

ESCO

WORLD CLASS. WORLDWIDE.

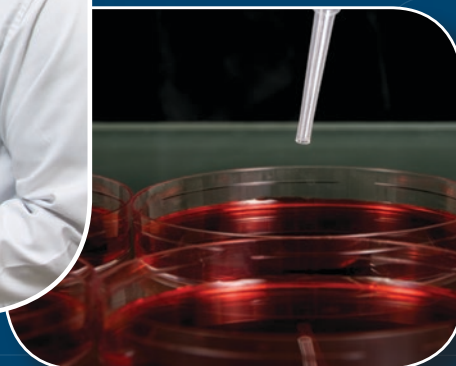


CelCulture® CO₂ Incubators

CelCulture®

CO₂ Incubators

Cradle for Beautiful Cells



Designed in the USA



CelCulture®

CO₂ Incubators

INTRODUCTION

CO₂ incubators are widely used in scientific research to grow and maintain cell cultures. Typical fields of application include tissue engineering, *in vitro* fertilization, neuroscience, cancer research and other mammalian cell research applications.

Sleek, reliable and intuitive, Esco CelCulture® CO₂ incubators provide complete sample protection that brings your scientific dreams one step closer to reality.

KEY FEATURES

CelCulture® CO₂ INCUBATORS

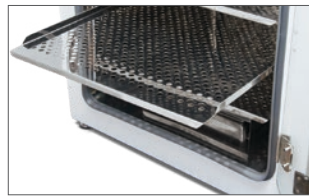
Cradle for Beautiful Cells



CelCulture® CO₂ Incubators available in 3 sizes, 50 L, 170 L, and 240 L.

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

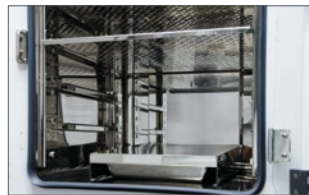


SHELVING

- 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

- Outstanding sensor accuracy
- Faster response time
- Long-term stability
- Moist heat-proof design

DOOR SWITCH

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

TOP COVER

Provides quick access to electrical panel components

CO₂ SENSOR

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

SMARTSENSE™ MICROCONTROLLER INTERFACE

Intuitive, fully-equipped control and monitoring system

BLOWER*

Gentle airflow in chamber improves recovery and uniformity

OUTER DOOR

- Reversible
- Heated to prevent condensation

SAMPLE PORT

Allows direct measurement of chamber atmosphere such as temperature and CO₂ concentration

INNER GLASS DOOR

For observing sample cells inside the chamber during operation

DOOR LATCH

To lock / unlock the glass door

LEVELING FEET

Easily adjustable

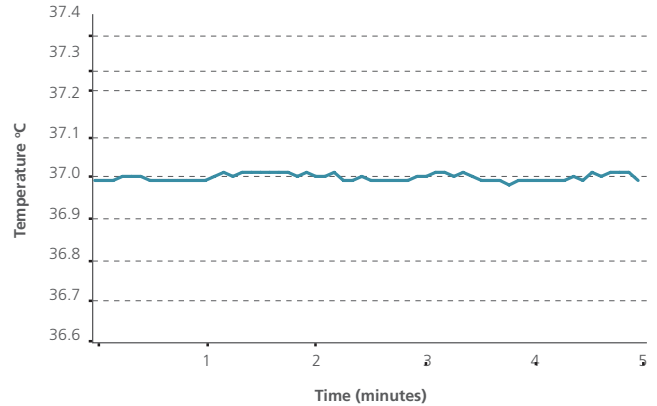
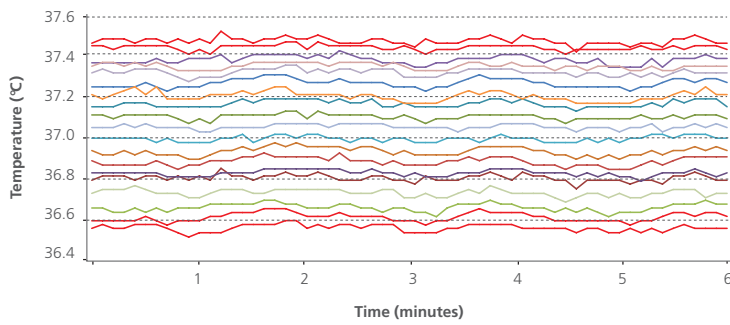
QUALITY ESCO CONSTRUCTION

