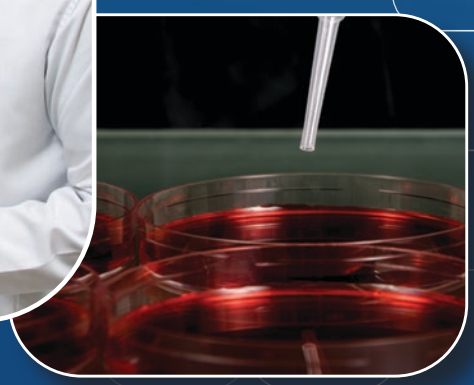
ESCO SCIENTIFIC

CelMate® CO_2 Incubators

CelMate®

CO_2 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.

The Esco Lifesciences Group 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. 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

Laboratory Equipment

Sample Handling and Preparation
- Class I Biological Safety Cabinets
- Class II 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 Cabinets
- Vertical Laminar Flow Cabinets
- 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 High Heat Sterilization
- Laboratory Shakers

Amplification and Detection
- Conventional Thermal Cyclers
- 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
- Ducted Fume Hoods
- Ductless Fume Hoods
- Filtered Storage Cabinets
- Powder Weighing Balance Enclosure
- Exhaust Blowers
- Fume Hood Airflow Monitor

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

Medical / IVF Equipment

Controlled Embryo Handling
- Esco Multi-Zone ART Workstation
- Esco Multi-Zone ART Workstation Class II
- AVT Anti-Vibration Table
- Semi-Closed Environment (SCE) IVF

Safe Embryo Culture
- MIRI® Multiroom Incubator
- MIRI® II Multiroom Incubator
- Mini MIRI® Humidified Incubator
- Mini MIRI® Dry Incubator
- CelCulture® CO_2 Incubator

Innovative Time-Lapse Imaging
- MIRI® Time-Lapse Incubator

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

Unique Consumables
- CultureCoin®

Healthcare

Esco Pharma Products

Airflow Containment
- BioBooth™
- Ceiling Laminar Airflow (CLAF)
- Cytoculture® Cytotoxic Safety Cabinet
- Pharmacon™ Downflow Booth
- Esco Garment Storage Cabinet
- Esco Glassware Hoods
- Laminar Flow Horizontal/Vertical Trolley (LFH/VT)
- Laminar Flow Straddle Units
- Evidence Drying Cabinet

Isolation Containment
- Advanced Processing Platform Isolator (APPI)
- Aseptic Containment Isoaltor (ACTI)
- Blood Cell Labelling Isolator
- Streamline® Closed Restricted Access Barrier System (SLC-RABS)
- Containment Barrier Isolator (CBI)
  - CBI-Unidirectional (CBI-U)
  - CBI-Turbulent (CBI-T)
  - CBI-Class III Biosafety Cabinet (CBI-III)
  - CBI-Convertible Class III/Class I Biosafety Cabinet (CBI-H)
- Isoclean® Healthcare Platform Isolator (HPI)
  - HPI-G3-Without Filter Below Work Zone
  - HPI-G3-With Filter Below Work Zone
  - HPI-Inflatable Seal (HPI-IS)
- General Processing Platform Isolator
  - GPPI-Inflatable Seal (GPPI-IS)
  - GPPI-Static Seal (GPPI-SS)
- Streamline® Compounding Isolator
  - SCI - Isolator Configuration
  - SCI - Class III Biosafety Cabinet (SCI-III)
- Technetium Dispensing Isolator
- Turbulent Flow Aseptic Isolator (TFAI)
- Weighing and Dispensing Containment Isolator (WDCI)

Cross Contamination Facility Integrated Barrier
- BioPass™ Pass Through
- Cleanroom Air Showers
- Dynamic Pass Boxes/ Dynamic Floor Laminar Hatches
- Infinity® Air Shower Pass Box
- Esco Sputum Booth
- Infinity® Pass Boxes
- Infinity® Cleanroom Transfer Hatch
- Soft Capsule® Soft Wall Cleanroom

