

ESCO

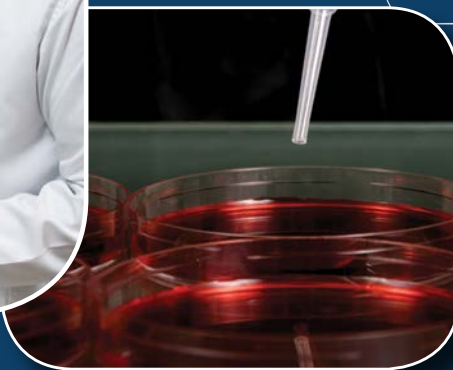
WORLD CLASS. WORLDWIDE.



CelMate® CO₂ Incubators

CelMate®

CO₂ Incubators
Cradle for Beautiful Cells





Welcome to Esco

Esco's Vision is to provide enabling technologies for scientific discoveries to make human lives healthier and safer.



Esco represents innovation and forward-thinking designs, which are all coupled with the highest standard quality since 1978. The Esco Group of Companies remains dedicated in delivering innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical and IVF community. With the most extensive product line in the industry, our products have passed a number of international standards and certifications. Esco operates under ISO 9001, ISO 14001 and ISO 13485.

Availability and Accessibility. Headquartered in Singapore, manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, services and marketing subsidiaries are located in 12 major markets including the US, UK, Japan, China and India. Our regional distribution centers are located in Bangladesh, China, Denmark, Germany, Hong Kong, India, Indonesia, Italy, Japan, Lithuania, Malaysia, Philippines, Russia, Singapore, South Africa, South Korea, Russia, Taiwan, Thailand, UAE, United Kingdom, USA, and Vietnam. Because of our worldwide presence, you can be sure that Esco is within your reach.

High Quality, Reliable and Dependable. Our customers are confident that only with the best quality, reliable, and dependable products, can they be sure of the accuracy of their research and procedures. 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. Comfort of our users is ensured by building ergonomic designs and by reducing the noise levels of the units.

Esco Cares for the Environment. One in every four of Esco's employees is involved in Research and Development and a number of these evaluate new components and/or designs to produce energy efficient equipment. Being GREEN is more than just modifying the parts we use to produce a new energy efficient technology, it also embodies the every aspect of the company.

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

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

Products and Application

Life Sciences Laboratory Equipment

Sample Preparation

- Class I Biological 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

- CO₂ Incubators, Direct Heat Air-Jacketed
- CO₂ Incubators with Cooling System
- CO₂ Incubators with Stainless Steel Exterior
- Laboratory Shakers

Sample Analysis

PCR Thermal Cyclers

- Conventional Thermal Cyclers
- Real-time PCR Systems

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

General Equipment

Laboratory Thermostatic Products

- Laboratory Oven
- Forced Convection Laboratory Incubator
- Natural Convection Laboratory Incubator
- Refrigerated 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® CO₂ 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 Label Hatches
- Laminar Flow Storage Cabinet

Ventilation Containment

- Ventilated Balance Enclosure

VacciXcell Products

Bioreactors and Fermenters

- CelCradle™
- TideCell®
- 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®

CO₂ Incubators

INTRODUCTION

Esco now offers the new CelMate®, 170-liter and 240-liter, entry-level cell culture CO₂ incubator with superb contamination control. It is specifically designed for laboratories looking for a cost-effective CO₂ incubator that can provide the best protection for their cell culture.

Sleek, reliable and intuitive, Esco CelMate® CO₂ incubators provide all-rounded sample protection that brings your scientific dreams one step closer to reality.