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

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

VIVOCELL™ PRECISE PARAMETER CONTROL

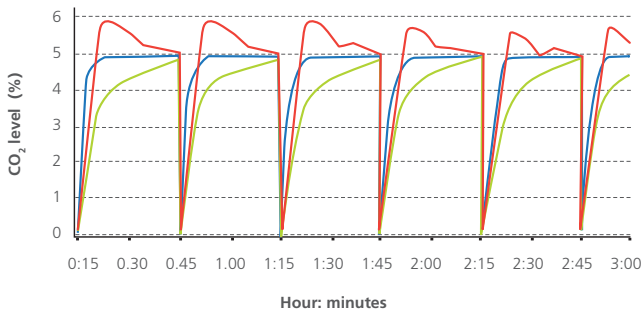
BEST UNIFORMITY AND CONTROL AMONG THE COMPETITION



Different lines represent different sensor positions inside the chamber. Esco CelCulture® has uniformity variance of less than $\pm 0.5^\circ\text{C}$ which means all the samples are evenly heated.*

Minimal fluctuation ($\pm 0.2^\circ\text{C}$) ensures temperature stability.*

FAST CO₂, TEMPERATURE AND HUMIDITY RECOVERY WITHOUT OVERTHOOT

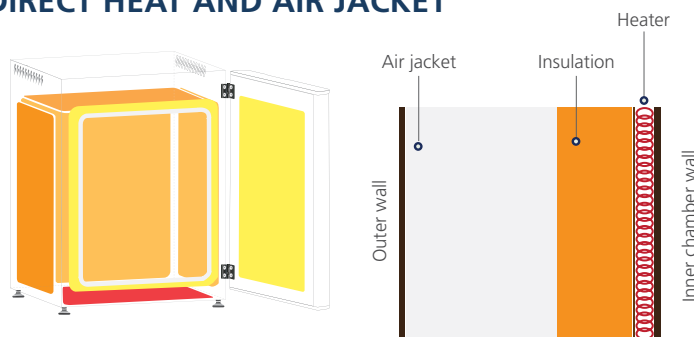


Precisely-tuned sensor and software result in fast recovery of CO₂ without overshoot. This ensures uniform CO₂ levels even with frequent incubator door opening.

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

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

DIRECT HEAT AND AIR JACKET

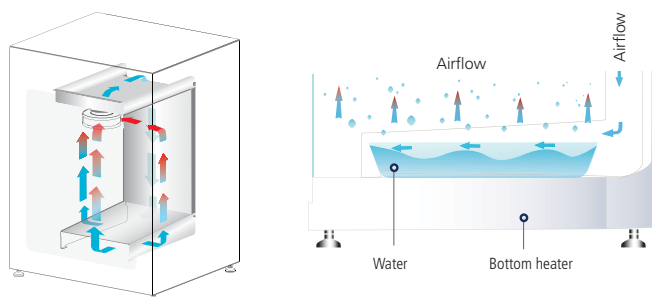


• Direct heating enables rapid temperature recovery while air jacket provides isolation against ambient temperature fluctuations.

• Precise heating in the chamber is achieved by using 8 heaters located in 3 zones. The 3 zones are intelligently controlled by the microcontroller for best temperature uniformity and minimal fluctuation.

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

VENTIFLOW™ FORCED CONVECTION



• No disturbance to cell culture.

• Blower automatically stops when door is opened to minimize mixing of chamber and room air.

• Accelerates recovery of chamber air to ISO Class 5 Cleanliness after door closing to prevent contamination.