Ventilation Containment
- Ventilated Balance Enclosure

Esco VacciXcell Products

Bioreactors and Fermenters
- CelXrocker™
- CelCradle™
- CelShaker™
- CelCradle™ X
- CelCradle Semi-Automated Harvesting System™ (CCX-SAH)
- BioXcell™
- StirCradle™
- StirCradle™ PRO
- TideXcell™
- TideXcell™ Harvesting System (TXLHS)
- VXL™ 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

Esco TaPestle Rx Products

Pharmacy Compounding Solutions
- Compounding Pharmacy Isolators (SCI, HPI, CBI, GPPI)
- Safety Cabinets and Enclosures (CYT, Class II BSC, VBE, LFC)
- Aseptic Filling Systems

Radiopharmacy Equipment Solutions
- Radioisotope Fume Hood
- Lead-lined Biosafety Cabinet
- Technetium Dispensing Isolator
- Blood Cell Labeling Isolator
- GMP-compliant Radioisotope Dispensing Isolator

CelMate®
CO_2 Incubators

INTRODUCTION

Esco now offers the new CelMate®, 50 L, 170 L, and 240 L, 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.

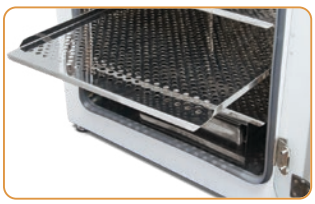
Sleek, reliable, and intuitive, Esco CelMate® CO_2 incubators provide all-rounded sample protection that brings your scientific dreams one step closer to reality.

KEY FEATURES

CelMate® CO_2 INCUBATORS

Cradle for Beautiful Cells

CelMate® CO_2 Incubators available in 50 L, 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

CO_2 SENSOR

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

DOOR SWITCH

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

TOP COVER

Provides quick access to electrical panel components

SMARTSENSE ™ MICROCONTROLLER INTERFACE

Intuitive, fully equipped control and monitoring system

BLOWER*

Gentle airflow in chamber improves recovery and uniformity

**Not available in 50 L Model (including top, back, and bottom plenum)*

OUTER DOOR

- Reversible
- Heated to prevent condensation

SAMPLE PORT

Allows direct measurement of chamber atmosphere such as CO_2 and O_2 concentration

INNER GLASS DOOR

For observing sample cells inside the chamber during operation

DOOR LATCH

To lock / unlock the glass door

LEVELING FEET

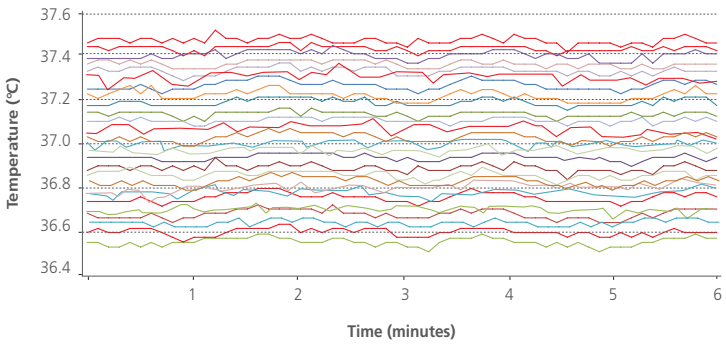
Easily adjustable

QUALITY ESCO CONSTRUCTION

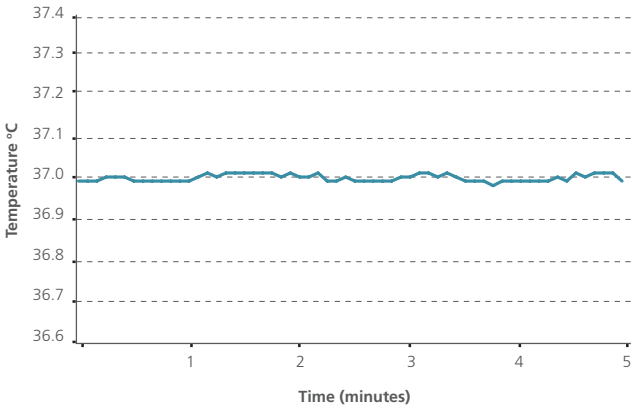
- Electrogalvanized steel with white oven-baked epoxy-polyester antimicrobial powder-coated finish.
- External surfaces are powder coated with Esco ISOCIDE™ to eliminate 99.9% of surface bacteria within 24 hours of exposure.
- Ensures a healthier, safer and cleaner lab environment.