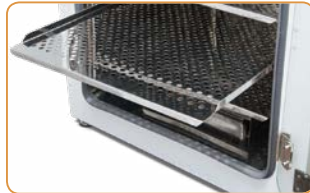
KEY FEATURES

CelMate® CO₂ INCUBATORS

Cradle for Beautiful Cells



CelMate® CO₂ 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

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



DOOR SWITCH

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

TOP COVER

Provides quick access to electrical panel components

CO₂ 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 CO₂ concentration

INNER GLASS DOOR

For observing sample cells inside the chamber during operation

DOOR LATCH

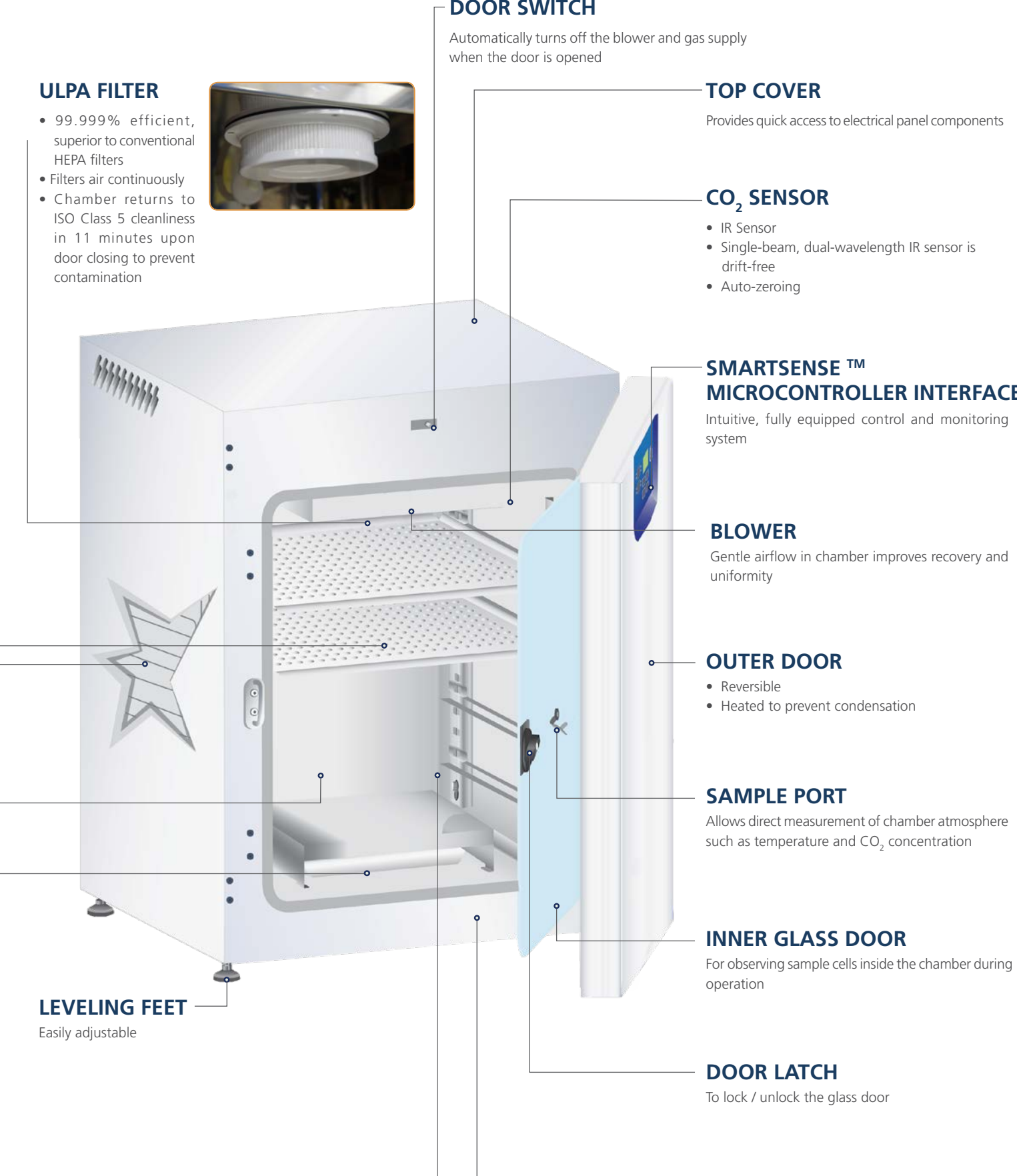
To lock / unlock the glass door

LEVELING FEET

Easily adjustable

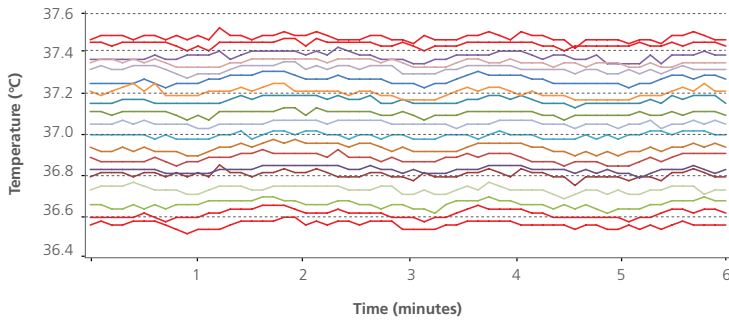
QUALITY ESCO CONSTRUCTION

- 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.

