ESCO®

WORLD CLASS. WORLDWIDE.

CelMate®

CO$_2$ Incubators
Cradle for Beautiful Cells

CelMate® CO$_2$ Incubators
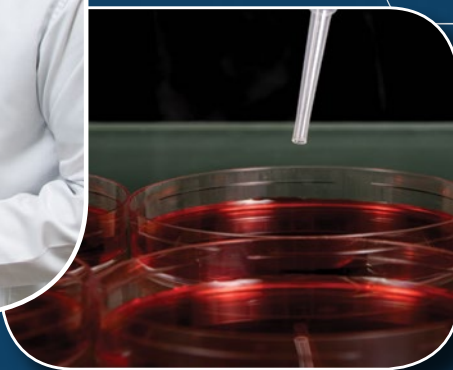
Welcome to Esco
Esco's Vision is to provide enabling technologies for scientific discoveries to make human lives healthier and safer.

The Esco Group of Companies is committed to deliver innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical, and IVF community. With the most extensive product line in the industry, Esco have passed a number of international standards and certifications, and is operating under ISO 90001, ISO 14001, and ISO 13485. Esco represents innovation and forward-thinking designs, that are of the highest standard quality since 1978.

Availability and Accessibility. Esco has headquarters in Singapore, Indonesia, and Philippines, with manufacturing facilities are located in Asia and Europe. Research and Development (R&D) is conducted worldwide spanning the US, Europe and Asia. Sales, services and marketing subsidiaries are located in 42 major markets including US, UK, Japan, China and India. Esco regional distribution centers are located in Singapore, Malaysia, Thailand, Vietnam, Myanmar, Indonesia, Philippines, Bangladesh, Hong Kong, Taiwan, South Korea, China, Japan, India, UAE, Central and South Africa, Denmark, Germany, Italy, Lithuania, Russia, United Kingdom, and USA. Because of our worldwide presence, you can be sure that Esco is within your reach.

High Quality, Reliable, and Dependable. Esco products are of high quality, reliable, and dependable; assuring customers of research accuracy. Cross functional teams from Esco Production, R&D, Quality Assurance, and Senior Management, are regularly assembled to review and implement areas for improvement.

Esco Cares for Your Safety. Esco focuses on providing safety not just for your samples but also for you and the environment.

Esco Cares for Your Comfort. Building ergonomic designs and reducing noise levels of the units ensures comfort for our users.

Esco Cares for the Environment. One in every four of Esco's employees is involved in R&D and a number of them evaluate new components and/or designs to produce energy efficient equipment. Being GREEN is more than just modifying parts used to produce a new energy efficient technology, it is also embodied in the every aspect of the company.

Customer Service and Support. Our service does not stop once purchase has been done. Esco gives on-time customer service and offers end-user seminars, service training, preventive maintenance, and provides educational materials and informative videos.

As Esco takes the opportunity to respond to the world's needs, we aim not only to contribute in the advancement of scientific discoveries but also in making the world a safer, healthier, and better place to live in.

Products and Application

Life Sciences Laboratory Equipment

Sample Preparation
- Class I Biological Safety Cabinets
- Class II Microbiological Safety Cabinets
- Class II Type A2 Biological Safety Cabinets
- Class II Type B1 Biological Safety Cabinets
- Class II Type B2 Biological Safety Cabinets
- Class III Biological Safety Cabinets
- Horizontal Laminar Flow Clean Benches
- Vertical Laminar Flow Clean Benches
- Laboratory Animal Research Workstations
- Laboratory Centrifuges

Sample Cultivation
- CO_2 Incubators, Direct Heat Air-Jacketed
- CO_2 Incubators with Cooling System
- CO_2 Incubators with Stainless Steel Exterior
- Laboratory Shakers

Sample Handling and Analysis
PCR Thermal Cyclers
- Conventional Thermal Cyclers

PCR Sample Handling
- Microplate Shakers
- PCR Cabinets

Sample Storage & Sample Protection Solutions
- Ultra-low Temperature Freezers
- Lab Refrigerators and Freezers
- Sample Database Management Software
- Intelligent Remote Monitoring Application Protocol
- Remote Monitoring, Datalogging, Programming Software
- Wireless Monitoring System

Chemical Research
- Ductless Fume Hoods
- Laboratory Fume Hoods
- Fume Hood Airflow Monitors
- Exhaust Blowers
- Powder Weighing Balance Enclosures
- Filtered Storage Cabinet

General Equipment
Laboratory Thermostatic Products
- Laboratory Oven
- Laboratory Incubator
- Refrigerated Incubator
- Natural Convection Incubator

Forensic Sciences
- Evidence Drying Cabinet

Medical / IVF Equipment

Controlled Embryo Handling
- Fertilisafe™ ART Workstation
- AVT-I Anti Vibration Table
- Semi Closed Environment IVF

Safe Embryo Culture
- MIRI® Multi room Benchtop Incubator
- CelCulture® CO_2 Incubator
- Mini MIRI® Humidified Benchtop Incubator

Innovative Time Lapse Imaging
- MIRI® Time-lapse Incubator

Accurate Quality Control
- MIRI® GA Gas and Temperature Validation Unit
- MIRI® GA Mini Gas Validation Unit

Unique Consumables
- CultureCoin

Healthcare

Esco Pharma Products
Airflow Containment Products
- Pharmacon® Downflow Booths
- Ceiling Laminar Airflow Units
- Laminar Flow Horizontal/Vertical Trolley
- Enterprise™ Laminar Flow Straddle Unites
- Cytoculture™ Cytotoxic Safety Cabinets

Isolation Containment
- Aseptic Containment Isolator (ACTI)
- Weighing and Dispensing Containment Isolator (WDCI)
- General Processing Platform Isolator (GPPI)
- Containment Barrier Isolator (CBI)
- Turbulent Flow Aseptic (Grade A) Isolator (TFAI)
- Isoclean® Healthcare Platform Isolator (HPI)
- Streamline® Compounding Isolators (SCI)
- Technetium Dispensing Isolators
- Blood Cell Labeling Isolators
- Open and Closed Restricted Barrier Access Systems (RABS)

Cross Contamination Facility Integrated Barrier
- BioPass™ Pass Through
- Infinity® Air Shower Pass Box
- Cleanroom Air Shower
- Infinity® Cleanroom Transfer Hatch
- Infinity® Pass Box
- Soft capsule® Soft Wall Cleanroom
- Dynamic Passboxes and Dynamic Floor Laminar Hatches
- Laminar Flow Storage Cabinet

Ventilation Containment
- Ventilated Balance Enclosure

VacciXcell Products
Bioreactors and Fermenters
- CelCradle™
- TideXcell™
- VacciXcell™ Hybrid Bioreactor

