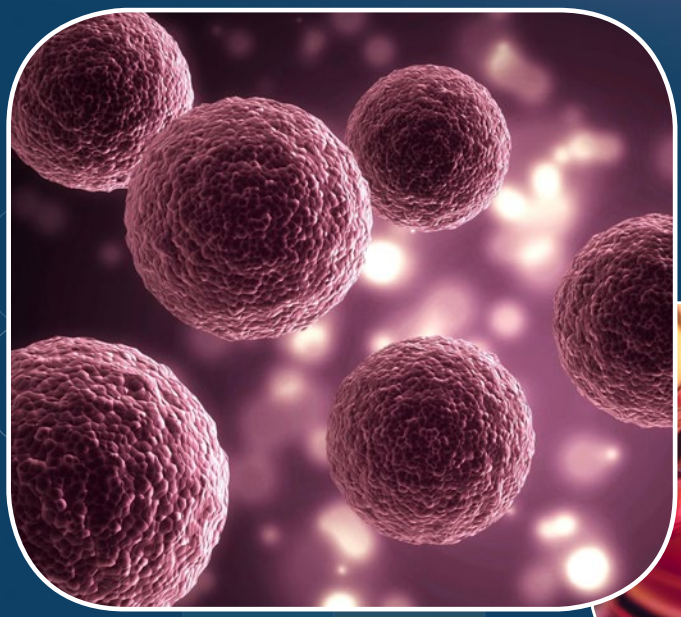
ESCO
WORLD CLASS. WORLDWIDE.

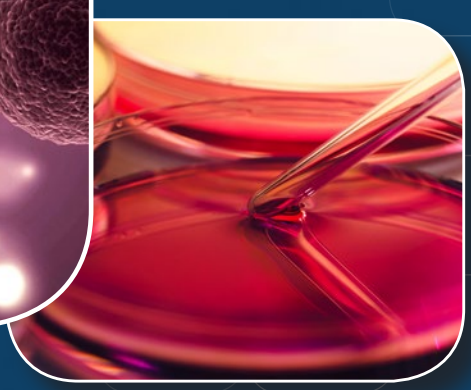
Model: CCL-170/240_-_-HHS

CelCulture®

CO_2 Incubators with High Heat Sterilization

Cultivating a Culture of Safety and Efficiency





Welcome to Esco

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

Esco Micro Pte Ltd
Certificate No: 651076

PT. Esco Bintan Indonesia
Certificate No: 651333/E

PT Esco Bintan Indonesia
ISO 13485: 2016

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 9001, 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

Laboratory Equipment

Sample 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 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
- Ducted Fume Hood
- Ductless Fume Hood
- Filtered Storage Cabinet
- Powder Weighing Balance Enclosure
- Exhaust Blowers
- Fume Hood Airflow Monitor

General Equipment

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

Forensic Sciences
- Evidence Drying Cabinet

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
- 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

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)
  - HPI-G3-K
- 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
- Weighing and Dispensing Containment Isolator

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™
- CelCradle™ X
- StirCradle™
- StirCradle™PRO
- TideXcell™
- TideXcell™ Cell Harvesting System (TXCHS)
- 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

TaPestle Rx Products and Services

PRODUCTS

Pharmacy Automation and Compounding Supply
- Compounding Pharmacy Isolators (SCI, HPI, CBI, GPPI)
- Safety Cabinets and Enclosures (CYT, 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

CelCulture®

CO_2 Incubators with High Heat Sterilization

INTRODUCTION

Introducing Esco's CelCulture® CO_2 Incubator with 180 °C High Heat Sterilization Cycle, offering efficient contamination protection and hassle-free maintenance without compromising accuracy and reliability in maintaining optimal conditions for cell growth.

The CelCulture® CO_2 Incubator has more design configurations suitable to meet the demands of every cell culture laboratory, taking your scientific dreams a step closer to reality.

NEW FEATURES

180°C HIGH HEAT STERILIZATION

Quick and hassle-free elimination of contaminants in the chamber and its interior components.

HEAT-RESISTANT SENSORS

Maintenance-free sensors are to be included during sterilization.

TEMPERATURE FAIL-SAFE SYSTEM

Over-temperature protection device prevents overshooting of temperature to + 0.4°C of the set point.

WATCHDOG SYSTEM-FAILURE MODE

The auto-reset watchdog will automatically reset the system in the unlikely event of system failure, preventing the controller from freezing.

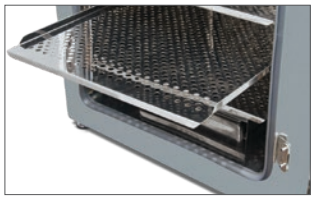
$\%CO_2$ FAILURE MODE PROTECTION

Prevents build-up of $\%CO_2$ over set point in cases of CO_2 sensor defect. The system will automatically stop the valve from injecting CO_2 after a certain period.