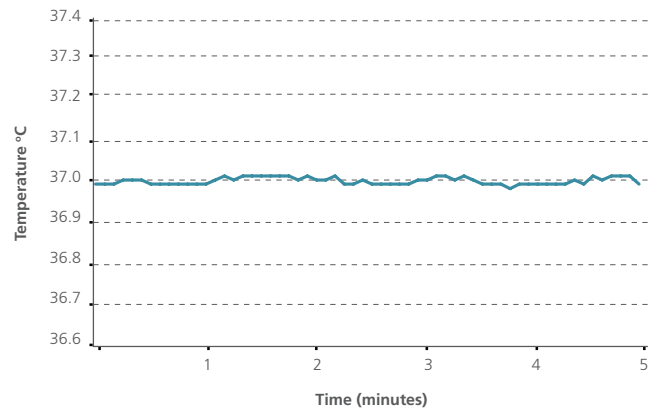


VIVOCELL™ PRECISE PARAMETER CONTROL

BEST UNIFORMITY AND CONTROL AMONG THE COMPETITION

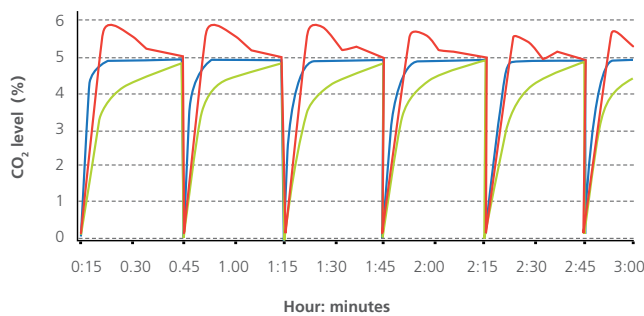


Different lines represent different sensor positions inside the chamber. Esco CelMate® has uniformity variance of less than ± 0.5 °C which means all the samples are evenly heated.*



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

FAST CO₂, TEMPERATURE AND HUMIDITY RECOVERY WITHOUT OVERTHOOT

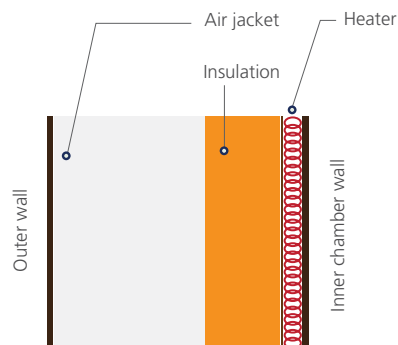
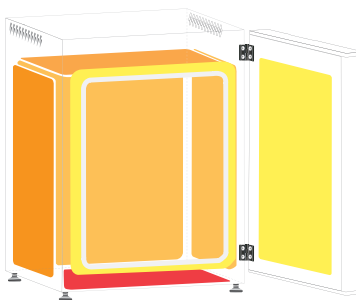


Precisely-tuned sensor and software result in fast recovery of CO₂ without overshoot. This ensures uniform CO₂ levels even with frequent incubator door opening.