VIVOCELL™ PRECISE PARAMETER CONTROL

BEST UNIFORMITY AND CONTROL AMONG THE COMPETITION

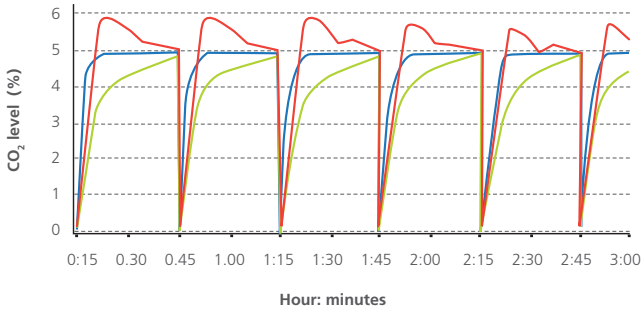


Different lines represent different sensor positions inside the chamber. Esco CelMate® has uniformity variance of less than ± 0.5 °C which means all the samples are evenly heated.*



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

FAST CO_2, TEMPERATURE AND HUMIDITY RECOVERY WITHOUT OVERSHOOT

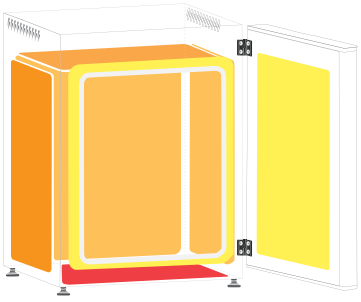


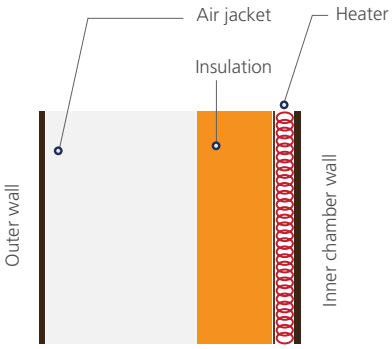
Precisely-tuned sensor and software result in fast recovery of CO_2 without overshoot. This ensures uniform CO_2 levels even with frequent incubator door opening.

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



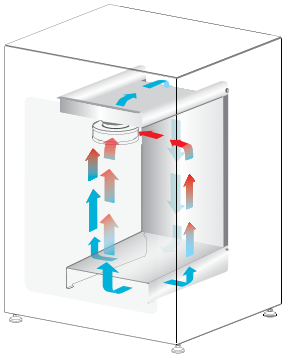


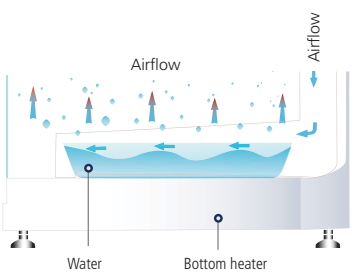
- Direct heating enables rapid temperature recovery while air jacket provides isolation against ambient temperature fluctuations.
- Precise heating in the chamber is achieved by using 8 heaters located in 3 zones. The 3 zones are intelligently controlled by the microcontroller for best temperature uniformity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

Note: For CLM-050B-_ models, heaters are located in 4 zones (main, bottom, outer door, and back).

- 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



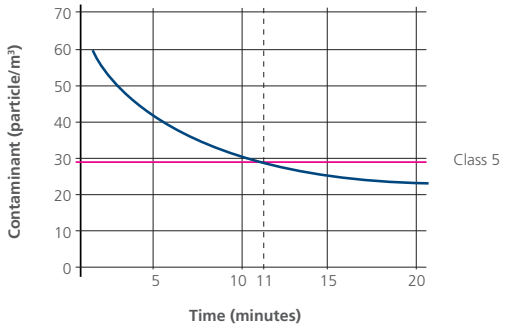


- No disturbance to cell culture.
- Blower automatically stops when door is opened to minimize mixing of chamber and room air.
- Accelerates recovery of chamber air to ISO Class 5 Cleanliness after door closing to prevent contamination.
- Improves CO_2, humidity and temperature uniformity.
- Filtered air circulates across water pan to accelerate humidifying process.

