

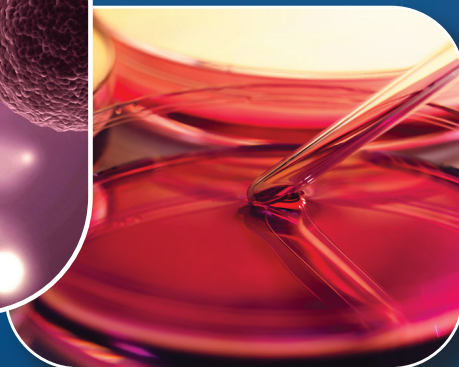
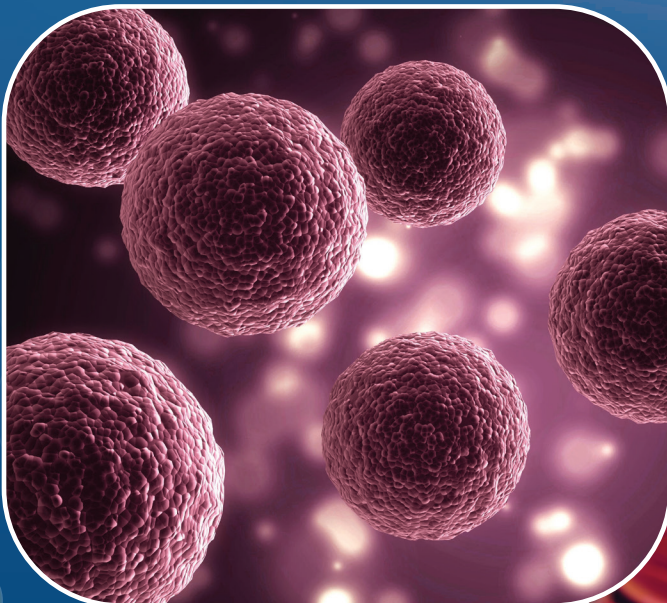


Model: CCL-170/240_-_-HHS

CelCulture®

CO₂ Incubators with High Heat Sterilization

Cultivating a Culture of Safety and Efficiency





Welcome to Esco Lifesciences

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

Esco Lifesciences is committed to delivering innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical, and IVF communities. With the most extensive product line in the industry, Esco has passed a number of international standards and certifications. Esco Lifesciences represents innovation and forward-thinking designs, that are of the highest standard quality since 1978.

Availability and Accessibility. Esco Lifesciences has headquarters in Singapore, Indonesia, and Philippines, with manufacturing facilities 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 Lifesciences products are of high quality, reliable, and dependable. Cross-functional teams from Esco Production, R&D, Quality Assurance, and Senior Management, are regularly assembled to review and implement areas for improvement.

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

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

Esco Lifesciences Cares for the Environment. Esco Lifesciences incorporates the latest proven technologically advanced components available. One in every four of Esco's employees is involved in Research and Development and are evaluating new components or designs for better efficiency. Whenever a new technology is available, Esco Lifesciences redesigns technology into our new products that will use lesser energy.

Customer Service and Support. Our service does not stop once purchase has been done. Esco Lifesciences gives on-time customer service such as service training, preventive maintenance, and re-certification, to respond to your equipment needs. Esco Lifesciences also offers free end-user seminars and provides educational materials and informative videos.

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



Products and Applications

Life Sciences 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

- CO₂ Incubators, Direct Heat Air-Jacketed
- CO₂ Incubators with Cooling System
- CO₂ Incubators with High Heat Sterilization
- Laboratory Shakers

Amplification and Detection

- Conventional Thermal Cyclers
- Microplate Shakers
- PCR Cabinets

Sample Storage & Sample Protection Solutions

- Laboratory Refrigerators and Freezers
- Ultra-low Temperature Freezers
- Remote Monitoring, Datalogging, and 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