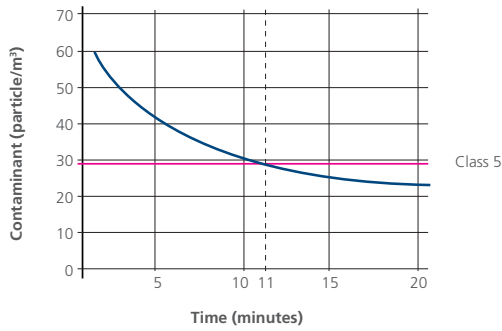
• Improves CO₂, humidity and temperature uniformity.

• Filtered air circulates across water pan to accelerate humidifying process.

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

ROBUST CONTAMINATION CONTROL

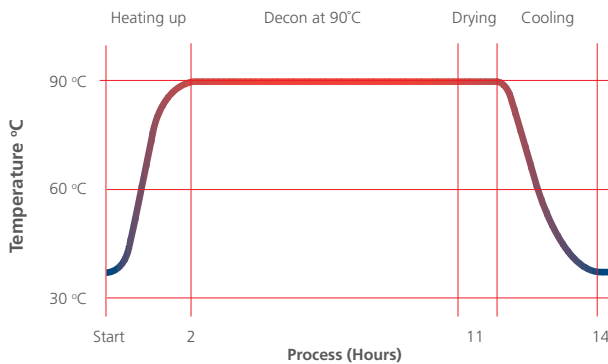
STERISAFE™ ULPA FILTRATION SYSTEM



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

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

VALIDATED SWIFTCON™ OVERNIGHT DECONTAMINATION CYCLE



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

- The automated SwiftCon™ 90°C moist heat decontamination cycle has been proven effective in deactivating normally resistant fungi, bacterial spores and vegetative cells by the Health Protection Agency (HPA) in UK.
- Full decontamination cycle completes within 15 hours.
- Chamber is cool and dry at the end of the cycle. No further wipe down is needed.*

- 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.

*Not applicable to CCL-50L unit since it has no decon pump to dry the chamber and condensation will normally occur in the chamber after the cycle. Further wipe down is therefore required after the cycle is done.

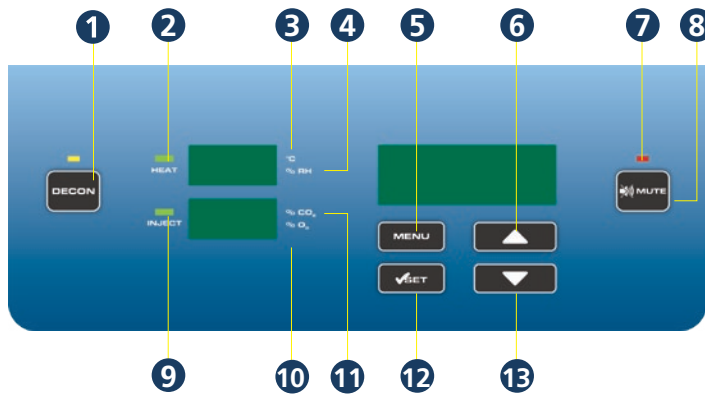
GAS INJECTION LINES ARE FILTERED



- 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



- | | |
|---|--|
| <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 8. Mute alarms 9. INJECT LED
Lights up when gas is injected 10. % O₂ is lit when displaying the O₂ concentration 11. % CO₂ is lit when displaying the CO₂ concentration 12. Confirm value / enter a menu 13. Scroll down / decrease value |
|---|--|

• **Comprehensive, user-configurable alarms:**

- Temperature
- CO₂
- Humidity (if installed)
- O₂ (if installed)

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

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

In addition to CO₂ tank low alarm, CelAlert™ has CO₂ tank depletion reminder that automatically calculates how much CO₂ gas is left in the tank and alerts user to replace the tank one week before the gas is depleted. This gives the user some buffer time to place orders for new tanks.