**Units were factory-tested under controlled environmental conditions per DIN 12880 standard and 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

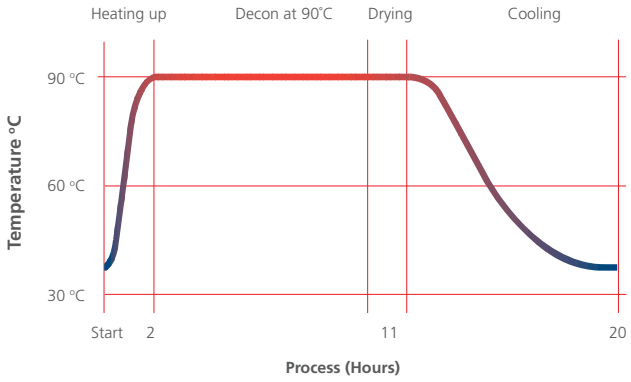
STERISAFE™ ULPA FILTRATION SYSTEM



- 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 DIN 12880 standard and 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.*

VALIDATED SWIFTCON™ OVERNIGHT DECONTAMINATION CYCLE



Microorganisms	Before Decon	After Decon
Bacillus atrophaeus	1.59 x 10^6	0
Aspergillus brasiliensis	1.52 x 10^4	0
Pseudomonas aeruginosa	2.38 x 10^6	0
Staphylococcus epidermis	2.33 x 10^6	0
Escherichia coli	1.57 x 10^6	0
Staphylococcus aureus	5.72 x 10^6	0
Enterobacter faecalis	2.15 x 10^6	0

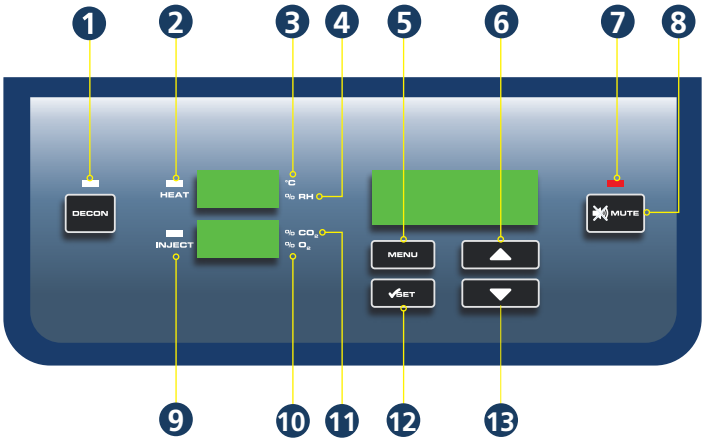
- The automated SwiftCon™ 90˚C moist heat decontamination cycle has been proven effective in deactivating normally resistant fungi, bacterial spores and vegetative cells by the Health Protection Agency (HPA) in UK.
- Full decontamination cycle completes within 20 hours.
- Independently proven to be as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

- **New Safety Alarm System**
  - Temperature Fail-Safe System prevents overshooting of temperature display to +0.4°C of the set point.
  - The Auto-Reset Watchdog will automatically reset the system in the unlikely event of system failure,preventing the controller from freezing.
  - %CO_2 Failure Mode prevents build-up of %CO_2 over set point in cases of CO_2 sensor defect.

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

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

REAR PANEL

1 Cooling Fan

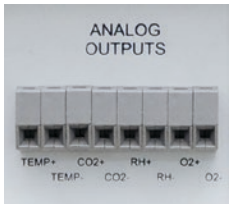
Prevents the electrical panel from overheating.

2 Power Supply Inlet

Connects the incubator unit to the power source.

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



4 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.

5 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.

6 CO_2 Gas Supply Inlet

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

7 Gas Inlet Filter

Provided to remove any contaminants from the gas supply.

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.