Available in 170 L (6.0 ft³) and 240 L (8.5 ft³) compact footprints

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



SHELVING

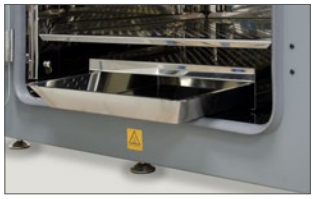
- Perforated shelving to improve uniformity
- Anti-tip
- Stainless steel
- Built-in grip
- Dismantles without tools for easy cleaning

DIRECT HEAT & AIR JACKET

- Fast and uniform heating
- Rapid temperature recovery
- Air jacket improves chamber stability

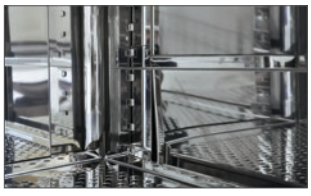
DUCT WORK

- 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

APPLICATIONS: TISSUE ENGINEERING | STEM CELL RESEARCH | IN VITRO FERTILIZATION | CANCER RESEARCH | PRIMARY CELL

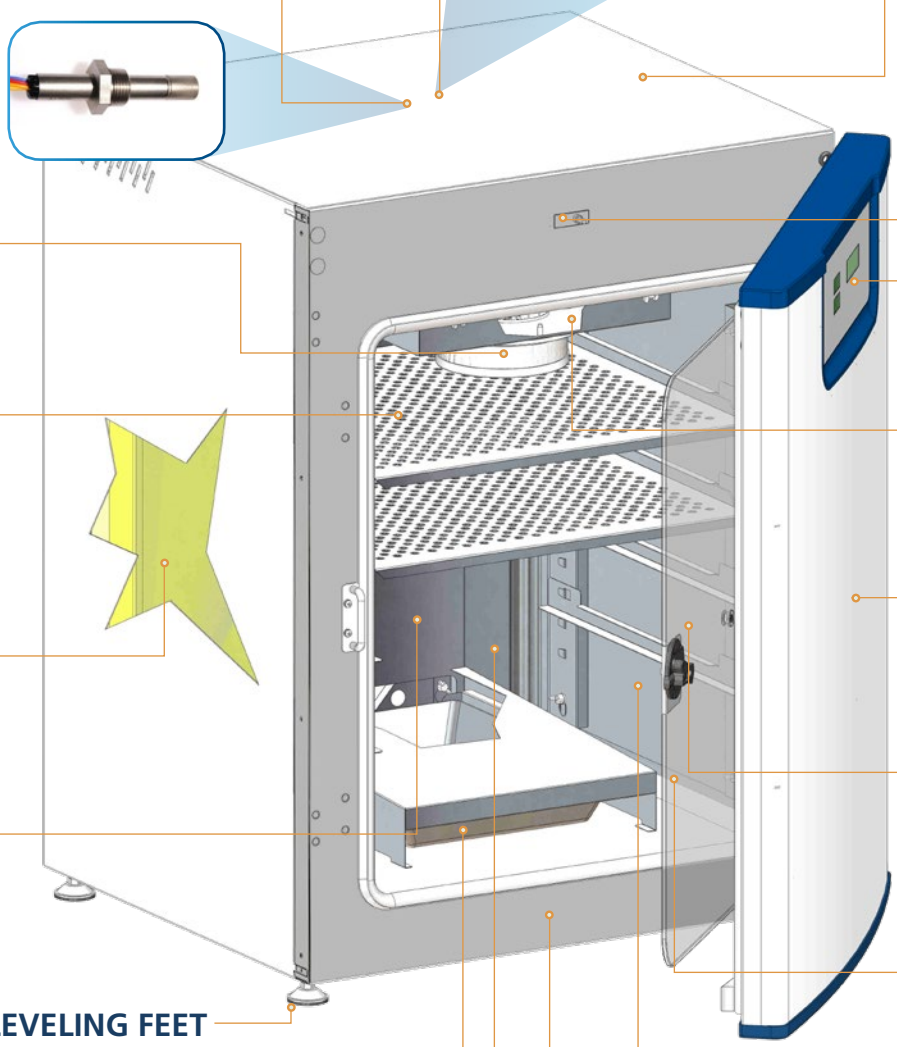
O_2 SENSOR

for suppressed O_2 model

- Highly-accurate sensor with resistance to high temperature
- Utilizes long life, non-depleting sensor technology
- Has integral heating element to prevent condensation

CO_2 SENSOR

- High-temperature-resistant infrared sensor
- Equipped with advanced sensor technology for long-term stability
- Not affected by temperature and humidity



TOP COVER

Provides quick access to electrical panel components

DOOR SWITCH

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

SMARTSENSE™ MICROCONTROLLER INTERFACE

Intuitive controller with comprehensive userconfigurable audible and visual alarms, CelAlert™ reminder system for gas and ULPA filter replacement, and 2 MB built-in flash memory for data and event logging.