Innovative Time-Lapse Imaging

- MIRI® TL6 and MIRI® TL12

Embryo Culture

- MIRI® Multiroom Incubator
- MIRI® Humidity Multiroom Incubator
- Mini MIRI® Dry and Humidity Incubator
- CelCulture® CO₂ Incubator
- MIRI® II-12 Multiroom Incubator

Sample Handling

- Esco Multi-Zone ART Workstation
- MIRI® AVT
- Versati™ Tabletop Centrifuge
- Airstream® Laminar Flow Bench

Accurate Quality Control

- MIRI® GA Gas and Temperature Validation Unit

Unique Consumables

- CultureCoin®

Traceability Tool

- MIRI® Evidence

Healthcare

Esco Pharma Products

Airflow Containment

- BioBooth®
- Ceiling Laminar Airflow (CLAF)
- Cytoculture® Cytotoxic Safety Cabinet (CYT)
- 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 Isolator (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-Hybrid (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 - Inflatable Seal - BioVap™ (HPI-IS-BVP)
- General Processing Platform Isolator (GPPI)
 - GPPI-Inflatable Seal (GPPI-IS)
 - GPPI-Static Seal (GPPI-SS)
- Streamline® Compounding Isolator (SCI)
- Streamline® Containment Isolator - Class III (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

Tide Motion Bioreactors

- CelXrocker™ (CXR)
- MiniTide®
- CelCradle™ (CC)
- CelCradle X® (CCX)
- TideXcell® (TXL)

Stirred Tank Bioreactors

- BioXcell®
- StirCradle™
- StirCradle™ PRO
- VXL™ Hybrid

Harvesting System

- CelShaker™
- CelCradle X® Semi-automated Harvester System (CCX-SAH)
- TideXcell® Harvester System (TXLHS)

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

- Traditional Filling Line
- cRABS (Closed Restricted Access Barrier System)
- oRABS (Open Restricted Access Barrier System)

Integrated Solutions

- Cell Processing Isolator (CPI)
- Cell Processing Center

Esco TaPestle Rx Products and Services

Pharmacy Automation and Compounding Supply

- Compounding Pharmacy Isolators (SCI, HPI, CBI, GPPI)
- Safety Cabinets and Enclosures (CYT, Class II BSC, VBE, LFC)
- Filling Line Isolators/RABS

Radiopharmacy Equipment

- Blood Cell Labeling Isolator
- Cytoculture® Lead-Shielded Class II Biosafety Cabinet
- Frontier® Radioisotope™ Fume Hood
- GMP-compliant Radioisotope Dispensing Isolator
- Radiopharmacy Hood (Lead Shielded Biological Safety Cabinet)
- Technetium Dispensing Isolator



CelCulture®

CO₂ Incubators with High Heat Sterilization

INTRODUCTION

Introducing Esco's CelCulture® CO₂ 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® CO₂ 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.

%CO₂ FAILURE MODE PROTECTION

Prevents build-up of %CO₂ over set point in cases of CO₂ sensor defect. The system will automatically stop the valve from injecting CO₂ after a certain period.

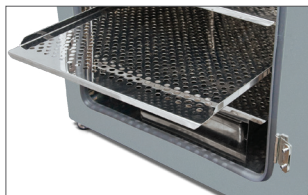
EFFICIENT ENERGY USE

Built to run optimally in ambient +5 temperature — Meaning less air-con and energy consumption, thus saving electricity bills without compromising the cell cultures.

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

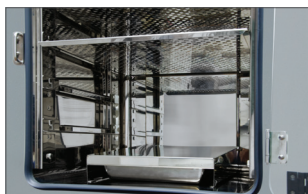


SHELVING

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

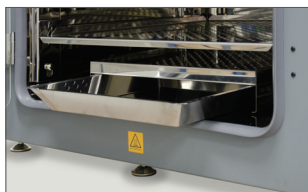
DIRECT HEAT & AIR JACKET

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



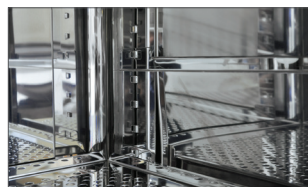
DUCT WORK

- 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

O₂ SENSOR

for suppressed O₂ model

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

CO₂ SENSOR

- Heat-resistant IR 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, heater, UV, 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 CO₂, and O₂ concentration.