ORDERING INFORMATION

IR SENSOR MODEL WITH STAINLESS STEEL CHAMBER

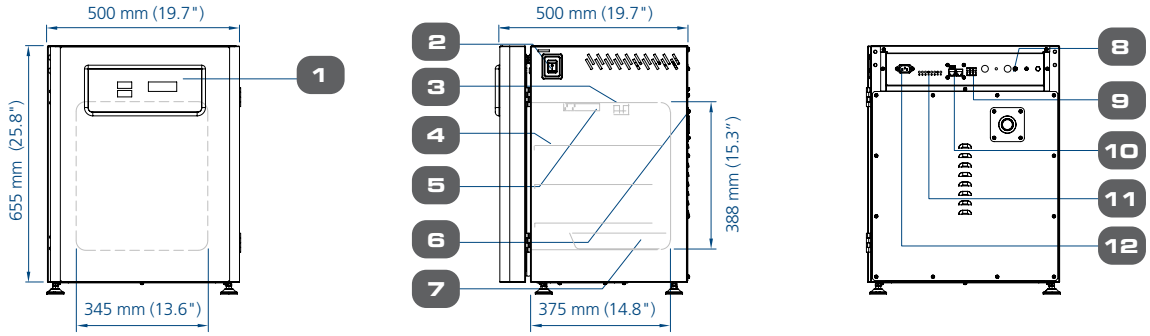
MODELS	ITEM CODE	DESCRIPTION
CLM-050B-8	2170269	CelMate® Incubator 50 L, IR Sensor, CO_2 Control, Moist Heat Decon, 230 VAC, 50/60 Hz (Without Decon Pump)
CLM-050B-9	2170345	CelMate® Incubator 50 L, IR Sensor, CO_2 Control, Moist Heat Decon, 115 VAC, 50/60 Hz (Without Decon Pump)
CLM-170B-8	2170106	CelMate® Incubator 170 L, IR Sensor, CO_2 Control, ULPA, Moist Heat Decon, 230 VAC, 50/60 Hz (Without Decon Pump)
CLM-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-8	2170107	CelMate® Incubator 240 L, IR Sensor, CO_2 Control, ULPA, Moist Heat Decon, 230 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)

IR SENSOR MODEL WITH STAINLESS STEEL CHAMBER AND UV LAMP

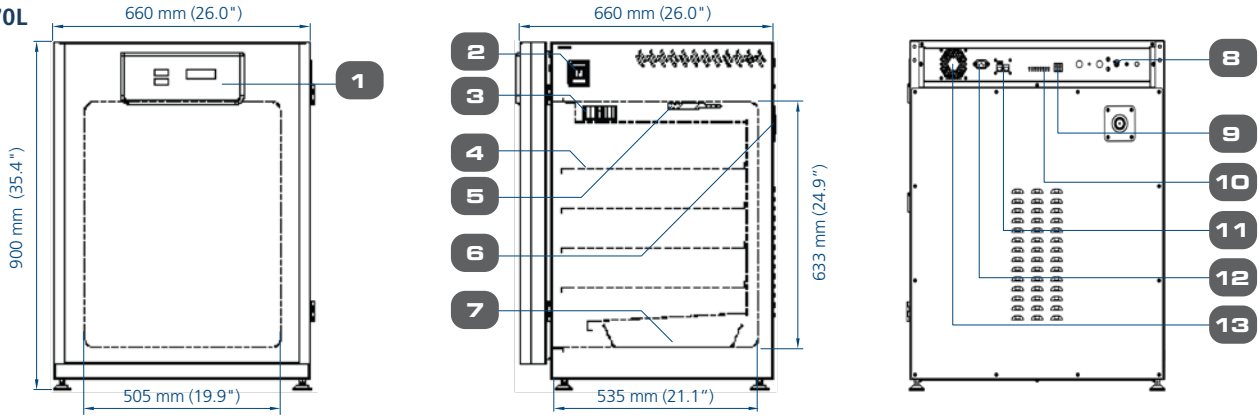
MODELS	ITEM CODE	DESCRIPTION
CLM-170B-8-UV	2170252	CelMate® Incubator, 170L, IR sensor, CO_2 control, Moist Heat Decon, UV, 230VAC, 50/60 Hz (Without Decon Pump)
CLM-240B-8-UV	2170254	CelMate® Incubator, 240L, IR sensor, CO_2 control, Moist Heat Decon, UV, 230VAC, 50/60 Hz (Without Decon Pump)
CLM-170B-9-UV	2170253	CelMate® Incubator, 170L, IR sensor, CO_2 control, Moist Heat Decon, UV, 115VAC, 50/60 Hz (Without Decon Pump)
CLM-240B-9-UV	2170255	CelMate® Incubator, 240L, IR sensor, CO_2 control, Moist Heat Decon, UV, 115VAC, 50/60 Hz (Without Decon Pump)