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

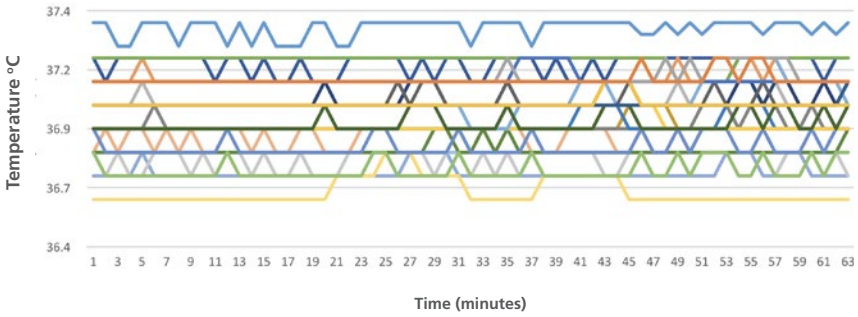
QUALITY ESCO CONSTRUCTION

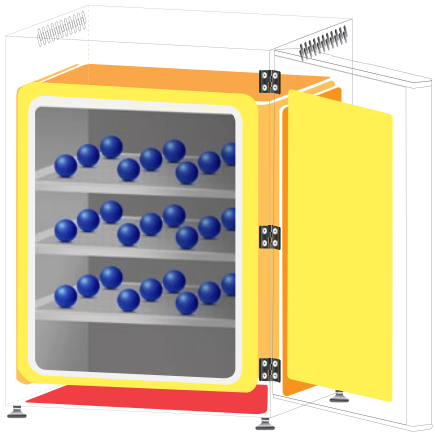
- Electrogalvanized steel with white oven-baked epoxy-polyester antimicrobial powder-coated finish.
- External surfaces are powder coated with Esco ISOCIDE™ to eliminate 99.9% of surface bacteria within 24 hours of exposure.
- Ensures a healthier, safer and cleaner lab environment.

VIVOCELL™ PRECISE PARAMETER CONTROL

IMPROVED CULTURING ATMOSPHERE FOR BETTER CELL GROWTH

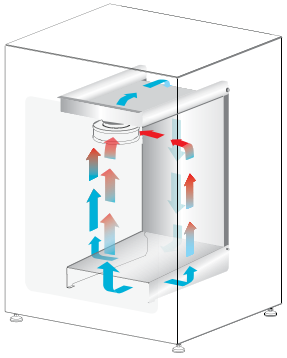
Direct heat and air jacketed design allows even distribution of heat with less than ±0.35°C* temperature variation at 27 points in the chamber, following **DIN 12880: 2005** testing standards.





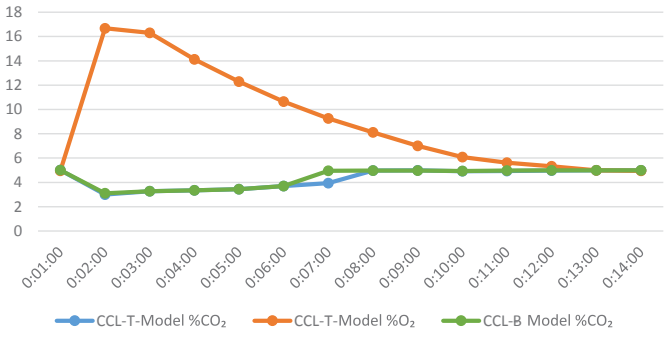
VENTIFLOW™ FORCED CONVECTION

(Applicable when ULPA filter ordered)



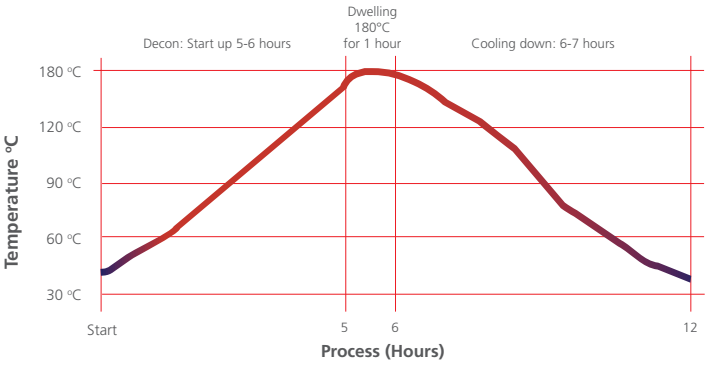
Gentle airflow accelerates homogenization and filtration of chamber atmosphere, preventing dehydration of samples while minimizing sample stress. Blower fan automatically stops when main door is opened to minimize contamination risk.