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

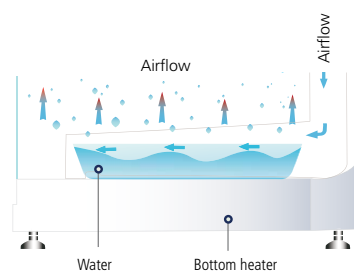
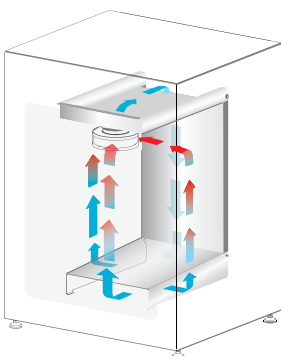


- Direct heating enables rapid temperature recovery while air jacket provides isolation against ambient temperature fluctuations.

- 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

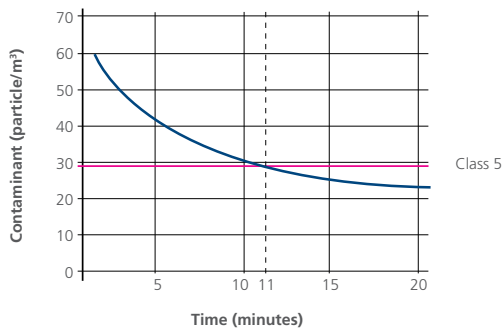


- No disturbance to cell culture.
- Blower automatically stops when door is opened to minimize mixing of chamber and room air.
- Accelerates recovery of chamber air to ISO Class 5 Cleanliness after door closing to prevent contamination.
- Improves CO₂, humidity and temperature uniformity.
- Filtered 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

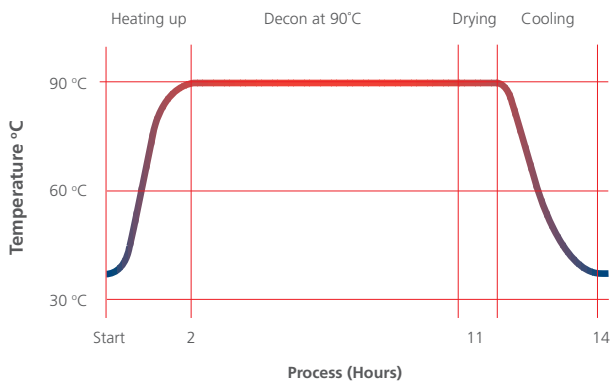
STERISAFE™ ULPA FILTRATION SYSTEM



- 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
<i>Bacillus atrophaeus</i>	1.59 x 10 ⁶	0
<i>Aspergillus brasiliensis</i>	1.52 x 10 ⁴	0
<i>Pseudomonas aeruginosa</i>	2.38 x 10 ⁶	0
<i>Staphylococcus epidermis</i>	2.33 x 10 ⁶	0
<i>Escherichia coli</i>	1.57 x 10 ⁶	0
<i>Staphylococcus aureus</i>	5.72 x 10 ⁶	0
<i>Enterobacter faecalis</i>	2.15 x 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.

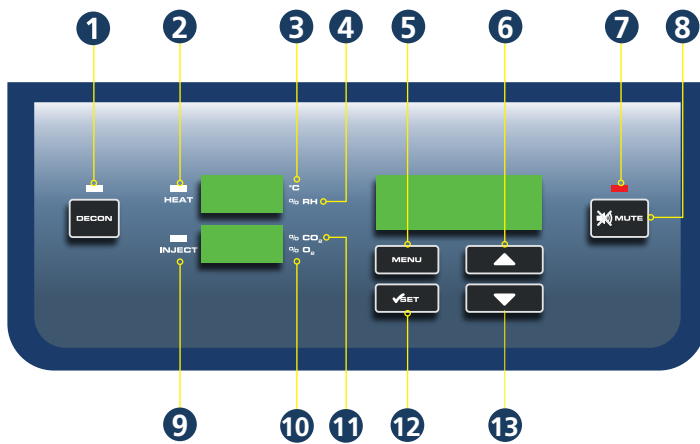
GAS INJECTION LINES ARE FILTERED



- 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. **% O₂ is lit** when displaying the O₂ concentration (not applicable to CelMate®)
11. **% CO₂ is lit** when displaying the CO₂ concentration
12. **Confirm value / enter a menu**
13. **Scroll down / decrease value**