INNER GLASS DOOR

For observing sample cells inside the chamber during operation

DOOR LATCH

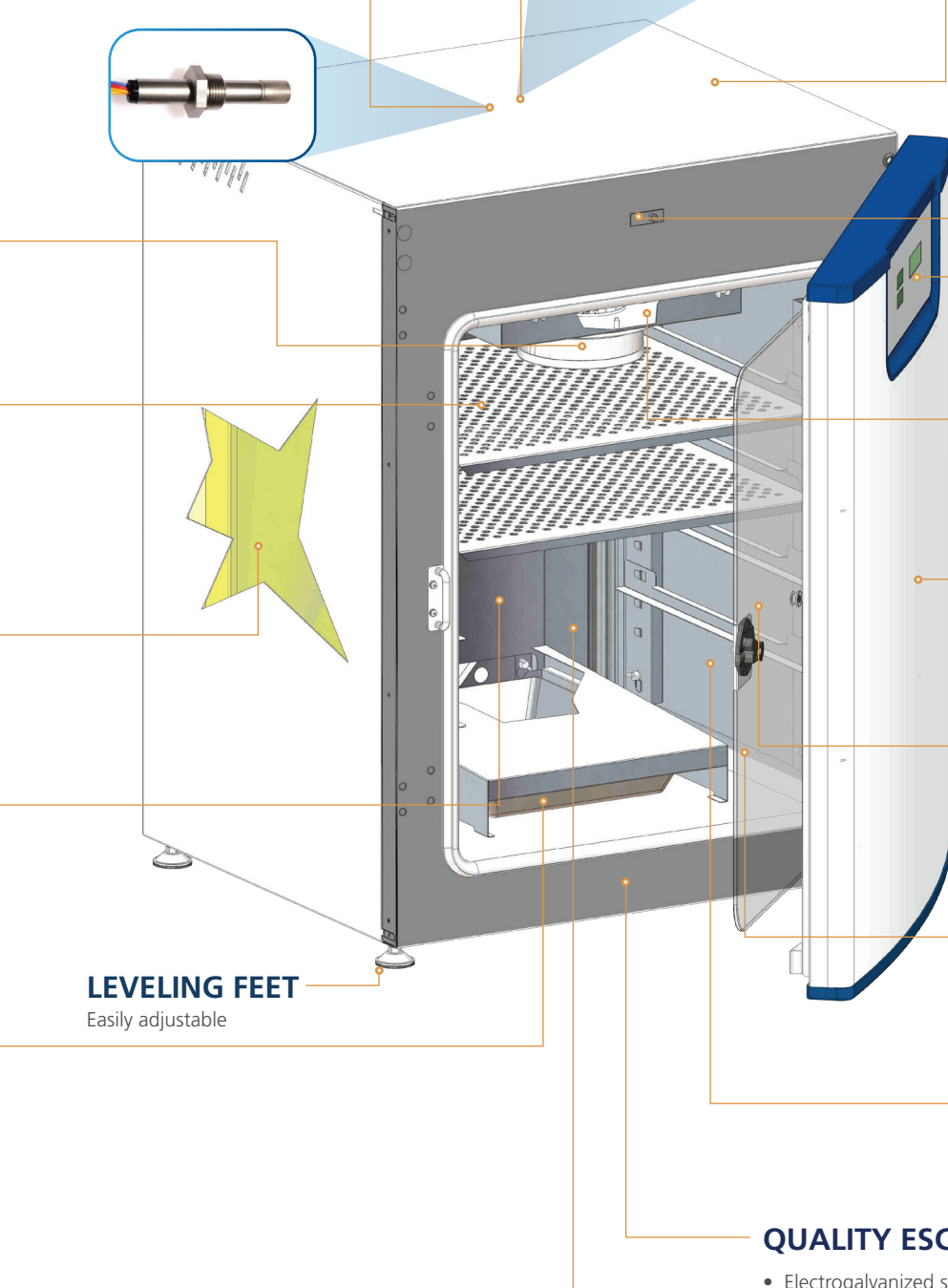
To lock / unlock the glass door

LEVELING FEET

Easily adjustable

QUALITY ESCO CONSTRUCTION

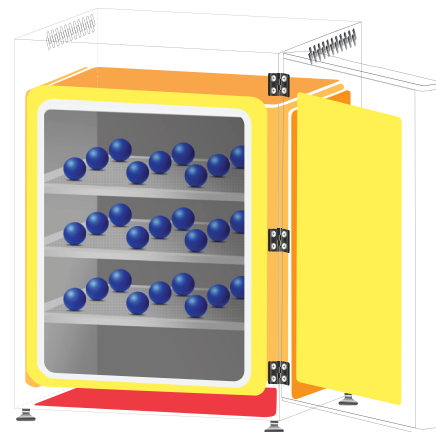
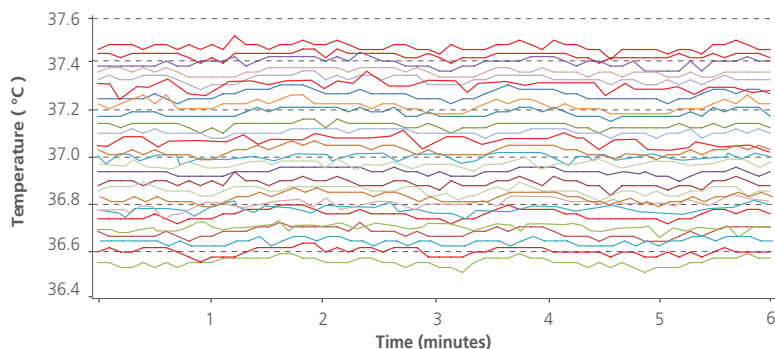
- Electrogalvanized steel with white oven-baked epoxy-polyester antimicrobial powder-coated finish.
- External surfaces are powder coated with Esco **ISOCIDE™** to eliminate 99.9% of surface bacteria within 24 hours of exposure.
- Ensures a healthier, safer, and cleaner lab environment.



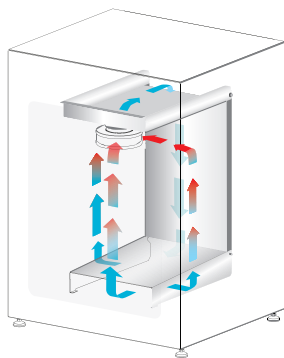
VIVOCELL™ PRECISE PARAMETER CONTROL

IMPROVED CULTURING ATMOSPHERE FOR BETTER CELL GROWTH

Direct heat and air jacketed design allows even distribution of heat with less than $\pm 0.35^{\circ}\text{C}^*$ temperature variation at 27 points in the chamber, following **DIN 12880: 2007** testing standards.