FAST PARAMETER RECOVERY

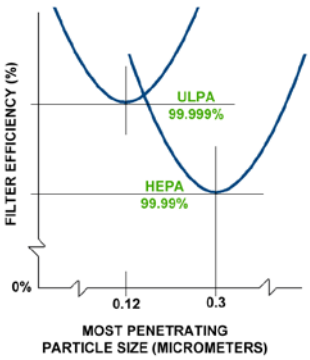


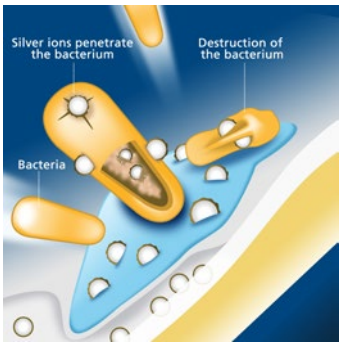
Precise and stable sensor system combined with the SmartSense™ microcontroller allows quick parameter recovery without overshooting.

COMPLETE CONTAMINATION CONTROL



Complete Cycle lasts up to 12 hours.





180°C HIGH HEAT STERILIZATION

Conforms to the International Standards for dry heat sterilization and proven to be effective in killing normally-resistant fungi, bacterial spore and vegetative cells. Nontoxic and noncorrosive sterilization that completes within 12 hours leaving the chamber cool and dry at the end of the cycle.

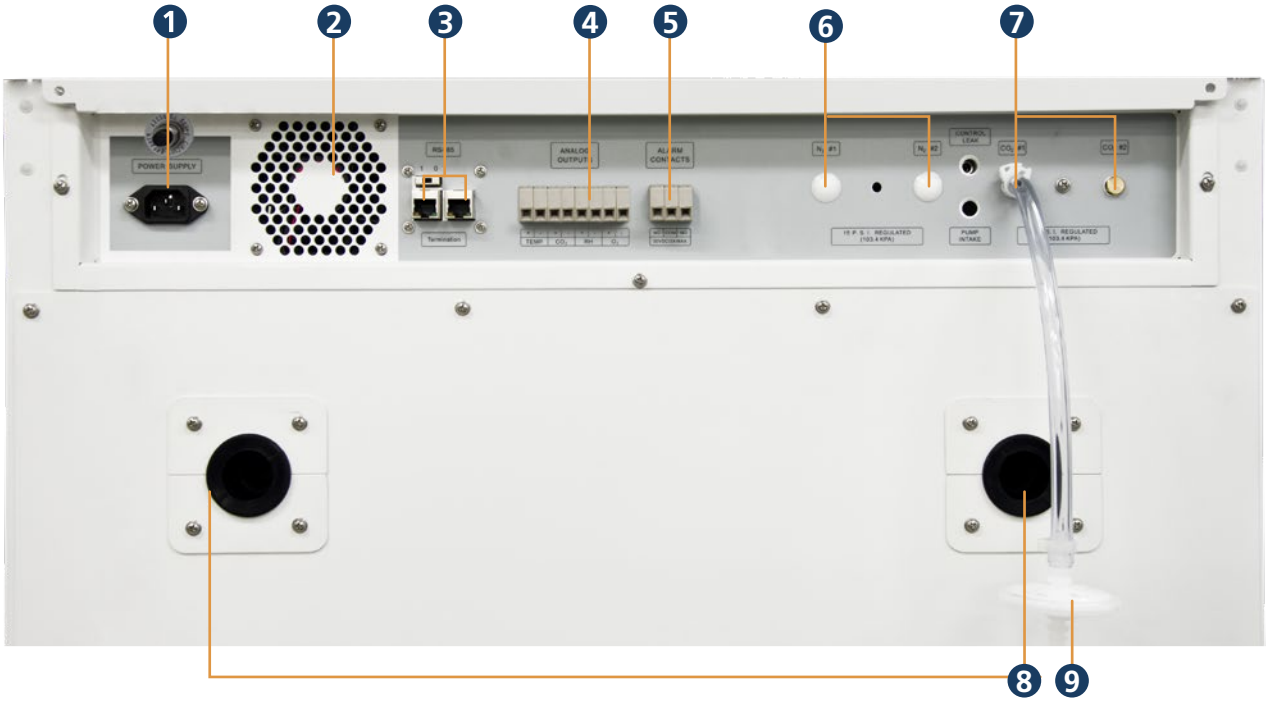
ULPA FILTRATION SYSTEM

Has 10x more filtering efficiency than HEPA filter for a cleaner and safer chamber atmosphere.