• Comprehensive, user-configurable alarms:

- Temperature
- CO₂
- Humidity (if installed)

• CelAlert™ alarm system reminds user to replace parts.

```
NEW CO2 TANK
CO2 TANK NET WEIGHT
IN KG: 0031
NEW CO2 TANK IS SET
```

In addition to CO₂ tank low alarm, CelAlert™ has CO₂ tank depletion reminder that automatically calculates how much CO₂ 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.

```
SET ULPA REMINDER
ULPA REMINDER
TIME <MONTHS> :12
REMINDER IS SET
```

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.

```
MAIN MENU
CALIBRATION
ADMIN
>DATALOGGING
```

```
DATALOGGING
>SHOW TEMP DATA LOG 012016 0724 36.8°C
SHOW %CO2 DATA LOG 012016 0719 37.0°C
DATA LOG PERIOD 012016 0714 37.1°C
012016 0709 37.3°C
```

• 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® - CO₂ Incubator (CCL)
- CelMate® - CO₂ Incubator (CLM)
- Isotherm® - Forced Convection Oven (OFA)
- Isotherm® - Forced Convection Incubator (IFA)
- Isotherm® - Refrigerated Incubator (IFC)
- Isotherm® - Natural Convection Incubator (INA)



REAR PANEL



1 Cooling Fan
Prevents the electrical panel from overheating.



5 Alarm Contact
A set of relay contacts located on the rear panel of the unit is provided to monitor temperature, humidity, CO₂ alarms. These can be connected to a remote alarm system.



2 Power Supply Inlet
Connects the incubator unit to the power source.



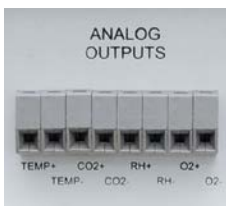
6 CO₂ Gas Supply Inlet
Connects the CO₂ gas supply to the incubator. Inlet pressure requirement is 15 psi.



3 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



7 Gas Inlet Filter
Provided to remove any contaminants from the gas supply.



4 Analog Port (Optional)
Allows the incubator to output analog signals representing temperature, CO₂/O₂ 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.



8 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 CO₂ 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.

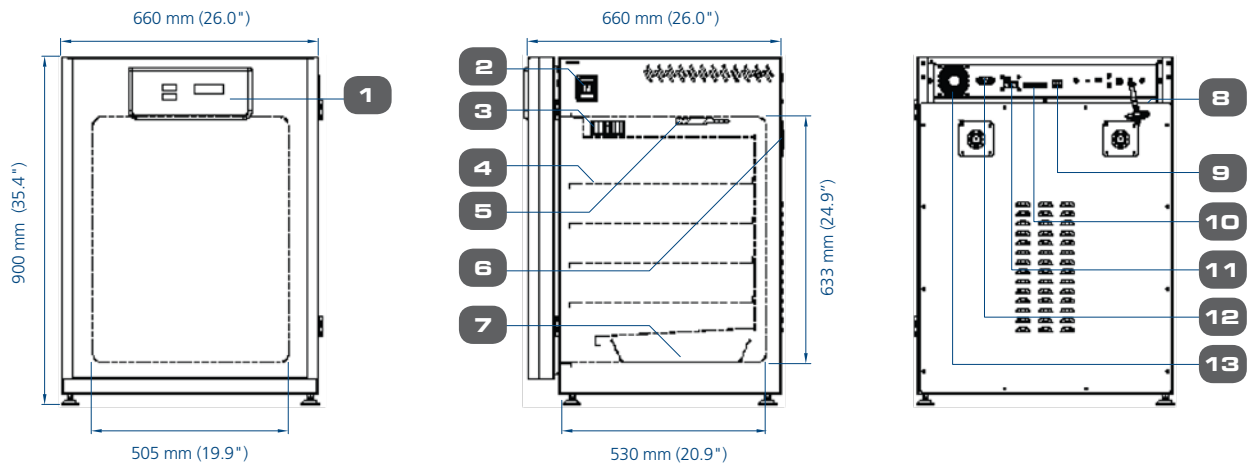
Carbon dioxide absorbs certain wavelengths of light and not others, so the FPI is designed to pass light at a CO₂ absorption wavelength (4.26 μm) and a nearby, non-absorbing wavelength.