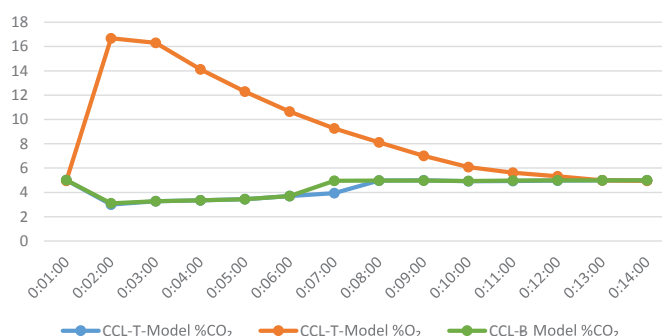


VENTIFLOW™ FORCED CONVECTION



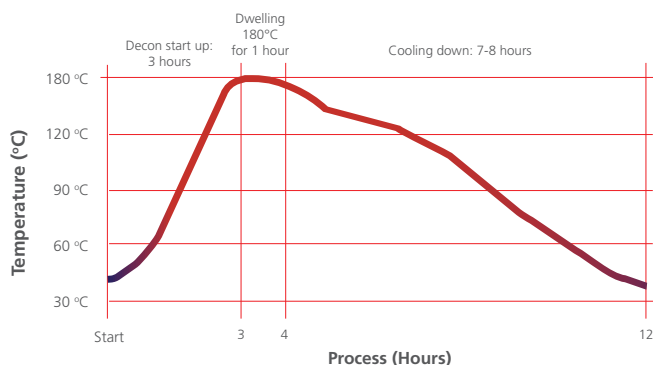
Gentle airflow accelerates homogenization and filtration of chamber atmosphere, preventing dehydration of samples while minimizing sample stress. Blower fan automatically stops when main door is opened to minimize contamination risk.

FAST PARAMETER RECOVERY



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

COMPLETE CONTAMINATION CONTROL

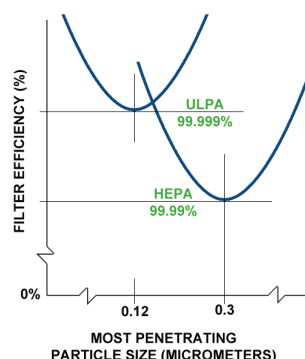


Complete Cycle lasts up to 11-12 hours.

Results are achieved when tested at 37°C as set point in temperature ambient of $22-25^{\circ}\text{C}$. Results may vary if set point changes and calibration is needed.

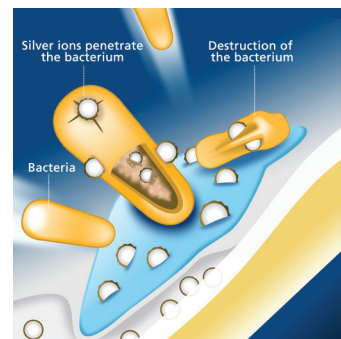
180°C HIGH HEAT STERILIZATION

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

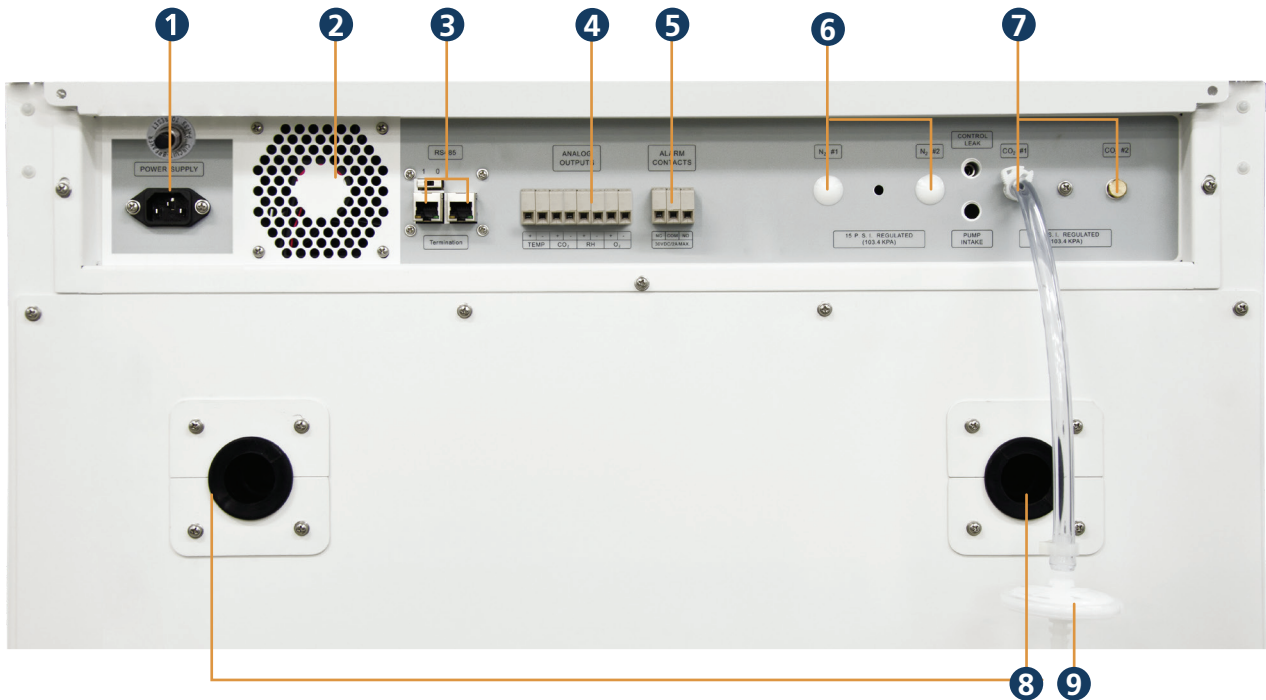
Has 10x more filtering efficiency than HEPA filter for a cleaner and safer chamber atmosphere.