ENGINEERING DRAWING

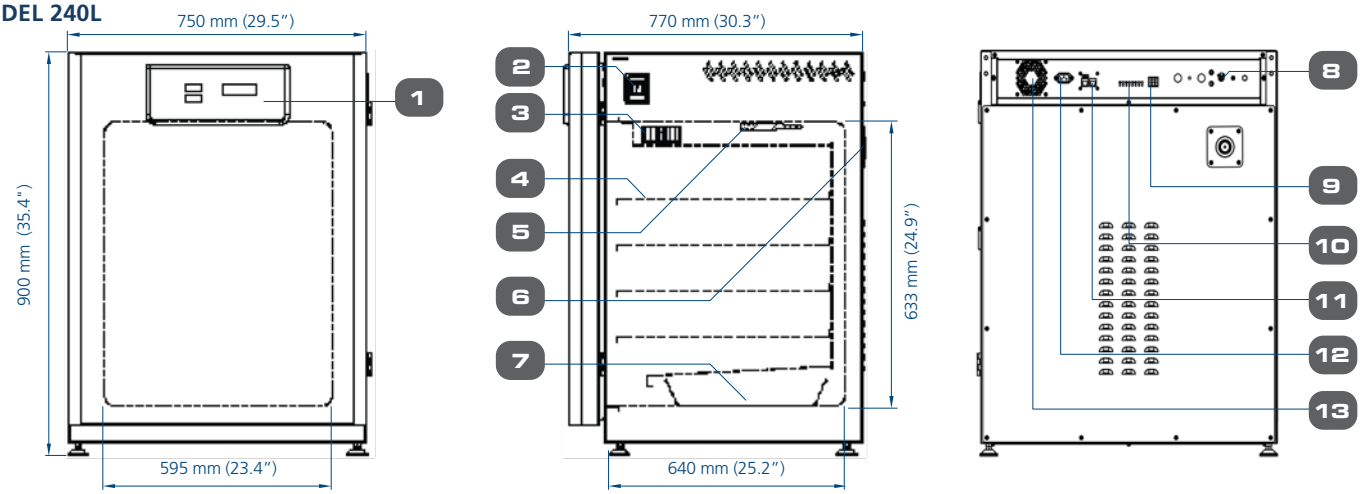
MODEL 50L



MODEL 170L



MODEL 240L



1. Control Panel
2. On / Off Switch
3. Small Fan (50L) / Blower (170L & 240L)
4. Adjustable Shelves
5. IR Sensor
6. Access Port
7. Humidity Pan
8. CO_2 Gas Supply
9. Alarm Contact
10. Analog Output
11. RS485
12. Power Supply Inlet
13. Cooling Fan