When the sensor is operating, the FPI is regularly tuned back and forth between the two wavelengths. At the CO₂ absorption wavelength, the intensity of detected light is reduced in proportion to the concentration of CO₂ 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, CO ₂ Control, ULPA, Moist Heat Decon, 230 VAC, 50/60 Hz (Without Decon Pump)
CLM-240B-8	2170107	CelMate® Incubator 240 L, IR Sensor, CO ₂ Control, ULPA, Moist Heat Decon, 230 VAC, 50/60 Hz (Without Decon Pump)
CLM-170B-9	2170250	CelMate® Incubator 170 L, IR Sensor, CO ₂ Control, ULPA, Moist Heat Decon, 115 VAC, 50/60 Hz (Without Decon Pump)
CLM-240B-9	2170251	CelMate® Incubator 240 L, IR Sensor, CO ₂ Control, ULPA, Moist Heat Decon, 115 VAC, 50/60 Hz (Without Decon Pump)

ENGINEERING DRAWING

MODEL 170L



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® CO₂ INCUBATORS

	CLM-170B-__	CLM-240B-__	
TEMPERATURE			
Temperature Control Method	Direct Heat and Air Jacket using Microcontroller PI		
Ambient Temperature Range	18 to 34°C (64 to 93 °F)		
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, 97% from initial value)	≤5 minutes	≤6 minutes	
CO₂			
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)	≤5 minutes	≤6 minutes	
HUMIDITY			
Humidification Method	Humidity pan		
Humidity Range***, % RH	Up to 95%		
PHYSICAL CONSTRUCTION			
Interior Volume	170 L (6 ft ³)	240 L (8.5 ft ³)	
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	
	Interior Material	Stainless steel, type 304	
	Number of Shelves	4	
	Maximum Number of Shelves	7	
	Shelves Area (W x D)	465 x 470 mm (18.3" x 18.5")	550 x 560 mm (21.7" x 22.0")
	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	42.9 W	49.5 W
	Maximum Power Consumption	1184.3 W	1727.9 W
	Full Load Amps	9.2 A	13.4 A
Electrical Configuration 220-240 VAC, 50/60 Hz	Nominal Power at 37°C	46.2 W	50.7 W
	Maximum Power Consumption	1008.9 W	1270 W
	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 m ³ (24.85 ft ³)	0.79 m ³ (28.03 ft ³)	
CONTAMINATION CONTROL			
Contamination Control Methods	1) Main body is electrogalvanized steel with ISOCIDE™ antimicrobial coating; 2) 90°C Moist Heat Decontamination Cycle (no decon pump); 3) 0.2 micron inlet filter for gas inputs; 4) ULPA 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.

*For temperature not exceeding 37 °C .

**For CO₂ level not exceeding 5.2%.

***Esco does not guarantee condensation-free chamber at humidity level higher than 90%.

OPTIONS AND ACCESSORIES



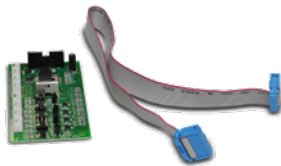
COA-1001 / COA-1001-F Humidity Display

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 CO₂ Backup

This option allows two tanks of CO₂ 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, CO₂ / O₂ 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® CO₂ 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.