Cell Culture Monitoring, Media and Consumables
- Super Plus™
- Plus™ Vero
- Plus™ MDCK
- Plus™ MDCK II
- BioNOC™ II macrocarriers
- GlucCell™ Glucose Monitoring System
- CVD Kit

Filling Line Equipment
- Filling Line Isolators
- cRabs (close restricted access barriers)
- oRabs (open restricted access barriers)

Integrated Solutions
- Cell Processing Isolator
- Cell Processing Center

TaPestle Rx Products and Services
PRODUCTS
Pharmacy Automation and Compounding Supply
- Compounding Pharmacy Isolators (SCI, HPI, CBI, GPPI)
- Safety Cabinets and Enclosures (Class II BSC, VBE, LFC)
- Radiopharmacy Hoods and Isolators
- Aseptic Filling Systems

Healthcare and Laboratory Construction Components
- Prefabricated Walls (Airecell®)
- Prefabricated Containerized Facility (Prefab™)
- Series Ceiling Systems
- Hygienic/Hermetic Door Systems
- Surgical Scrub Sinks
- Vinyl Tiles and Epoxy
- Laboratory Fit-outs
  - Worktops
  - Frames
  - Specialty Storage cabinets
  - Service Spines & Reagent Shelving

SERVICES
- Conceptualization
- Planning
- Procurement
- Installation

FACILITY DESIGNS
- Process Architecture
- Biocontainment/Biosafety
- Pharmacy Compounding/Nuclear Medicine
- Cleanroom, Vaccine and Cell Processing
- Laboratory
- Containerized Facility
- ART/IVF
- Cold Chain

CelMate®
CO_2 Incubators

INTRODUCTION

Esco now offers the new CelMate®, 170-liter and 240-liter, entry-level cell culture CO_2 incubator with superb contamination control. It is specifically designed for laboratories looking for a cost-effective CO_2 incubator that can provide the best protection for their cell culture.

Sleek, reliable and intuitive, Esco CelMate® CO_2 incubators provide all-rounded sample protection that brings your scientific dreams one step closer to reality.
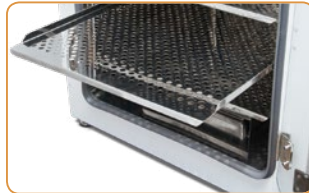
KEY FEATURES

CelMate® CO_2 INCUBATORS
Cradle for Beautiful Cells

CelMate® CO_2 Incubators available in 170 L and 240 L

SHELVING

- Perforated shelving to improve uniformity
- Anti-tip
- Stainless steel
- Built-in grip
- Dismantles without tools for easy cleaning

DIRECT HEAT & AIR JACKET

- Fast and uniform heating
- Rapid temperature recovery without overshoot
- Air jacket improves chamber stability

DUCT WORK

- Directs air flow for rapid recovery and excellent uniformity
- Easily removed for cleaning

WATER PAN

- Precisely heated by base heater to provide high humidity
- Gentle airflow over water surface accelerates humidity recovery

ROUNDED CORNERS

- Seamless design
- Facilitates easier cleaning

DOOR SWITCH

Automatically turns off the blower and gas supply when the door is opened

ULPA FILTER

- 99.999% efficient, superior to conventional HEPA filters
- Filters air continuously
- Chamber returns to ISO Class 5 cleanliness in 11 minutes upon door closing to prevent contamination

TOP COVER

Provides quick access to electrical panel components

CO_2 SENSOR

- IR Sensor
- Single-beam, dual-wavelength IR sensor is drift-free
- Auto-zeroing

SMARTSENSE ™ MICROCONTROLLER INTERFACE

Intuitive, fully equipped control and monitoring system

BLOWER

Gentle airflow in chamber improves recovery and uniformity

OUTER DOOR

- Reversible
- Heated to prevent condensation

SAMPLE PORT

Allows direct measurement of chamber atmosphere such as temperature and CO_2 concentration

INNER GLASS DOOR

For observing sample cells inside the chamber during operation

DOOR LATCH

To lock / unlock the glass door

LEVELING FEET

Easily adjustable

## QUALITY ESCO CONSTRUCTION

- Electrogalvanized steel with white oven-baked epoxy-polyester antimicrobial powder-coated finish.
- External surfaces are powder coated with Esco ISOCIDE™ to eliminate 99.9% of surface bacteria within 24 hours of exposure.
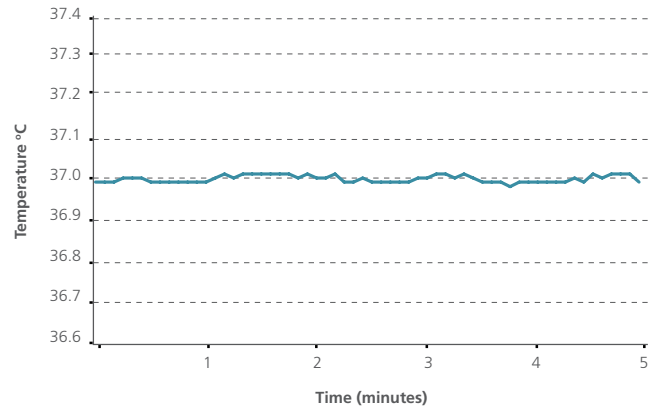- Ensures a healthier, safer and cleaner lab environment.
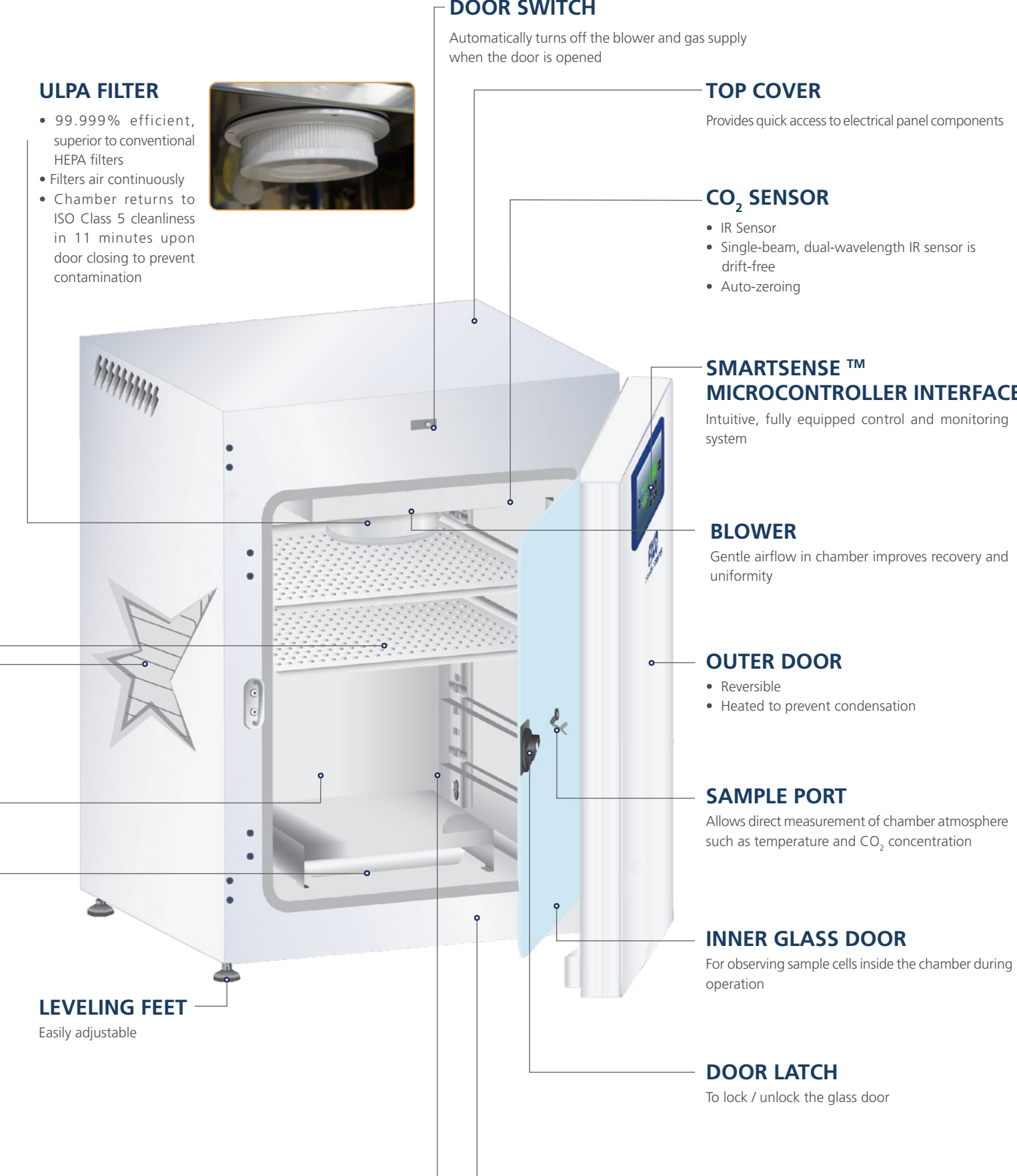
VIVOCELL™ PRECISE PARAMETER CONTROL