ISOCIDE™ ANTIMICROBIAL SURFACE COATING

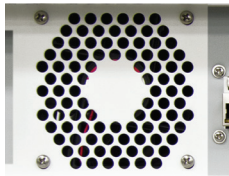
Enhances sample protection by inhibiting microbial growth on the external surfaces.

REAR PANEL



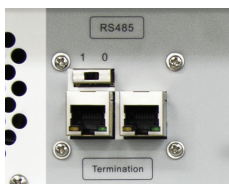
1 Power Supply Inlet

Connects the incubator unit to the power source.



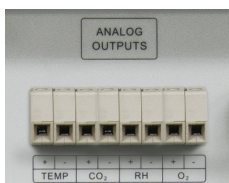
2 Cooling Fan

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



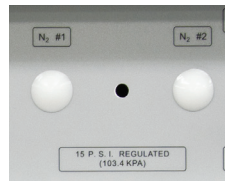
4 Analog Port (Optional)

Allows the incubator to output analog signals representing temperature, 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.



5 Alarm Contact

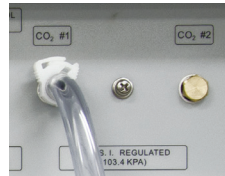
A set of relay contacts located on the rear of the unit is provided to monitor temperature, humidity or CO₂ alarms. The alarm contacts can be connected to a remote alarm system.



6 N₂ Gas Supply Inlet (for Suppressed O₂ model)

Only applicable for models with N₂* control function. Inlet pressure requirement is 15 psi.

* O₂ functions are applicable only to models with Suppressed O₂.



7 CO₂ Gas Supply Inlet

Connects the CO₂ 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 workspace. A rubber stopper is installed as standard configuration and is part of standard accessories.