GENERAL SPECIFICATIONS

CELMATE® CO_2 INCUBATORS

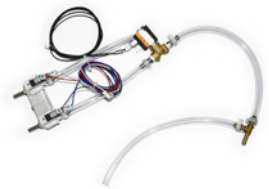
		CLM-050B-_	CLM-170B-_	CLM-240B-_
TEMPERATURE				
Temperature Control Method		Direct Heat and Air Jacket using Microcontroller PI		
Ambient Temperature Range		18 to 34°C (64 to 93 °F)		
Temperature Range, °C		Ambient +7 to 60		
Temperature Uniformity, °C*		< ±0.5		
Temperature Accuracy, °C*		<± 0.1		
Temperature Recovery Time** (after 30 seconds door opening, 98% from initial value)		≤5 minutes	≤5 minutes	≤6 minutes
CO_2				
CO_2 Control System		Microcontroller PI		
CO_2 Range, % CO_2		0-19.5		
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)		≤6 minutes	≤5 minutes	≤6 minutes
HUMIDITY				
Humidification Method		Humidity pan		
Humidity Range, %RH (at 37°C)*****		85-90		
PHYSICAL CONSTRUCTION				
Interior Volume		50 L (1.8 ft^3)	170 L (6 ft^3)	240 L (8.5 ft^3)
External Dimensions (W x D x H)		500 x 500 x 655 mm (19.7" x 19.7" x 25.8")	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)		345 x 375 x 388 mm (13.6" x 14.8" x 15.3")	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	3	4	4
	Maximum Number of Shelves	4	7	7
	Shelves Area (W x D)	300 x 335 mm (11.8" x 13.2")	465 x 470 mm (18.3" x 18.5")	550 x 560 mm (21.7" x 22.0")
	Maximum Load per Shelf	4 kg/shelf (8.8 lbs/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	40.9 W	42.2 W	42.2 W
	Maximum Power Consumption	675.5 W	1184.3 W	1727.9 W
	Full Load Amps	5.3 A	9.2 A	13.4 A
Electrical Configuration 220-240 VAC, 50/60 Hz	Nominal Power at 37°C	40.9 W	42.2 W	42.2 W
	Maximum Power Consumption	598.8 W	1008.9 W	1270 W
	Full Load Amps	2.5 A	4.2 A	6.5 A
Net Weight		52 kg (114.6 lbs)	101 kg (222.67 lbs.)	121 kg (266.76 lbs.)
Shipping Weight		70 kg (154.3 lbs)	120 kg (264.6 lbs)	155 kg (341.7 lbs)
Shipping Dimensions (W x D x H)		660 x 650 x 900 mm (26.0" x 25.6" x 35.4")	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		0.39 m^3 (13.7 ft^3)	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 electro-galvanized steel with Isocide™ antimicrobial coating; 2) 90°C 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 6) UV Lamp (for CLM-UV models only)		

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 37.2 °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%.*
*******Not available for 50 L models.*

OPTIONS AND ACCESSORIES

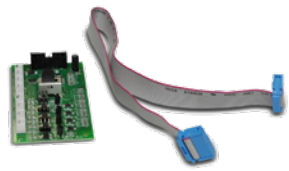
COA-1001 / COA-1001-F Humidity Display

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

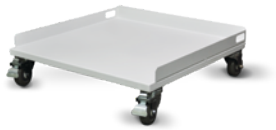
This option allows two tanks of CO_2 to be connected to the incubator. It will automatically switch from the primary tank to the secondary tank when low gas pressure is detected on the primary tank.



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-2018-F (50L) / 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-2020-F (50L) / 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-2022-F (50L) / 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-2024-F (50L)/ 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 3 shelves for 50 L / 4 shelves for 170 L & 240L and it can accommodate up to a maximum of 4 shelves for 50 L / 7 shelves for 170 L & 240 L.

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

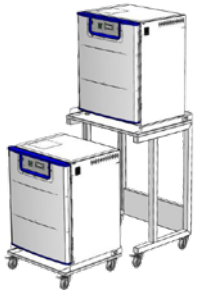
The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument for on-the-spot written documentation of incubator chamber temperature. This model offers 8" chart of temperature data and comes with 2 remote probes for dual temperature monitoring.

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.

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.

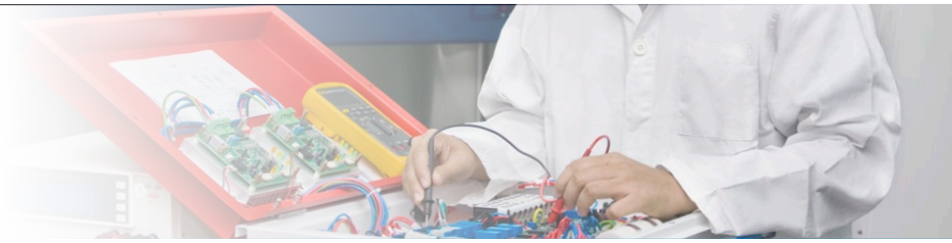


COA-2004 (170L) / COA-2042 (240L) 2-UNITS FLOOR STAND

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-2018-F	5170419	Roller Base (50 L)
COA-2001-F	5170478	Roller Base (170 L)
COA-2019-F	5170420	Roller Base (240 L)
COA-2020-F	5170421	Floor Stand 200 mm (8.0") with Adjustable Feet (50 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-2022-F	5170423	Floor Stand 700 mm (27.6") with Casters (50 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-2024-F	5170425	Extra Shelf (50 L, Stainless Steel)
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
Voyager	5170489	Voyager Software Kit
COA-2004	5250001	2-units Floor Stand Stacking Kit (For 170L)
COA-2042	5170999	2-units Floor Stand Stacking Kit (For 240L)



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.