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

ULPA reminder will alert user to replace ULPA filter.

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

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

```
DATALOGGING
>SHOW TEMP DATA LOG
SHOW %CO2 DATA LOG
DATA LOG PERIOD
```

```
012016 0724 36.8°C
012016 0719 37.0°C
012016 0714 37.1°C
012016 0709 37.3°C
```

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



Voyager®

Remote Monitoring, Datalogging, Programming Software

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

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

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

Compatible Equipment

- Lexicon® - Ultra-low Temperature Freezer
- CelCulture® - CO₂ Incubator (CCL)
- CelMate® - CO₂ Incubator (CLM)
- Isotherm® - Forced Convection Oven (OFA)
- Isotherm® - Forced Convection Incubator (IFA)
- Isotherm® - Refrigerated Incubator (IFC)
- Isotherm® - Natural Convection Incubator (INA)



CelCulture®

CO₂ Incubator with Integrated Cooling System

INTRODUCTION

Esco CelCulture® CO₂ Incubator with Integrated Cooling System provides solution for highly specialized applications.

The integrated cooling system allows studies of samples that requires temperature at/or below ambient temperature.

KEY FEATURES

WIDER TEMPERATURE RANGE

Temperature range of 8°C below ambient to 60°C means wider range of applications.

HIGHLY EFFICIENT, ENVIRONMENT FRIENDLY PELTIER COOLING SYSTEM

This provides precise heating and cooling inside the chamber making sure that your samples are safe from temperature changes.

COMPLETE CONTAMINATION CONTROL METHODS

- 90 °C validated moist heat decontamination cycle
- ULPA filter
- ISOCIDE™ anti-microbial coating
- 0.2 micron inlet filter for gas inputs



CelCulture®

CO₂ Incubator with Copper Interior Chamber

Pure solid copper interior offers additional protection for your precious samples.

MAXIMUM CONTAMINATION CONTROL

Copper has been known for millennia to have antimicrobial properties. Copper can inhibit the growth of common culture microbial contaminants such as:

- *Escherichia coli*
- *Staphylococcus aureus*
- viruses

Other contamination control methods include:

- ✓ ULPA filter with 99.999% efficiency*
- ✓ 90°C Moist Heat Decontamination Cycle (HPA-Validated)
- ✓ 0.2 micron inlet filter for gas inputs
- ✓ ISOCIDE™ antimicrobial powder coating

**Not available in 50 L model*



CelCulture®

CO₂ Incubator with Stainless Steel Exterior Cabinet

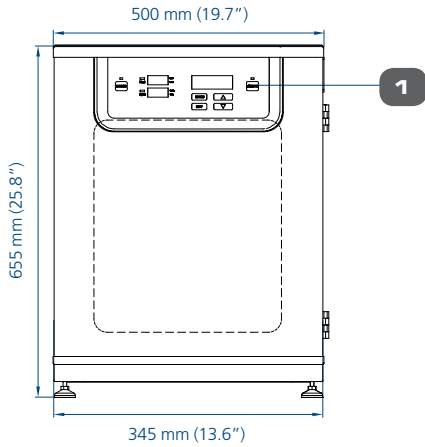
- Corrosion-resistant Surface
- Meets Pharmaceutical and Clinical Laboratory Requirements