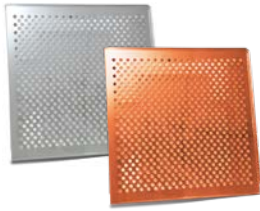
COA-2005-F 2-Stage Gas Regulator for CO₂

CO₂ and N₂ 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® CO₂ 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 CO₂ Analyzer, For CO₂ / Temp Measurement

COA-2016-F Electronic CO₂ + O₂ Analyzer, For CO₂ / O₂ / Temp Measurement

COA-2017-F Electronic CO₂ + O₂ + RH Analyzer, For CO₂ / O₂ / RH / Temp Measurement

The electronic analyzer allows the measurement of CO₂ concentration, O₂ 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, CO₂ incubators, and ultra-low temperature freezers.

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 with Latches), 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®	5250001	Voyager® Software Kit

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. An interactive online LiveSupport™ concierge center accessible through the Esco website offers extended hours of operation. LiveSupport™ permits users to dialogue directly with Esco personnel.

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.

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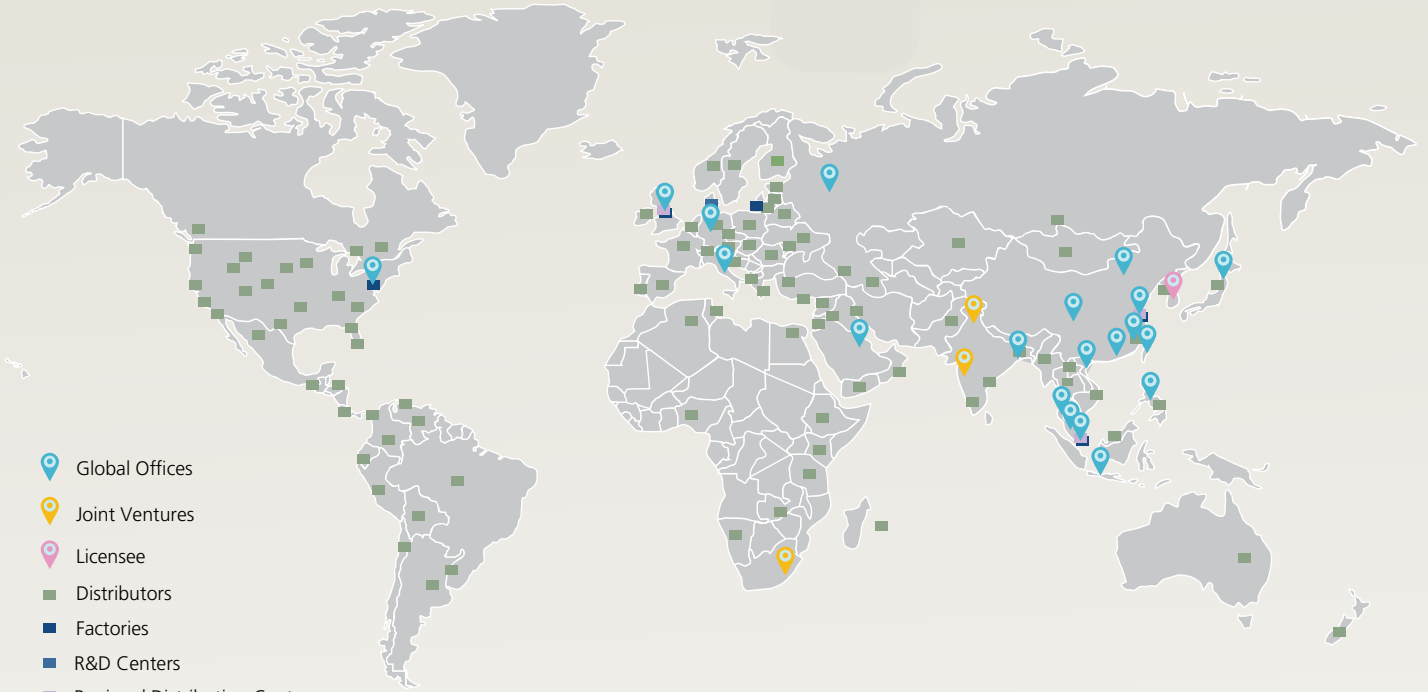
References and Links

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

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