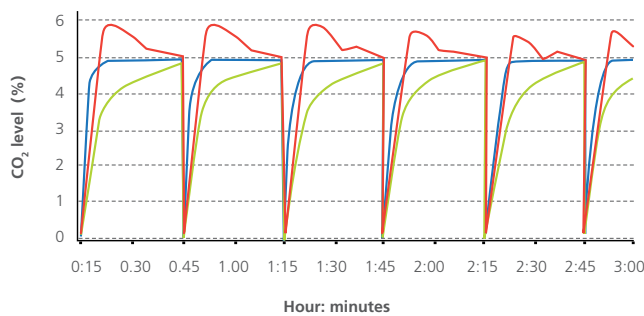## BEST UNIFORMITY AND CONTROL AMONG THE COMPETITION
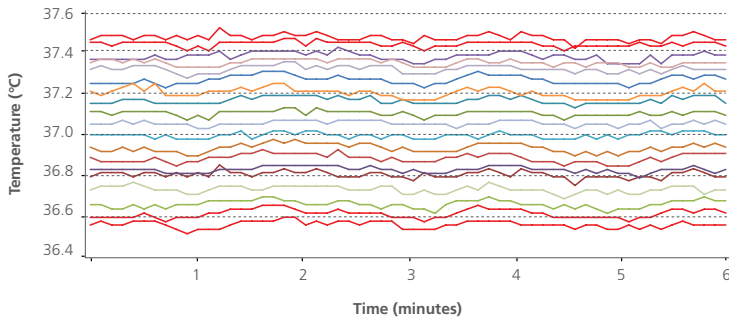
Different lines represent different sensor positions inside the chamber. Esco CelMate® has uniformity variance of less than ± 0.5 °C which means all the samples are evenly heated.*

Minimal fluctuation (± 0.2 °C) ensures temperature stability.*

FAST CO$_2$, TEMPERATURE AND HUMIDITY RECOVERY WITHOUT OVERSHOOT


Precisely-tuned sensor and software result in fast recovery of CO$_2$ without overshoot. This ensures uniform CO$_2$ levels even with frequent incubator door opening.

Recovery of both temperature and humidity is twice as fast as conventional incubators.

■ Company A's model: overshoot.
■ Company B's model: slow recovery.
■ Esco CelMate®: fast recovery, no overshoot.

DIRECT HEAT AND AIR JACKET
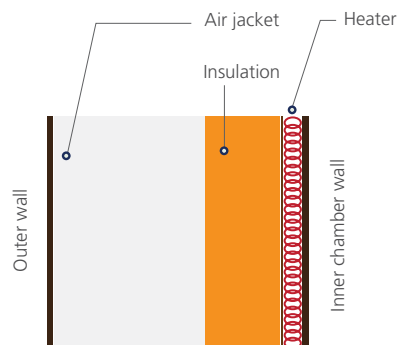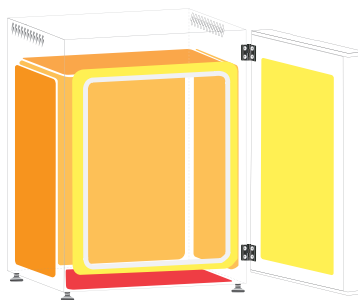
- Direct heating enables rapid temperature recovery while air jacket provides isolation against ambient temperature fluctuations.
- Precise heating in the chamber is achieved by using 8 heaters located in 3 zones. The 3 zones are intelligently controlled by the microcontroller for best temperature uniformity and minimal fluctuation.

■ The main heater provides precise temperature control.
■ The bottom heater warms the water pan and provides humidity.
■ The outer door heater prevents condensation on glass door and facilitates temperature recovery.

VENTIFLOW™ FORCED CONVECTION
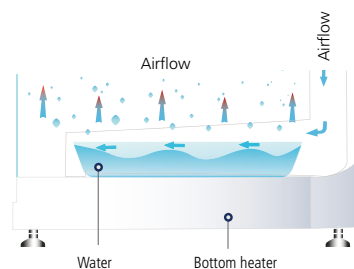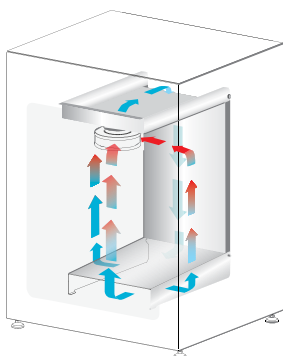
- No disturbance to cell culture.
- Blower automatically stops when door is opened to minimize mixing of chamber and room air.
- Accelerates recovery of chamber air to ISO Class 5 Cleanliness after door closing to prevent contamination.
- Improves CO$_2$, humidity and temperature uniformity.
- Filtered air circulates across water pan to accelerate humidifying process.