TECHNICAL SPECIFICATIONS

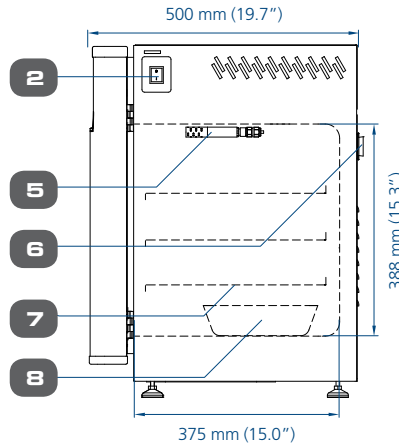
CEL CULTURE® CO₂ STANDARD

Front view

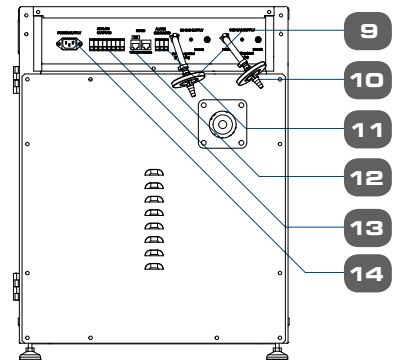
MODEL 50 L



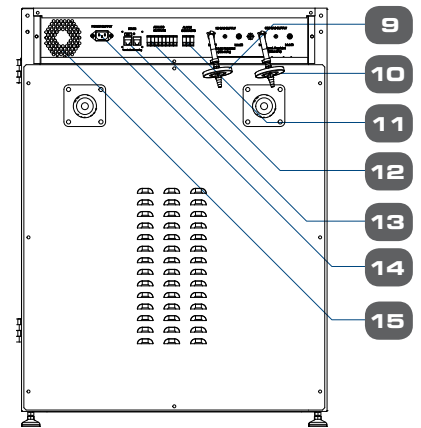
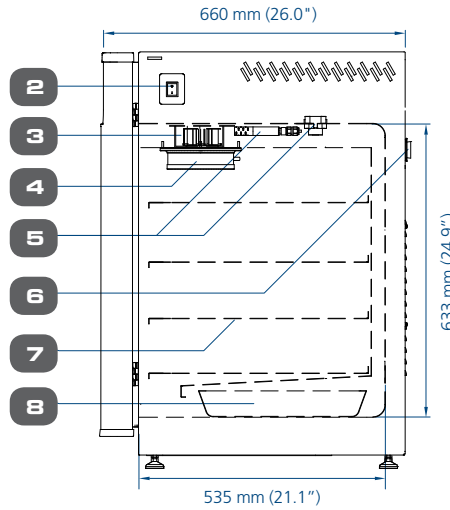
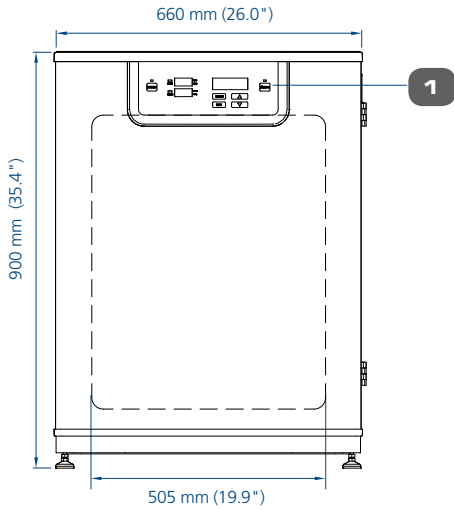
Side view