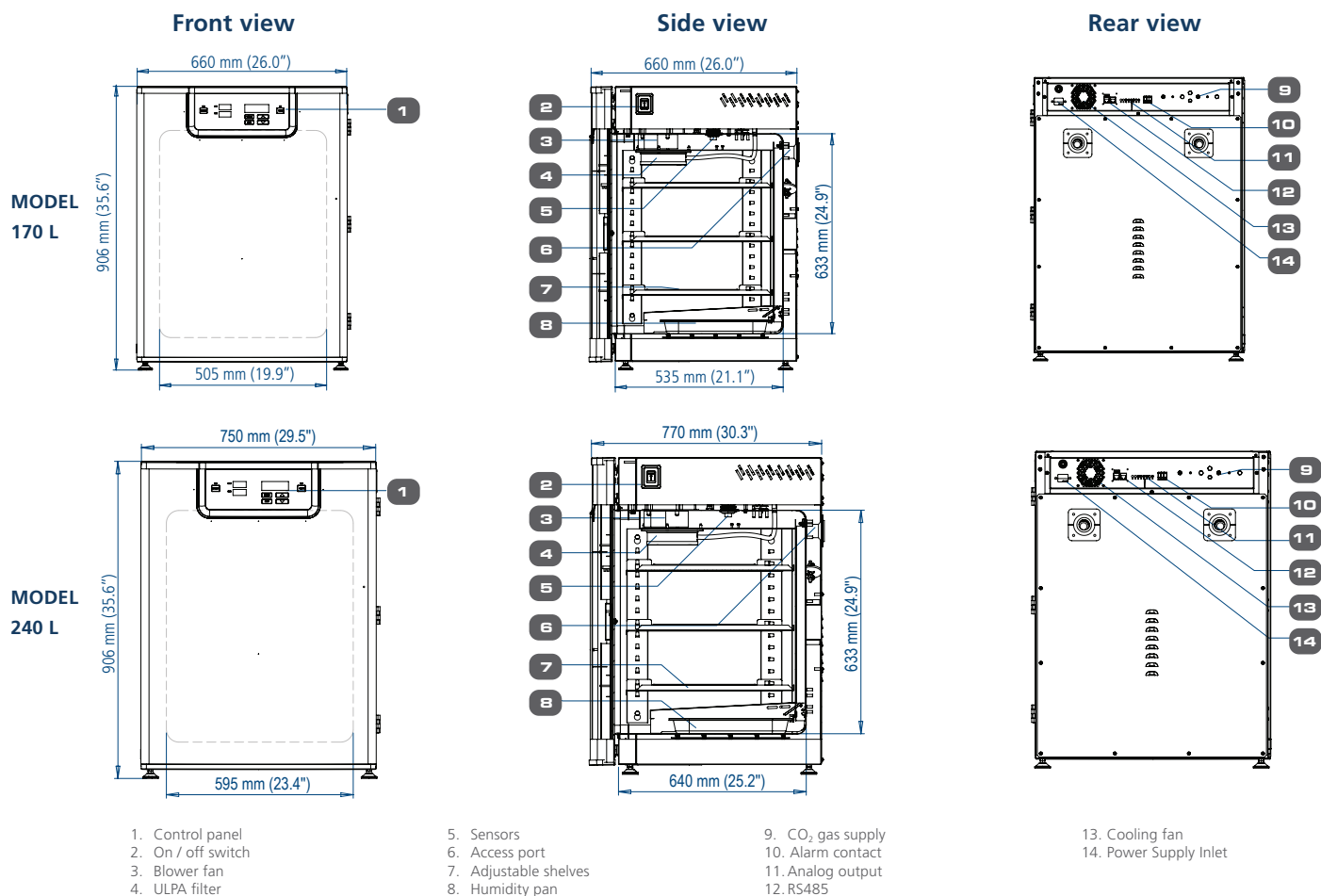


9 0.2µm Gas Inlet Filter

Provided to remove any contaminants from the gas supply.