Units were factory-tested under controlled environmental conditions per Esco method. Esco does not guarantee identical results in the field under differing conditions. Original report available upon request. Model used in the test is CLM-170B-8.

ROBUST CONTAMINATION CONTROL

STERISAFE™ ULPA FILTRATION SYSTEM
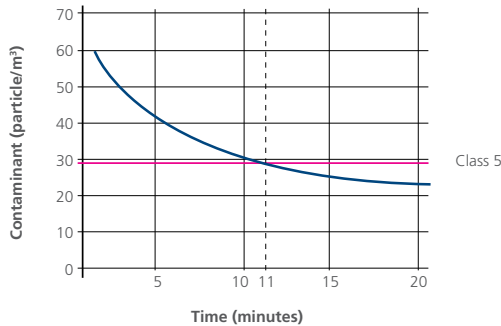
- Chamber air is continuously filtered by ULPA filters to keep the chamber at ISO Class 5 cleanliness. This ensures that all contaminants from both room air and chamber air are filtered, thus only clean air is recirculated.
- ULPA filters operate at 99.999% efficiency, superior to conventional HEPA filters which are 99.99% efficient.
- Chamber achieves ISO Class 5 cleanliness 11 minutes after door closing.*

* Units were factory-tested under controlled environmental conditions per Esco method. Esco does not guarantee identical results in the field under differing conditions. Original report available upon request. Model used in the test was CLM-170B-8.

VALIDATED SWIFTCON™ OVERNIGHT DECONTAMINATION CYCLE
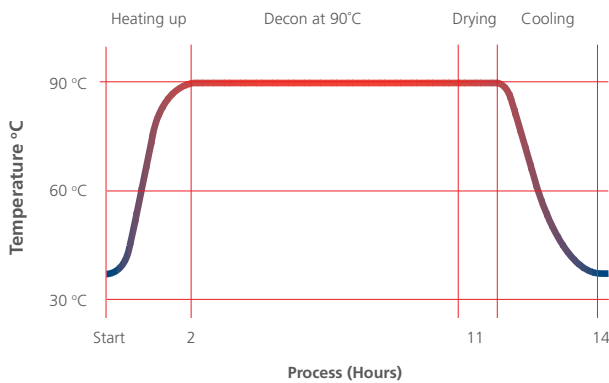
Microorganisms	Before Decon	After Decon
Bacillus atrophaeus	1.59×10^6	0
Aspergillus brasiliensis	1.52×10^4	0
Pseudomonas aeruginosa	2.38×10^6	0
Staphylococcus epidermis	2.33×10^6	0
Escherichia coli	1.57×10^6	0
Staphylococcus aureus	5.72×10^6	0
Enterobacter faecalis	2.15×10^6	0

- The automated SwiftCon™ 90°C moist heat decontamination cycle has been proven effective in deactivating normally resistant fungi, bacterial spores and vegetative cells by the Health Protection Agency (HPA) in UK.
- Full decontamination cycle completes within 20 hours.

- Independently proven to be as effective as high temperature decontamination.
- Lower temperature causes less damage to electronic components, therefore prolongs the life span of the incubator.
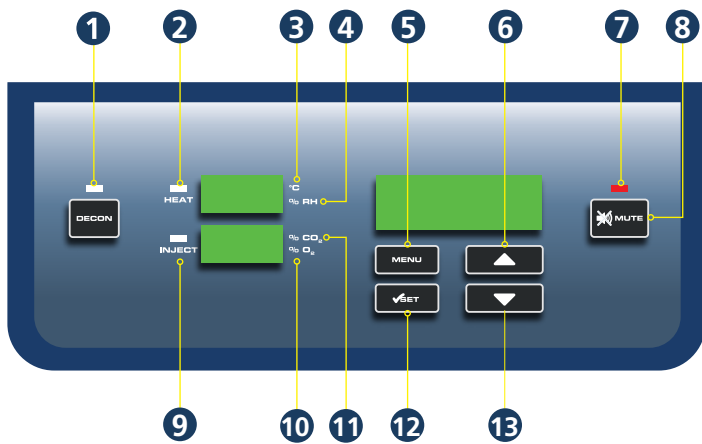
GAS INJECTION LINES ARE FILTERED

- All gas injection lines are filtered via 0.2 micron inlet filters to remove impurities and contaminants before being injected into the chamber.
- Inlet filters are field-replaceable and are located external to the incubator.

CONTROLLER TYPE
USER - FRIENDLY SOFTWARE INTERFACE

1. **Start / stop decontamination cycle**

2. **HEAT LED**
   Lights up when heat is applied to chamber

3. **°C is lit when displaying the temperature**

4. **% RH is lit when displaying the humidity level**

5. **Enter menu / go back to previous menu**

6. **Scroll up / increase value**

7. **ALARMS LED**
   Will blink when errors and warnings occur

8. **Mute alarms**

9. **INJECT LED**
   Lights up when gas is injected

10. **% O_2 is lit when displaying the O_2 concentration**
    (not applicable to CelMate®)

11. **% CO_2 is lit when displaying the CO_2 concentration**

12. **Confirm value / enter a menu**

13. **Scroll down / decrease value**

• **Comprehensive, user-configurable alarms:**
  - Temperature
  - CO_2
  - Humidity (if installed)

• **CelAlert™ alarm system reminds user to replace parts.**

In addition to CO_2 tank low alarm, CelAlert™ has CO_2 tank depletion reminder that automatically calculates how much CO_2 gas is left in the tank and alerts user to replace the tank one week before the gas is depleted. This gives the user some buffer time to place orders for new tanks.

ULPA reminder will alert user to replace ULPA filter.

• **Intelligent data and event logger records all incubator parameters for on-screen recall. A 2 MB built-in flash memory guarantees long-term storage of data.**

• **Diagnostic interface and online quick help provide comprehensive solutions to frequently encountered problems.**

Voyager®

Remote Monitoring, Datalogging, Programming Software

Esco Voyager® is a PC-based software package developed for the remote monitoring, datalogging, and programming / device configuration of Esco thermostatic products.

A centralized monitoring and control system for the laboratory, Esco Voyager® provides extra protection for you and your samples.

Voyager® interfaces with individual Esco equipment over RS485 using the EscoBUS communications protocol. Multiple equipment maybe interfaced to a single PC.