ISOCIDE™ ANTIMICROBIAL SURFACE COATING

Enhances sample protection by inhibiting microbial growth on the external surfaces.

REAR PANEL



1 Power Supply Inlet

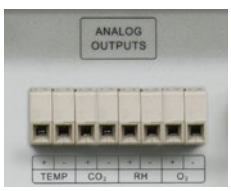
Connects the incubator unit to the power source.

2 Cooling Fan

Prevents the electrical panel from overheating.

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

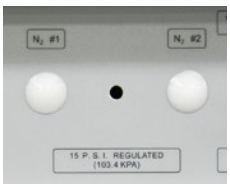


4 Analog Port (Optional)

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 of the unit is provided to monitor temperature, humidity or CO_2 alarms. The alarm contacts can be connected to a remote alarm system.



6 N_2 Gas Supply Inlet (for Suppressed O_2 model)

Only applicable for models with N_2* control function. Inlet pressure requirement is 15 psi.

** O_2 and N_2 functions are applicable only to models with Suppressed O_2.*

7 CO_2 Gas Supply Inlet

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

8 Access Ports

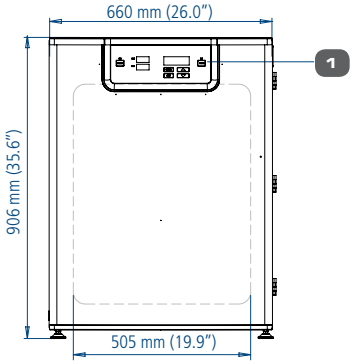
Allows cables, hoses or additional sensors to be routed into the work space. A rubber stopper is installed as standard configuration and is part of standard accessories.

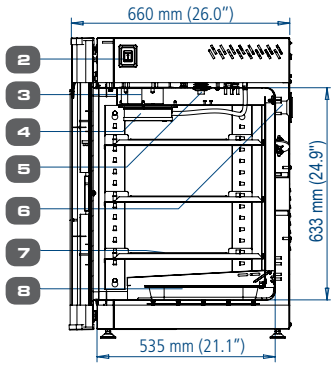
9 0.2µm Gas Inlet Filter

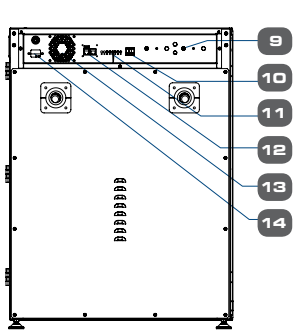
Provided to remove any contaminants from the gas supply.

ENGINEERING DRAWING

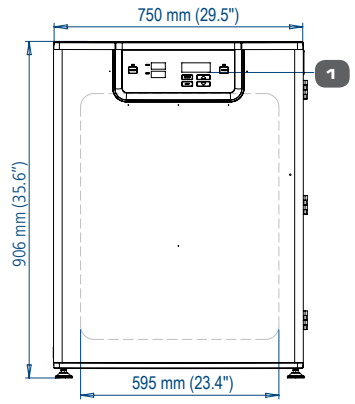
MODEL 170 L

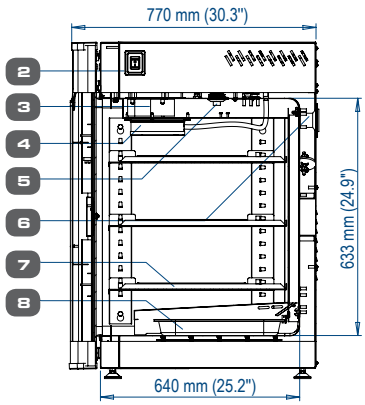


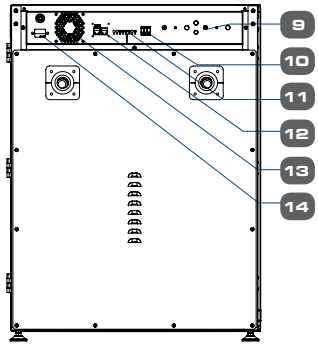




MODEL 240 L







1. Control panel
2. On / off switch
3. Blower fan
4. ULPA filter
5. Sensors
6. Access port
7. Adjustable shelves
8. Humidity pan
9. CO_2 gas supply
10. Alarm contact
11. Analog output
12. RS485
13. Cooling fan
14. Power Supply Inlet