ENGINEERING DRAWING



ORDERING INFORMATION

	MODEL	ITEM CODE	DESCRIPTION
IR SENSOR MODEL WITH STAINLESS STEEL CHAMBER	CCL-170B-8-HHS	2170295	CelCulture® Incubator 170 L IR Sensor, CO ₂ Control, ULPA, 180°C HHS, 230 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-170B-9-HHS	2170303	CelCulture® Incubator 170 L IR Sensor, CO ₂ Control, ULPA, 180°C HHS, 115 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 O₂ MODEL WITH STAINLESS STEEL CHAMBER	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-240T-8-HHS	2170300	CelCulture® Incubator 240L 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-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)	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-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-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-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 O₂ MODEL WITH STAINLESS STEEL CHAMBER (NO ULPA FILTER)	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-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-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-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 32°C (64.4 to 89.6°F)	
Temperature Control Range, °C *		Ambient +5 to 60	
Temperature Uniformity, °C *		Standard Unit: <± 0.35 Suppressed O ₂ model: <± 0.4	
Temperature Fluctuation, °C *		±0.2	
Temperature Recovery Time** (after 30 seconds door opening, 98% from initial value)		≤5 minutes	
CO ₂			
CO ₂ Control System		Microcontroller PI	
CO ₂ Control Range, % CO ₂		0-19.5	
CO ₂ Fluctuation, % CO ₂ ***		± 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 minutes	At 5.0% CO ₂ by volume (Standard unit): ≤5 minutes Suppressed O ₂ model: ≤8 minutes
O ₂			
O ₂ Control System		Microcontroller PI	
O ₂ Control Range, % O ₂		1-18	
O ₂ Fluctuation, % O ₂ *****		± 0.3	
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: ≤12 minutes	At 5.0% O ₂ by volume: ≤12 minutes
HUMIDITY			
Humidification Method		Humidity pan	
Humidity Range (at 37°C)*****		85-90	
PHYSICAL CONSTRUCTION			
Interior Volume		170 L (6 ft³)	240 L (8.5 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 Dimensions (W x D x H)	470 x 476 x 16 mm (18.5" x 18.75" x 0.63")	560 x 585 x 16 mm (22.0" x 23.9" x 0.63")
	Maximum Load per Shelf	11 kg/shelf (24.3 lbs./shelf)	15 kg/shelf (33.1 lbs./shelf)
Electrical Configuration 110-130 VAC, 50/60 Hz	Nominal Power at 37°C	42.2 W	42.2 W
	Maximum Power Consumption	1400 W	1770 W
	Full Load Amps	10 A	14 A
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
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 37.2°C.

***Results are achieved when tested at 5% CO₂ as set point. Results may vary if set point changes and calibration is needed.

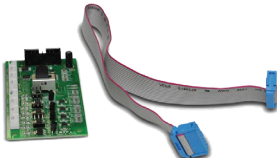
****For CO₂ level not exceeding 5.2%.

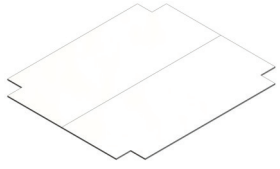
*****Results are achieved when tested at 5% O₂ as set point. Results may vary if set point changes and calibration is needed.

***** For O₂ level not lower than 4.8%.

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

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
	CO₂ 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-1012 (factory-installed)	5171455
		COA-1012-F (field-installed)	5171456
	N₂ 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-1011 (factory-installed)	5171453
		COA-1011-F (field-installed)	5171454
	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 CO₂/N₂ 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 WITH SUPPORT RAILS 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
	2-UNITS FLOOR STAND STACKING KIT 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 (for 170 L models)	5170489
		COA-2042-F (for 240 L models)	5170999
	THERMAL BREAK FOR DIRECT STACKING When stacking two CO ₂ incubators directly without the 2-Unit Floor Stand, the use of a Thermal Break is highly recommended. This accessory is designed to thermally isolate the two units by minimizing heat transfer between the upper and lower incubators. By doing so, it helps maintain stable temperature performance and reduces energy load.	COA-2013-F (For 170L models)	5171457
		COA-2014-F (For 240L models)	5171458
	ELECTRONIC CO₂ ANALYZER, FOR CO₂ / TEMP MEASUREMENT (WITH TEMPERATURE PROBE)	COA-2010-F	5170329
	ELECTRONIC CO₂ + O₂ ANALYZER, FOR CO₂ / O₂ / TEMP MEASUREMENT (WITH TEMPERATURE PROBE)	COA-2016-F	5170397
	ELECTRONIC CO₂ + O₂ + RH ANALYZER, FOR CO₂ / O₂ / 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	1081733
	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	9010179
	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
	PROtect GEN 2 Esco PROtect Generation 2 monitoring automatically send data to a central server to monitor temperature and other parameters and send real-time alerts to users. It complies with ISO 17025, GMP, and GLP requirements.	PROtect Gen 2	(See PROtect Gen 2 brochure)

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