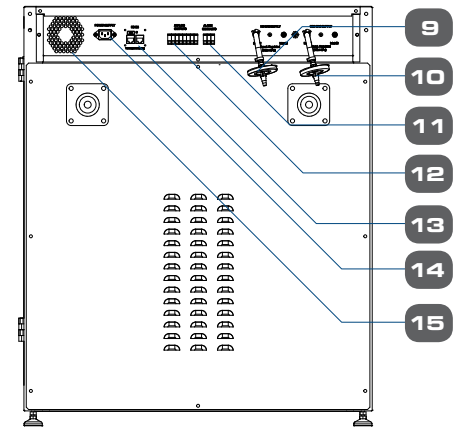
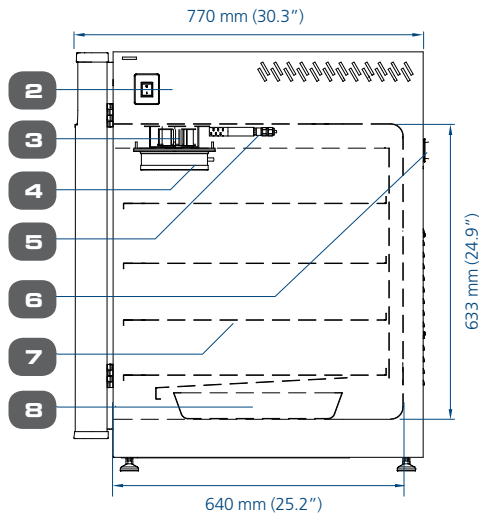
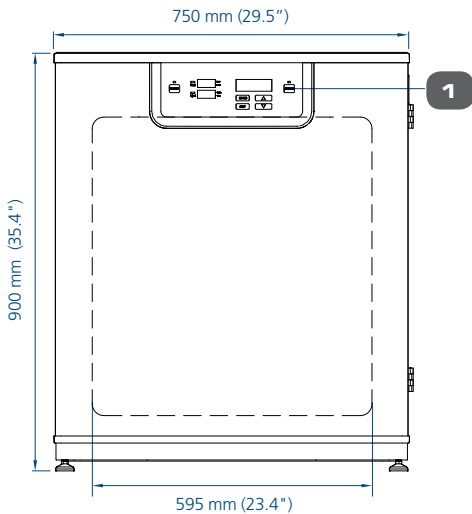
Rear view



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. N₂ gas supply
- 10. CO₂ gas supply

- 11. Alarm contact
- 12. Analog output
- 13. RS485
- 14. Power supply inlet
- 15. Cooling fan

GENERAL SPECIFICATIONS

MODEL	CelCulture® CO ₂ , Standard	CCL-050B-9 2170054	CCL-170B-9 2170004	CCL-240B-9 2170060
	CelCulture® CO ₂ , Tri-gas (Suppressed O ₂)	CCL-050T-9 2170056	CCL-170T-9 2170048	CCL-240T-9 2170062
	CelCulture® CO ₂ with Copper Interior Chamber	CCL-050B-9-Cu 2170082	CCL-170B-9-Cu 2170084	CCL-240B-9-Cu 2170086
	CelCulture® CO ₂ with Stainless Steel Exterior	CCL-050B-9-SS 2170176	CCL-170B-9-SS 2170177	CCL-240B-9-SS 2170140
TEMPERATURE				
Temperature Control Method	Direct heat & Air Jacket using Microcontroller PI			
Ambient Temperature Range	18 to 30°C (64.4 to 86.0°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	≤5 minutes	≤6 minutes
CO₂				
CO ₂ Control System	Microcontroller PI			
CO ₂ Range, % CO ₂	0-20			
CO ₂ Accuracy, % CO ₂ ***	±0.1			
CO ₂ Sensor	Infrared (IR) Sensor			
CO ₂ Recovery Time**** (after 30 seconds door opening, 98% from initial value)	Standard Unit: ≤6 minutes Suppressed O ₂ model: ≤8 minutes	Standard Unit: ≤5 minutes Suppressed O ₂ model: ≤6 minutes	Standard Unit: ≤6 minutes Suppressed O ₂ model: ≤10 minutes	Standard Unit: ≤6 minutes Suppressed O ₂ model: ≤10 minutes
O₂/T-SERIES (FOR SUPPRESSED O₂ MODEL)				
O ₂ Control System	Microcontroller PI			
O ₂ Range, % O ₂	1-20.7			
O ₂ Accuracy, % O ₂ *****	± 0.1			
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: ≤10 mins.	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*****, % RH	Standard Unit: Up to 95% Suppressed O ₂ model: Up to 91%			
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 (except CCL-SS models with stainless steel exterior)		
	Interior Material	Stainless steel, type 304 (except CCL-Cu models with copper interior chamber)		
	Number of Shelves	3	4	4
	Maximum Number of Shelves	4	7	7
	Shelves Area	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
Net Weight	52 kg (114.6 lbs)	101 kg (222.7 lbs)	121 kg (266.8 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			

All data recorded is specified for standard models with unloaded chambers and tested under optimum factory setting conditions of 23 °C and 60% ambient humidity.