The NSF mark is your assurance that the product complies with all the standard requirements, tested by one of the most respected independent certification organizations in existence today. NSF conducts periodic unannounced inspections and product testing to verify that the product continues to comply with the standard. It is valued by consumers, manufacturers, retailers and regulatory agencies worldwide.

References and Links
For more information, you can visit Esco at www.escolifesciences.com

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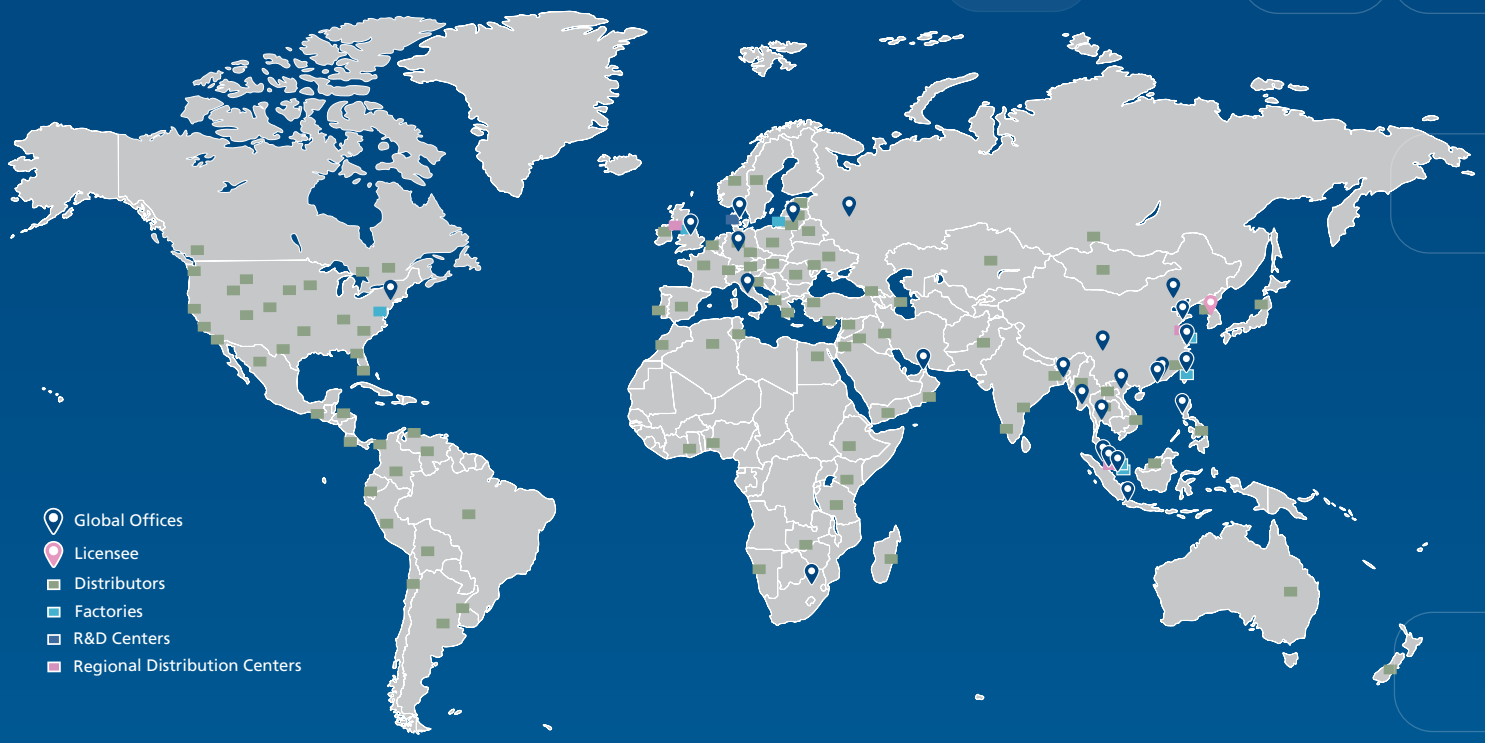
42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



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