Compatible Equipment
• Lexicon® - Ultra-low Temperature Freezer
• CelCulture® - CO_2 Incubator (CCL)
• CelMate® - CO_2 Incubator (CLM)
• Isotherm® - Forced Convection Oven (OFA)
• Isotherm® - Forced Convection Incubator (IFA)
• Isotherm® - Refrigerated Incubator (IFC)
• Isotherm® - Natural Convection Incubator (INA)

REAR PANEL

❶ Cooling Fan

Prevents the electrical panel from overheating.

❷ Power Supply Inlet

Connects the incubator unit to the power source.

❸ RS485 Communication Port

Provides serial communication port for PC. It can be daisy-chained from one product to another and can also be connected to a PC

❹ Analog Port (Optional)

Allows the incubator to output analog signals representing temperature, CO_2/O_2 concentration and relative humidity, depending on the options available in the incubator. This allows the incubator to be connected to an in-house data acquisition or alarm system.

❺ Alarm Contact

A set of relay contacts located on the rear panel of the unit is provided to monitor temperature, humidity, CO_2 alarms. These can be connected to a remote alarm system.

❻ CO$_2$ Gas Supply Inlet

Connects the CO_2 gas supply to the incubator. Inlet pressure requirement is 15 psi.

❼ Gas Inlet Filter

Provided to remove any contaminants from the gas supply.

❽ Access Port

Allows cables, hoses or additional sensors to be routed into the work space. A rubber stopper with controlled leak is installed as standard configuration and is part of standard accessories.

CelMate® CO₂ INCUBATOR SENSOR

IR SENSOR

An Infrared (IR) sensor is a versatile instrument for measuring CO_2 level inside the incubator. The CARBOCAP® sensor is silicon-based and its operation is based on the NDIR Single-Beam Dual-Wavelength principle.

IR-based sensors are not affected by water vapor, dust or most chemicals. The single-beam dual-wavelength technology (one reference and one measurement) ensures a drift-free sensor that does not require calibration by the user.

Operating principle

The light source is positioned to shine at the IR detector so that the light travels a fixed distance to the detector, where the intensity of the light is measured. A Fabry-Perot Interferometer (FPI) is positioned just in front of the IR detector. The FPI is a tunable filter which allows only certain wavelengths of light to pass through to the detector.

Carbon dioxide absorbs certain wavelengths of light and not others, so the FPI is designed to pass light at a CO_2 absorption wavelength (4.26 μm) and
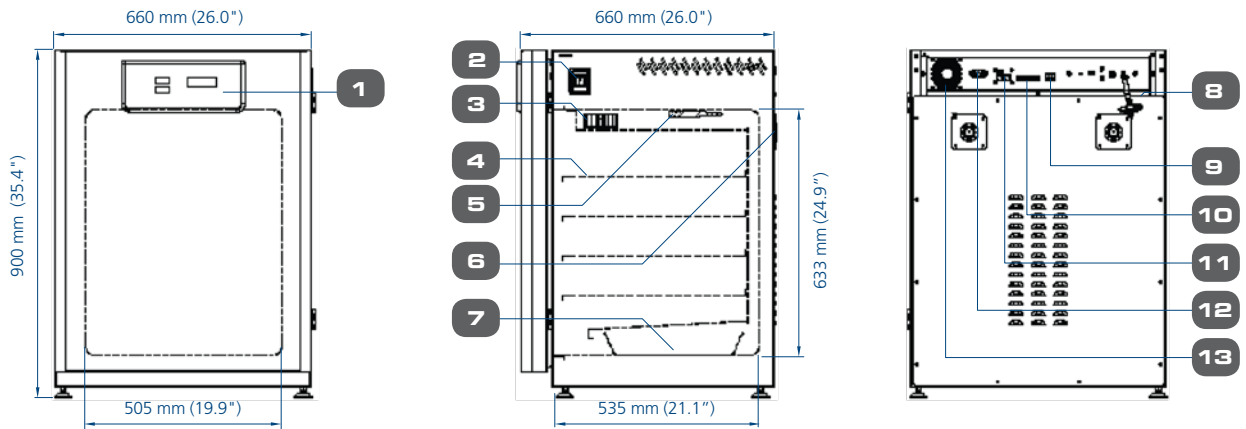
a nearby, non-absorbing wavelength.

When the sensor is operating, the FPI is regularly tuned back and forth between the two wavelengths. At the CO_2 absorption wavelength, the intensity of detected light is reduced in proportion to the concentration of CO_2 in the optical path. The light intensity measured at the non-absorbing wavelength serves as a baseline for comparison.

MODELS	ITEM CODE	DESCRIPTION
CLM-170B-8	2170106	CelMate® Incubator 170 L, IR Sensor, CO₂ Control, ULPA, Moist Heat Decon, 230 VAC, 50/60 Hz (Without Decon Pump)
CLM-240B-8	2170107	CelMate® Incubator 240 L, IR Sensor, CO₂ Control, ULPA, Moist Heat Decon, 230 VAC, 50/60 Hz (Without Decon Pump)
CLM-170B-9	2170250	CelMate® Incubator 170 L, IR Sensor, CO₂ Control, ULPA, Moist Heat Decon, 115 VAC, 50/60 Hz (Without Decon Pump)
CLM-240B-9	2170251	CelMate® Incubator 240 L, IR Sensor, CO₂ Control, ULPA, Moist Heat Decon, 115 VAC, 50/60 Hz (Without Decon Pump)

ENGINEERING DRAWING

MODEL 170L

660 mm (26.0") — 900 mm (35.4") — 505 mm (19.9") — 660 mm (26.0") — 633 mm (24.9") — 535 mm (21.1")