*Results are achieved when tested at 37 °C as set point. Results may vary if set point changes and calibration is needed.

**For temperature not exceeding 37 °C.

***Results are achieved when tested at 5% 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%.

*****Not available for 50 L models.

TECHNICAL SPECIFICATIONS

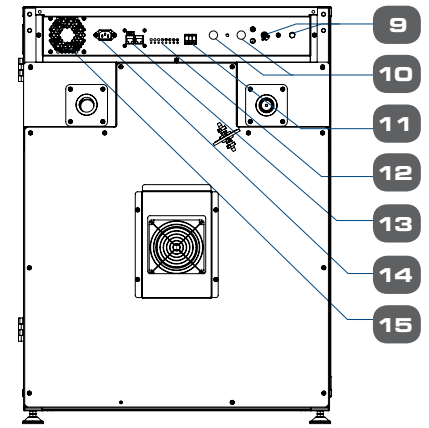
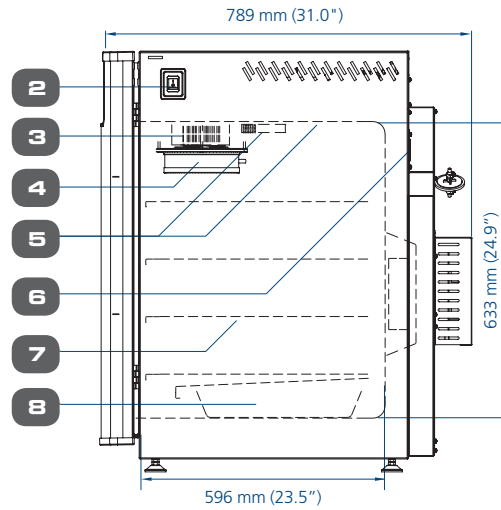
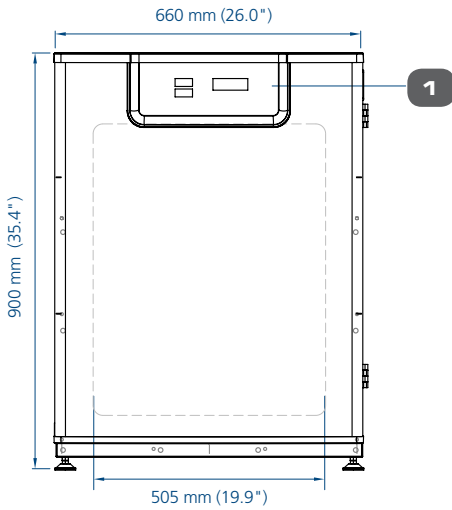
CELLCULTURE CO₂ WITH INTEGRATED COOLING SYSTEM