ORDERING INFORMATION

IR SENSOR MODEL WITH STAINLESS STEEL CHAMBER

MODEL	ITEM CODE	DESCRIPTION
CCL-170B-8-HHS	2170295	CelCulture® Incubator 170 L IR Sensor, CO_2 Control, ULPA, 180°C HHS, 230 VAC 50/60 Hz
CCL-170B-9-HHS	2170303	CelCulture® Incubator 170 L IR Sensor, CO_2 Control, ULPA, 180°C HHS, 115 VAC 50/60 Hz
CCL-240B-8-HHS	2170270	CelCulture® Incubator 240 L IR Sensor, CO_2 Control, ULPA, 180°C HHS, 230 VAC 50/60 Hz
CCL-240B-9-HHS	2170304	CelCulture® Incubator 240 L IR Sensor, CO_2 Control, ULPA, 180°C HHS, 115 VAC 50/60 Hz

SUPPRESSED O_2 MODEL WITH STAINLESS STEEL CHAMBER

MODEL	ITEM CODE	DESCRIPTION
CCL-170T-8-HHS	2170297	CelCulture® Incubator 170L IR Sensor, CO_2/O_2 Control, ULPA, 180°C HHS, 230 VAC 50/60 Hz
CCL-170T-9-HHS	2170307	CelCulture® Incubator 170L IR Sensor, CO_2/O_2 Control, ULPA, 180°C HHS, 115 VAC 50/60 Hz
CCL-240T-8-HHS	2170300	CelCulture® Incubator 240L IR Sensor, CO_2/O_2 Control, ULPA, 180°C HHS, 230 VAC 50/60 Hz
CCL-240T-9-HHS	2170308	CelCulture® Incubator 240L IR Sensor, CO_2/O_2 Control, ULPA, 180°C HHS, 115 VAC 50/60 Hz

IR SENSOR MODEL WITH STAINLESS STEEL CHAMBER (NO ULPA FILTER)

MODEL	ITEM CODE	DESCRIPTION
CCL-170B-8-NF-HHS	2170298	CelCulture® Incubator 170 L IR Sensor, CO_2 Control, 180°C HHS, 230 VAC 50/60 Hz, No ULPA Filter
CCL-170B-9-NF-HHS	2170305	CelCulture® Incubator 170 L IR Sensor, CO_2 Control, 180°C HHS, 115 VAC 50/60 Hz, No ULPA Filter
CCL-240B-8-NF-HHS	2170299	CelCulture® Incubator 240 L IR Sensor, CO_2 Control, 180°C HHS, 230 VAC 50/60 Hz, No ULPA Filter
CCL-240B-9-NF-HHS	2170306	CelCulture® Incubator 240 L IR Sensor, CO_2 Control, 180°C HHS, 115 VAC 50/60 Hz, No ULPA Filter

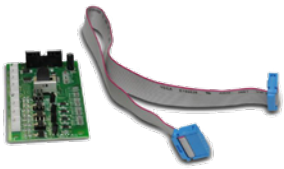
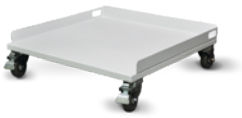
SUPPRESSED O_2 MODEL WITH STAINLESS STEEL CHAMBER (NO ULPA FILTER)

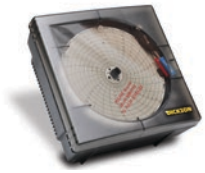
MODEL	ITEM CODE	DESCRIPTION
CCL-170T-8-NF-HHS	2170301	CelCulture® Incubator 170 L IR Sensor, CO_2/O_2 Control, 180°C HHS, 230 VAC 50/60 Hz, No ULPA Filter
CCL-170T-9-NF-HHS	2170309	CelCulture® Incubator 170 L IR Sensor, CO_2/O_2 Control, 180°C HHS, 115 VAC 50/60 Hz, No ULPA Filter
CCL-240T-8-NF-HHS	2170302	CelCulture® Incubator 240 L IR Sensor, CO_2/O_2 Control, 180°C HHS, 230 VAC 50/60 Hz, No ULPA Filter
CCL-240T-9-NF-HHS	2170310	CelCulture® Incubator 240 L IR Sensor, CO_2/O_2 Control, 180°C HHS, 115 VAC 50/60 Hz, No ULPA Filter

