as many as 24 products (channels) to monitor and display equipment conditions up to 2,000 ft. away	1535
Sensaphone® Telephone Dialing Systems, interface with standard touch-tone phone system –	
For up to four input channels	400047
For up to eight input channels	400134
Dataloggers, -50°C to 140°C (-58F to 284F), designed to meet U.S. FDA guidelines cGLP 21 CFR Part 58, Software Validation 21 CFR Part 820, and Electronic Records, 21 CFR Part 11; contact our Services Department (888-213-1790) for an implementation quotation –	
Datalogger, without evaluation software	201904
Datalogger, with evaluation software and PC data cable, factory installed	201266
6", 7 Day Circular Chart Recorders –	
0°C to 200°C (32F to 392F), single pen, 120V	201188
0°C to 200°C (32F to 392F), single pen, 220V	201189
0°C to 200°C (32F to 392F), dual pen, 120V, 2 probes, temp/temp (for stacked incubators)	201194
0°C to 200°C (32F to 392F), dual pen, 220V, 2 probes, temp/temp (for stacked incubators)	201195
0°C to 60°C (32F to 140F), dual pen, 120V, 1 probe, temp/RH	201159
0°C to 60°C (32F to 140F), dual pen, 220V, 1 probe, temp/RH	201160
Miscellaneous Accessories	
Sealed Modular Incubator Chamber, purge with any gas mixture to create a "mini-incubator" inside your incubator for unusual gas and temperature controlled experiments, dimensions: 12.0" (30.5cm) circular chamber, 4.7" (11.9cm) high, must remove before sterilization cycle is run (Fig. 05)	190043
IQ/OQ, MS Windows®-compatible document disk for process customization and detailed checklists to qualify unit setup and operation	6000370

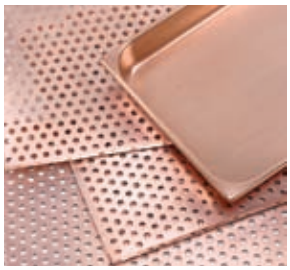


Fig. 01 | Copper Humidity Pan

Fig. 02 | Inner Glass Door Kit

Fig. 03 | Two-Stage CO_2 Gas Regulator

Fig. 04 | HEPA Air-Filter

Fig. 05 | Sealed Modular Incubator Chamber

Fig. 06 | Roller Dolly

Specifications

Thermo Scientific Steri-Cycle® CO_2 incubators

Specifications	
Temperature	
Control	±0.1°C
Range	5°C above ambient to 50°C (122F)
Uniformity	±0.3°C @ 37°C (98.6F)
Tracking Alarm	User-programmable low
Overtemperature	
Sensor	Precision thermistor
Setability	0.1°C
Function	Shuts off heat
Temperature Safety	
Sensor	Independent thermostat
Controller	Independent analog electronic
Sterilization Cycle	
Sensor	Precision thermistor
Cycle Temperature	140°C (284F)
Cycle Length	Under 12 hours
CO_2	
Control	Better than ±0.1%
Range	0-20%
Inlet Pressure	15 PSIG (1.0 bar)
Sensor	T/C or IR
Readability & Setability	0.1%
Tracking Alarm	User-programmable high/low
Humidity	
RH	Ambient to 95% @ 37°C (98.6F)
Humidity Pan	3.2 qt. (3.0 liters) standard
Display (opt.)	In 1% increments
Fittings	
Access Port	1.3" (3.3cm) with removable silicone plug with filter
CO_2 Inlet	1/4" hose (barbed)
Unit Heat Load	
115V/230V	293 BTUH (86 Watts)

Shelves	
Dimensions	18.5" x 18.5" (47.0cm x 47.0cm)
Construction	Stainless steel, perforated
Surface Area	2.4 sq. ft. (0.2 sq. m)
Max. per Chamber	36.0 sq. ft. (3.3 sq. m)
Standard, Maximum	4, 15
Construction	
Interior Volume	6.5 cu. ft. (184.1 liters)
Interior	Type 304, polished stainless steel
Exterior	18 gauge, cold-rolled steel, powder coated
Outer Door Gasket	Four-sided, molded, magnetic vinyl
Inner Door Gasket	Removable, cleanable, feather-edged, silicone
Electrical	
370/380	115V, 50/60 Hz, 9.6 FLA (Operating range 90-125V)
371/381	230V, 50/60 Hz, 4.4 FLA (Operating range 180-250V)
Circuit Breaker/	12 Amps/2 Pole
Power Switch	
Convenience	75 Watts maximum
Receptacle	(matches cabinet voltage)
Plug	115V: NEMA 5-15P Plug
	230V: CEE 7/7 Plug
Alarm Contacts	Power interruption; deviation of temp, CO_2,
	RH; customer connections through jack on back of unit
Data Outputs (opt.)	RS-485, 0-1V, 0-5V, 4-20 milliamp (select one)
Dimensions	
Exterior	26.3"W x 39.5"H x 25.0"F-B (66.8cm x 100.3cm x 63.5cm)
Interior	21.3"W x 26.8"H x 20.0"F-B(54.1cm x 68.1cm x 50.8cm)
Weight	
Net	260 lbs. (117.9 kg)
Shipping (Motor)	315 lbs. (142.9 kg)

Model	CO_2	Voltage
370	T/C	115
371	T/C	230
380	IR	115
381	IR	230

Choice of T/C or IR Sensor
Select a T/C sensor when chamber temp and RH are relatively constant. Typically, a T/C sensor has a longer life than an IR sensor.

Select an IR sensor when temp and RH levels are changed frequently.

With either sensor, elevated RH is critical to prevent desiccation.

All units are UL Listed to United States and Canadian requirements and bear the CE Mark.

www.thermo.com/incubators

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Europe: Austria +43 1 801 40 0, Belgium +32 2 482 30 30, France +33 2 2803 2000, Germany national toll free 08001-536 376, Germany international +49 6184 90 6940, Italy +39 02 02 95059 434-254, Netherlands +31 76 571 4440, Nordic countries +358 9 329 100, Russia/CIS +7 (812) 703 42 15, Spain/Portugal +34 93 223 09 18, Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203
Asia: China +86 21 6865 4588 or +86 10 8419 3588, India +91 22 6716 2200, Japan +81 45 453 9220, Other Asian countries +852 2885 4613
Countries not listed: +49 6184 90 6940 or +33 2 2803 2000

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