MODEL 240L

750 mm (29.5") — 900 mm (35.4") — 595 mm (23.4") — 770 mm (30.3") — 633 mm (24.9") — 640 mm (25.2")
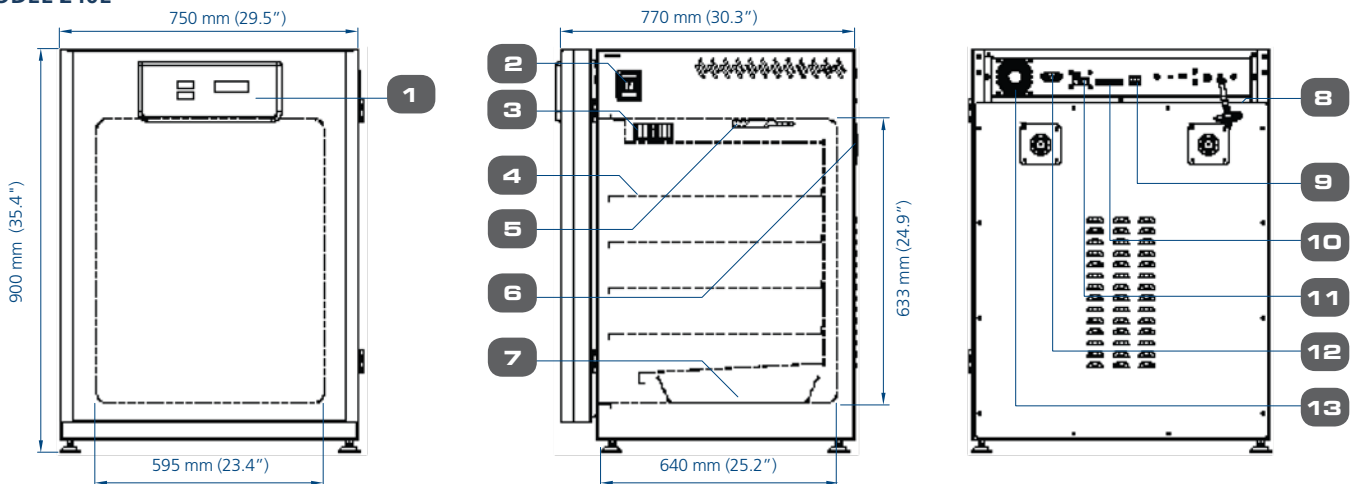
1. Control Panel
2. On / Off Switch
3. Blower
4. Adjustable Shelves
5. IR Sensor
6. Access Port
7. Humidity Pan
8. CO₂ Gas Supply
9. Alarm Contact
10. Analog Output
11. RS485
12. Power Supply Inlet
13. Cooling Fan

GENERAL SPECIFICATIONS
CELMATE® CO_2 INCUBATORS

	CLM-170B-_	CLM-240B-_
TEMPERATURE		
Temperature Control Method	Direct Heat and Air Jacket using Microcontroller PI	
Ambient Temperature Range	18 to 34℃ (64 to 93 ℉)	
Temperature Range, °C	Ambient +3 to 60	
Temperature Uniformity, °C*	< ±0.5	
Temperature Accuracy, °C*	<± 0.1	
Temperature Recovery Time** (after 30 seconds door opening, 98% from initial value)	≤5 minutes	≤6 minutes
CO_2		
CO_2 Control System	Microcontroller PI	
CO_2 Range, % CO_2	0-20	
CO_2 Accuracy, % CO_2***	±0.1	
CO_2 Sensor	Infrared (IR) Sensor	
CO_2 Recovery Time**** (after 30 seconds door opening, 98% from initial value)	≤5 minutes	≤6 minutes
HUMIDITY		
Humidification Method	Humidity pan	
Humidity Range*****, % RH	Up to 95%	
PHYSICAL CONSTRUCTION		
Interior Volume	170 L (6 ft³)	240 L (8.5 ft³)
External Dimensions (W x D x H)	660 x 660 x 900 mm (26.0" x 26.0" x 35.4")	750 x 770 x 900 mm (29.5" x 30.3" x 35.4")
Internal Dimensions (W x D x H)	505 x 535 x 633 mm (19.9" x 21.1" x 24.9")	595 x 640 x 633 mm (23.4" x 25.2" x 24.9")
Chamber Construction — Main Body	Electrogalvanized steel with ISOCIDE™ antimicrobial coating	
Chamber Construction — Interior Material	Stainless steel, type 304	
Chamber Construction — Number of Shelves	4	
Chamber Construction — Maximum Number of Shelves	7	
Chamber Construction — Shelves Area (W x D)	465 x 470 mm (18.3" x 18.5")	550 x 560 mm (21.7" x 22.0")
Chamber Construction — Maximum Load per Shelf	11 kg/shelf (24.3 lbs/shelf)	15 kg/shelf (33.1 lbs/shelf)
Electrical Configuration 110-130 VAC, 50/60 Hz — Nominal Power at 37°C	42.2 W	42.2 W
Electrical Configuration 110-130 VAC, 50/60 Hz — Maximum Power Consumption	1184.3 W	1727.9 W
Electrical Configuration 110-130 VAC, 50/60 Hz — Full Load Amps	9.2 A	13.4 A
Electrical Configuration 220-240 VAC, 50/60 Hz — Nominal Power at 37°C	42.2 W	42.2 W
Electrical Configuration 220-240 VAC, 50/60 Hz — Maximum Power Consumption	1008.9 W	1270 W
Electrical Configuration 220-240 VAC, 50/60 Hz — Full Load Amps	4.2 A	6.5 A
Net Weight	101 kg (222.67 lbs.)	121 kg (266.76 lbs.)
Shipping Weight	120 kg (264.6 lbs)	155 kg (341.7 lbs)
Shipping Dimensions (W x D x H)	850 x 720 x 1120 mm (33.5" x 28.3" x 44.1")	850 x 850 x 1120 mm (33.5" x 33.5" x 44.1")
Shipping Volume	0.70 m³ (24.85 ft³)	0.79 m³ (28.03 ft³)
CONTAMINATION CONTROL		
Contamination Control Methods	1) Main body is electro-galvanized steel with ISOCIDE™ antimicrobial coating; 2) 90℃ moist heat OVERNIGHT decontamination cycle (HPA validated); 3) ULPA filter 4) 0.2-micron inlet filter for gas inputs; 5) 1-micron air circulation filter	

All data recorded is specified for standard models with unloaded chambers and tested under optimum factory setting conditions of 23°C and 60% ambient humidity.
*Results are achieved when tested at 37 °C as set point. Results may vary if set point changes and calibration is needed.
**For temperature not exceeding 37 °C.
***Results are achieved when tested at 5% CO_2 as set point. Results may vary if set point changes and calibration is needed.
****For CO_2 level not exceeding 5.2%.
***** Esco does not guarantee condensation-free chamber at humidity level higher than 90%.

OPTIONS AND ACCESSORIES

COA-1001 / COA-1001-F Humidity Display

This option allows the incubator to monitor the relative humidity inside the chamber. The probe for the sensor works in freezing conditions (-70°C) and also in temperatures up to 180°C. The sensor is easy to install and has excellent accuracy. The airflow in the chamber does not affect the measurement. The sensor is maintenance-free. It does not need to be removed during 90°C moist heat decontamination cycle.

COA-1002 / COA-1002-F CO$_2$ Backup

This option allows two tanks of CO$_2$ to be connected to the incubator. It will automatically switch from the primary tank to the secondary tank when low gas pressure is detected on the primary tank.
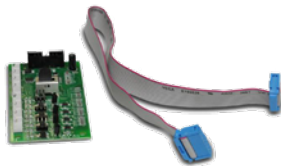
COA-1005 / COA-1005-F Analog Output

A set of relay contacts is provided at the rear of the incubator that allows the incubator to output analog signals representing the temperature, CO$_2$ / O$_2$ content and relative humidity, depending on the options available in your incubator. This allows the chamber to be connected to an in-house data acquisition or alarm system. This option can also be field-installed.