GENERAL SPECIFICATIONS		CCL-170_-_-HHS	CCL-240_-_-HHS
TEMPERATURE			
Temperature Control Method		Direct Heat and Air Jacket using Microcontroller PI	
Ambient Temperature Range		18 to 30 °C (64.4 to 86.0 °F)	
Temperature Control Range, °C		Ambient +7 to 60	
Temperature Uniformity, °C *		±0.35	
Temperature Accuracy, °C *		±0.2	
Temperature Fluctuation, °C *		±0.2	
Temperature Recovery Time** (after 30 seconds door opening, 98% from initial value)		≤7 minutes	
CO_2			
CO_2 Control System		Microcontroller PI	
CO_2 Control Range		0.1 – 20.0% (0.0% to disable CO_2 control)	
CO_2 Fluctuation		± 0.2%	± 0.3%
CO_2 Sensor		Infrared (IR) Sensor	
CO_2 Recovery Time*** (after 30 seconds door opening, 98% from initial value)		At 5.0% CO_2 by volume (Standard unit): ≤5 minutes Suppressed O_2 model: ≤8 mins.	At 5.0% CO_2 by volume (Standard unit): ≤5 minutes Suppressed O_2 model: ≤10 mins.
O_2			
O_2 Control System		Microcontroller PI	
O_2 Control Range		1.0 - 20.7% (20.7% to disable O_2 control)	
O_2 Sensor		Zirconia O_2 Sensor	
O_2 Recovery Time**** (after 30 seconds door opening, 98% from initial value)		At 5.0% O_2 by volume: ≤10 mins.	At 5.0% O_2 by volume: ≤12 mins.
HUMIDITY			
Humidification Method		Humidity pan	
Humidity Range (at 37°C)		85 - 90%	
PHYSICAL CONSTRUCTION			
Interior Volume		170 L (6 ft³)	248 L (8.8 ft³)
External Dimensions (W x D x H)		660 x 660 x 906 mm (26.0" x 26.0" x 35.6")	750 x 770 x 906 mm (29.5" x 30.3" x 35.6")
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")
Net Weight		101 kg (222.7 lbs.)	121 kg (266.8 lbs.)
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 220-240 VAC, 50/60 Hz	Nominal Power at 37°C	42.2 W	42.2 W
	Maximum Power Consumption	1300 W	1500 W
	Full Load Amps	5 A	7 A
Electrical Configuration 110-130 VAC, 50/60 Hz	Nominal Power at 37°C	42.2 W	42.2 W
	Maximum Power Consumption	1400 W	1770 W
	Full Load Amps	10 A	14 A
Shipping Weight		140 kg (308.6 lbs)	160 kg (352.7 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 electrogalvanized steel with ISOCIDE™ antimicrobial coating; 2) 180˚C high heat sterilization cycle; 3) ULPA filter (optional) - filter must be removed during decon 4) 0.2 µm gas inlet filter 5) 1-micron air circulation filter	

All data recorded were observed with unloaded chambers and under optimum factory setting of 22 ±3°C with room humidity of 30-60%.
** 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*
**** For CO_2 not exceeding 5.2%*
***** For O_2 level not lower than 4.8%. .*

OPTIONS AND ACCESSORIES

	DESCRIPTION	COA CODE	ITEM CODE
	**HUMIDITY DISPLAY** This option allows the incubator to monitor the relative humidity inside the chamber. 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 and does not need to be removed prior to sterilization.	COA-1001 (factory-installed)	5170470
		COA-1001-F (field-installed)	5170471
	**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-1002 (factory-installed)	5170472
		COA-1002-F (field-installed)	5170473
	**N_2 BACKUP** This option allows two tanks of N_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-1007 (factory-installed)	5170490
		COA-1007-F (field-installed)	5170491
	**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, $\%CO_2$, $\%O_2$ and relative humidity, depending on the options available in the 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-1005 (factory-installed)	5170475
		COA-1005-F (field-installed)	5170476
	**2-STAGE GAS REGULATOR FOR CO_2/N_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 shutoff valve. It prevents over-pressurization of the gas supply into the incubator which could cause the tubing to burst.	COA-2005-F	5170481
	**EXTRA STAINLESS STEEL SHELF** Each CO_2 incubator comes standard with 4 shelves and it can accommodate up to a maximum of 7 shelves.	COA-2007-F (for 170 L models)	5170327
		COA-2025-F (for 240 L models)	5170426
	**ROLLER BASE** Roller base is available with casters for mobility of your incubators and to provide protection against floor contamination.	COA-2001-F (for 170 L models)	5170478
		COA-2019-F (for 240 L models)	5170420
	**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-2002-F (for 170 L models)	5170479
		COA-2021-F (for 240 L models)	5170422
	**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-2003-F (for 170 L models)	5170480
		COA-2023-F (for 240 L models)	5170424