The analog signal outputs can be set to operate in either voltage DC (0-5 Vdc) or current (4-20 mA) mode. The factory default setting is voltage. Switch on the board to toggle between the modes.

COA-1006/ COA-1006-F Sealed Inner Door Kit with 4 glass doors (170L)
COA-2029/ COA-2029-F Sealed Inner Door Kit with 4 glass doors (240L)
COA-2040/ COA-2040-F Sealed Inner Door Kit with 6 glass doors (240L)

CelMate® CO$_2$ incubators can be equipped with 4 or 6 glass doors, that can be opened horizontally which allows access to defined sections of the incubator without affecting much the inner atmosphere of the chamber. This minimizes recovery time and contamination risks. The sealed-inner door is also reversible as same as the outer door which can be installed to be opened either from-right-to-left or from-left-to right. The sealed-inner door is available as a factory-installed option or field installed retrofit kit.

COA-2001-F (170 L) / COA-2019-F (240 L) Roller Base

Roller base is available with casters for mobility of your incubators and to provide protection against floor contamination.

COA-2002-F (170 L) / COA-2021-F (240 L) Floor Stand 200 mm (8.0") With Adjustable Feet

Floor stands are available with adjustable feet, with a nominal range of 180 mm to 250 mm (7.1" to 9.8") for comfortable access to the incubator and to avoid floor contamination.

COA-2003-F (170 L) / COA-2023-F (240 L) Floor Stand 700 mm (27.6") With Casters

This support stand raises the incubator to a height of 700 mm (27.6") above the floor for comfortable access. It comes with casters for mobility of your incubators.

COA-2005-F 2-Stage Gas Regulator for CO$_2$

CO$_2$ and N$_2$ gas input regulators reduce pressure from the tank to the incubator. It has dual pressure gauges, barbed line connection and shut-off valve. It prevents over-pressurization of the gas supply into the incubator which could cause the tubing to burst.

• CGA 320 connector (U.S. Standard)
• BP-BS341-#8-NT4 connector (British Standard)

Note:

Compatible with European DIN477, French NFE29-650 and Australia AS2473 • G5/8-RH connector (China Standard)
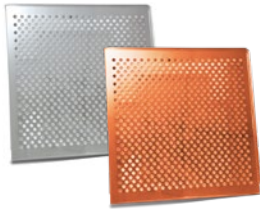
COA-2007-F (170 L)/ COA-2025-F (240 L) Extra Shelf (Stainless Steel) for Standard Stainless Steel Chamber

Each CelMate® CO$_2$ incubator comes standard with 4 shelves and it can accommodate up to a maximum of 7 shelves.

COA-2008-F Stacking Kit

The stacking kit is a provision to stack one incubator on top of another incubator. Four stacking brackets are included as standard inside the Accessories Kit Box with each incubator.

COA-2010-F Electronic CO$_2$ Analyzer, For CO$_2$ / Temp Measurement
COA-2016-F Electronic CO$_2$ + O$_2$ Analyzer, For CO$_2$ / O$_2$ / Temp Measurement
COA-2017-F Electronic CO$_2$ + O$_2$ + RH Analyzer, For CO$_2$ / O$_2$ / RH / Temp Measurement

The electronic analyzer allows the measurement of CO$_2$ concentration, O$_2$ concentration, relative humidity and temperature (temperature probe already included).

COA-2012-F 6" Chart Recorder, Temp, 115/230 VAC, 50/60 Hz

The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument for on-the-spot written documentation of incubator chamber temperature. This model offers 6" chart of temperature data.

COA-2013-F 8" Chart Recorder, Temp/Temp, 115/230 VAC, 50/60 Hz

The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument for on-the-spot written documentation of incubator chamber temperature. This model offers 8" chart of temperature data and comes with 2 remote probes for dual temperature monitoring.

COA-2014-F 6" Chart Recorder, Temp/RH, 115/230VAC 50/60 Hz

The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument for on-the-spot written documentation of incubator chamber temperature. This model offers 6" chart of temperature and humidity data.

COA-2015-F Inner Door Shelving Kit
(4 Sets With Total 12 Mini-Shelves For One Incubator) (170 L)

These mini-shelves are to be used with the Sealed Inner Door Kit installed. There are 4 sets with a total of 12 mini-shelves on each incubator.

5250001 Voyager® Software Kit

Esco Voyager® is a PC-based software package developed for the remote monitoring, datalogging and programming / device configuration of Esco controlled environment laboratory equipment. Compatible equipment includes laboratory ovens and incubators, low temperature incubators, CO$_2$ incubators, and ultra-low temperature freezers.
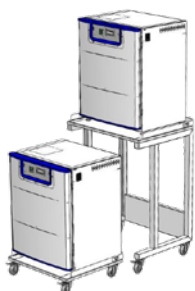
COA-2004 CCL-170 2-UNITS FLOOR STAND

This floor stand allows two units to be stacked without being physically in contact with each other. For the lower unit, it uses roller base for mobility and for easy pull out of the lower unit without the need to remove the upper unit in case of troubleshooting. Floor stand for upper unit also has casters for easy relocation.

ORDERING INFORMATION

ACCESSORIES	ITEM CODE	DESCRIPTION
COA-1001	5170470	Humidity Display, Factory-installed
COA-1001-F	5170471	Humidity Display, Field-installed Kit
COA-1002	5170472	CO$_2$ Backup (Tank Switcher), Factory-installed
COA-1002-F	5170473	CO$_2$ Backup (Tank Switcher), Field-installed
COA-1004	5170474	Reversed Door Swing, Factory-installed
COA-1005	5170475	Analog Outputs, Factory-installed
COA-1005-F	5170476	Analog Outputs, Field-installed
COA-1006	5170477	Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Factory-installed
COA-1006-F	5170488	Sealed Inner Door Kit for 170 L (4 Glass Doors withLatches), Field-installed
COA-2029	5170654	Sealed Inner Door Kit for 240 L (4 Glass Doors with Latches), Factory-installed
COA-2029-F	5170655	Sealed Inner Door Kit for 240 L (4 Glass Doors with Latches), Field-installed
COA-2040	5170783	Sealed Inner Door Kit for 240 L (6 Glass Doors with Latches), Factory-installed
COA-2040-F	5170786	Sealed Inner Door Kit for 240 L (6 Glass Doors with Latches), Field-installed
COA-2001-F	5170478	Roller Base (170 L)
COA-2019-F	5170420	Roller Base (240 L)
COA-2002-F	5170479	Floor Stand 200 mm (8.0") with Adjustable Feet (170 L)
COA-2021-F	5170422	Floor Stand 200 mm (8.0") with Adjustable Feet (240 L)
COA-2003-F	5170480	Floor Stand 700 mm (27.6") with Casters (170 L)
COA-2023-F	5170424	Floor Stand 700 mm (27.6") with Casters (240 L)
COA-2005-F	5170481	2-Stage Gas Regulator for CO$_2$ Choose one of the connectors below: 1080588 - CGA 320 Connector (US standard) 1080589 - BP-BS34-#8-NT4 Connector (British standard) 1080590 - G5/8-RH Connector (China standard)
COA-2007-F	5170327	Extra Shelf (170 L, Stainless Steel)
COA-2025-F	5170426	Extra Shelf (240 L, Stainless Steel)
COA-2008-F	5170483	Stacking Kit (one set included with every unit purchased)
COA-2010-F	5170329	Electronic CO$_2$ Analyzer, For CO$_2$ / Temp Measurement (with Temperature Probe)
COA-2016-F	5170397	Electronic CO$_2$ + O$_2$ Analyzer, For CO$_2$ / O$_2$ / Temperature Measurement (with Temperature Probe)
COA-2017-F	5170398	Electronic CO$_2$ + O$_2$ + RH Analyzer, For CO$_2$ / O$_2$ / RH / Temperature Measurement (with Temperature Probe)
COA-2011-F	2170020	IQ / OQ Documentation
COA-2012-F	2170021	6" Chart Recorder, Temp, 115/230 VAC, 50/60 Hz
COA-2013-F	2170022	8" Chart Recorder, Temp/Temp, 115/230 VAC, 50/60 Hz
COA-2014-F	2170023	6" Chart Recorder, Temp/RH, 115/230 VAC, 50/60 Hz
COA-2015-F	5170487	Inner Door Shelving Kit for 170 L (4 sets with total 12 mini-shelves for one incubator)
Voyager®	5170489	Voyager® Software Kit
COA-2004	5250001	2-units Floor Stand Stacking Kit (For 170L)

After Sales Services

Parts Availability

Whenever service is needed and parts are required, minimizing downtime is a critical objective. Statistical usage analysis helps Esco to predict parts life, permitting Esco to manage logistics and stage proper inventories around the world. The combination of predictive maintenance, historical data and geospecific proximity assures our customers that parts and labor are available whenever service is scheduled through the local sales organization.

Registration, Documentation and Instruction

Quality control at Esco extends from research and development through engineering, manufacturing, shipment, delivery and customer feedback. Esco maintains an aggressive program to encourage warranty card registration by mail, email or online submission so that we know where Esco products are located and how they are being used. Rest assured that all information disclosed from warranty registrations will be kept confidential. All Esco products include unique serial numbers for identification. Documentation for all performance tests is archived and maintained for customer reference.

Online Technical Information

Site preparation instructions are useful before product arrival and installation. Installation and start-up manuals, operation manuals and quick reference guides are available anytime from the Esco resources online.

NSF International Accreditations

The National Sanitation Foundation (NSF) International is an independent, non-profit organization that provides standards development, product certification, auditing, education and risk management for public health and the environment.

In line with Esco's commitment in providing world class services worldwide, Esco has a large contingent of NSF accredited certifiers which makes Esco not only an **E**xcellent **S**tandards **CO**mpany but also an **E**xcellent **S**ervice **CO**mpany, which exemplifies Esco's collective quest of being an **E**ternally **S**uccessful **CO**mpany.

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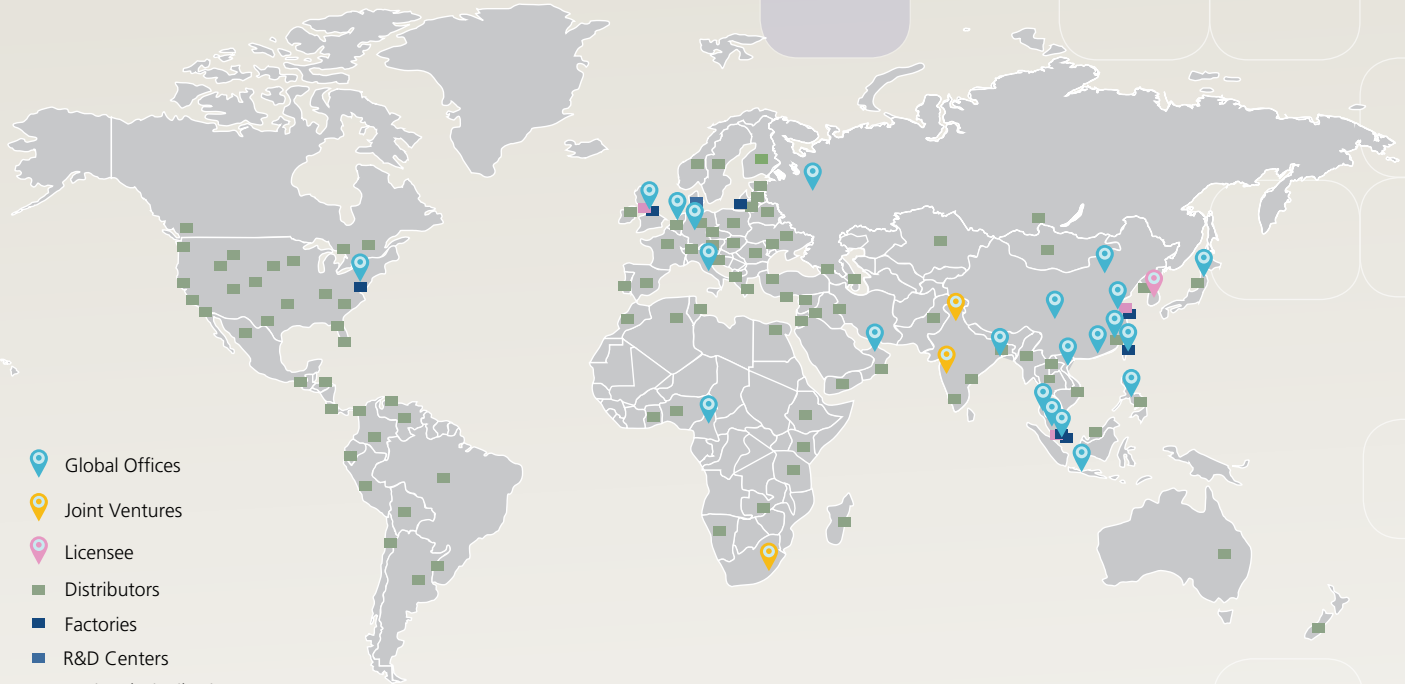
References and Links

For more information, you can visit Esco at www.escoglobal.com

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