	DESCRIPTION	COA CODE	ITEM CODE
	**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-2008-F	5170483
	**2-UNITS FLOOR STAND STACKING KIT (FOR 170 L ONLY)** This floor stand allows two incubator 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 in case of troubleshooting. Floor stand for upper unit also has casters for easy relocation.	COA-2004-F	5170489
	**ELECTRONIC CO_2 ANALYZER, FOR CO_2 / TEMP MEASUREMENT (WITH TEMPERATURE PROBE)**	COA-2010-F	5170329
	ELECTRONIC CO_2 + O_2 ANALYZER, FOR CO_2 / O_2 / TEMP MEASUREMENT (WITH TEMPERATURE PROBE)	COA-2016-F	5170397
	ELECTRONIC CO_2 + O_2 + RH ANALYZER, FOR CO_2 / O_2 / RH / TEMP MEASUREMENT (WITH TEMPERATURE PROBE)	COA-2017-F	5170398
	**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-2012-F	2170021
	**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-2013-F	2170022
	**6" CHART RECORDER, TEMP/RH, 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 and humidity data.	COA-2014-F	2170023
	**REVERSED DOOR SWING** The incubator has a door opening on the left side by default. This option allows the doors to be factory-installed as opening from the right side.	COA-1004 (factory-installed)	5170474
	**IQ / OQ DOCUMENTATION** The execution of the IQ / OQ verifies that the incubator is installed and is operating pursuant to the validated Standard Operating Procedures (SOPs).	COA-2011-F	2170020
	**VOYAGER® SOFTWARE KIT** Esco Voyager® is a PC-based software package developed for the remote monitoring, data logging 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.	Voyager®	5250001

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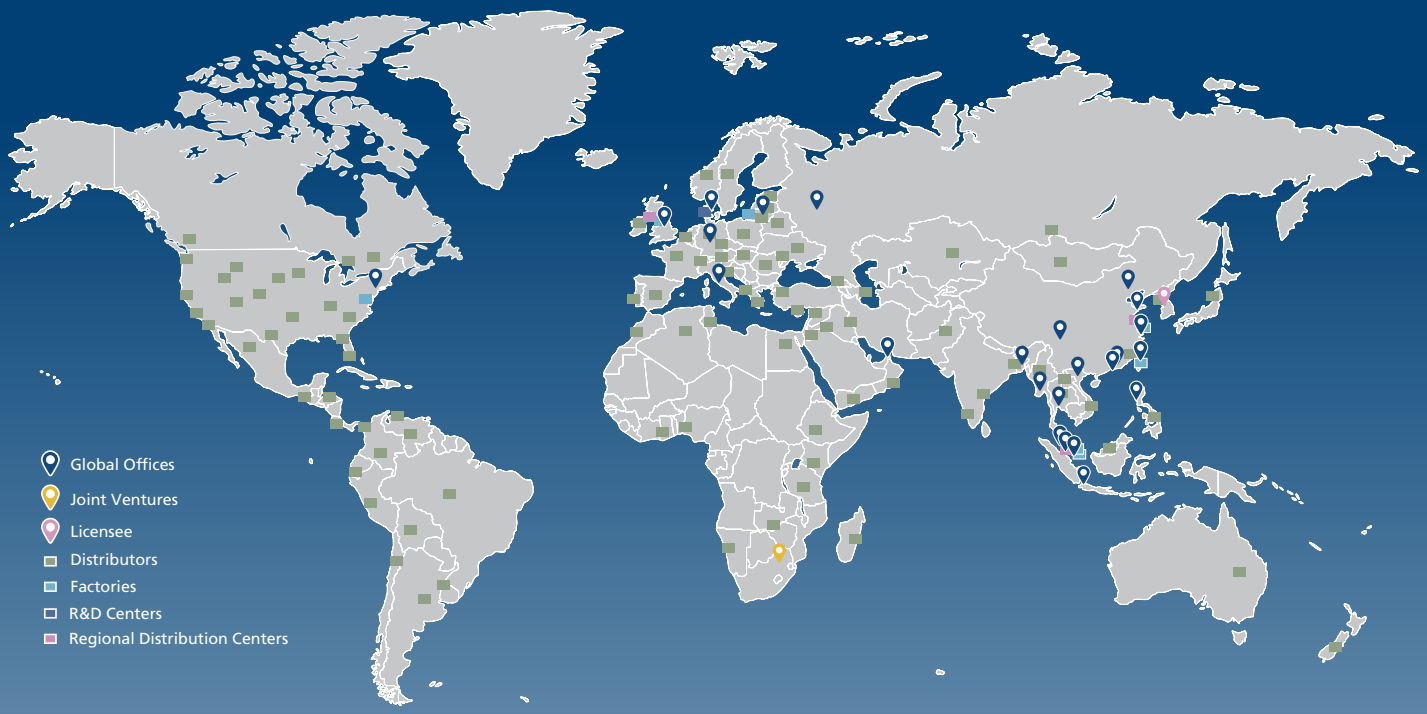
42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



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