Front view

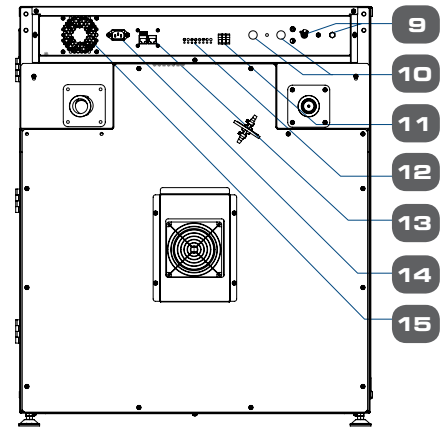
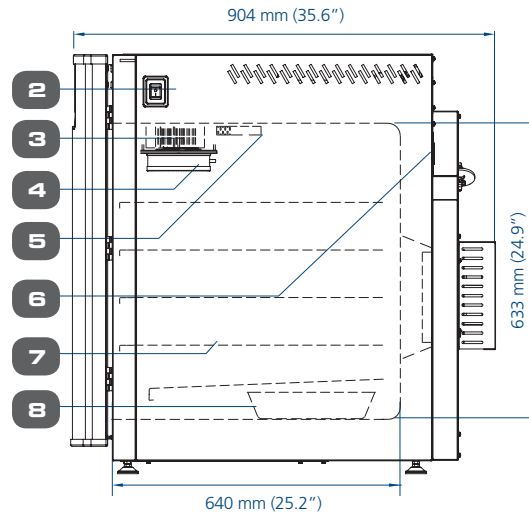
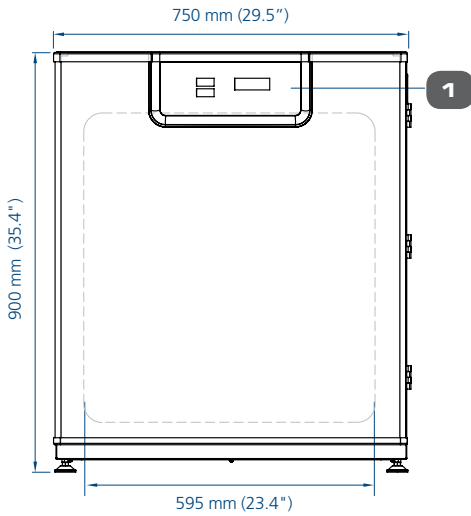
Side view

Rear view

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. CO₂ gas supply
- 10. N₂ gas supply

- 11. Alarm contact
- 12. Analog output
- 13. RS485
- 14. Power supply inlet
- 15. Cooling fan

GENERAL SPECIFICATIONS

CEL CULTURE CO₂ WITH INTEGRATED PELTIER COOLING SYSTEM

MODEL	CelCulture® CO ₂ with Integrated Cooling System	CO ₂ : CCL-170B-9-P 2170115	CO ₂ & O ₂ : CCL-170T-9-P 2170153	CO ₂ : CCL-240B-9-P 2170266	CO ₂ & O ₂ : CCL-240T-9-P 2170288
TEMPERATURE					
Temperature Control Method	Direct heat & Air Jacket using Microcontroller PI				
Ambient Temperature Range	18 to 30°C (64.4 to 86.0°F)				
Temperature Range, °C	8°C below ambient to 60°C				
Temperature Uniformity, °C*	< ±0.5				
Temperature Accuracy, °C*	< ±0.1				
Temperature Recovery Time** (after 30 seconds door opening, 98% from initial value)	≤5 minutes			≤6 minutes	
CO₂					
CO ₂ Control System	Microcontroller PI				
CO ₂ Range, % CO ₂	0-20				
CO ₂ Accuracy, % CO ₂ ***	±0.1				
CO ₂ Sensor	Infrared (IR) Sensor				
CO ₂ Recovery Time**** (after 30 seconds door opening, 98% from initial value)	Standard Unit: ≤5 minutes Suppressed O ₂ model: ≤6 minutes			Standard Unit: ≤6 minutes Suppressed O ₂ model: ≤10 minutes	
O₂/T-SERIES (FOR SUPPRESSED O₂ MODEL)					
O ₂ Control System	Microcontroller PI				
O ₂ Range, % O ₂	1-20.7				
O ₂ Accuracy, % O ₂ *****	± 0.1				
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*****, % RH	Standard Unit: Up to 95% Suppressed O ₂ model: Up to 91%				
PHYSICAL CONSTRUCTION					
Interior Volume	170 L (6 ft ³)			240 L (8.5 ft ³)	
External Dimensions (W x D x H)	660 x 789 x 900 mm (26.0" x 31.0" x 35.4")			750 x 904 x 900 mm (29.5" x 35.6" x 35.4")	
Internal Dimensions (W x D x H)	505 x 596 x 633 mm (19.9" x 23.5" 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 (except CCL-SS models with stainless steel exterior)			
	Interior Material	Stainless steel, type 304			
	Number of Shelves	4			4
	Maximum Number of Shelves	7			7
	Shelves Area	465 x 470 mm (18.3" x 18.5")			550 x 560 mm (21.7" x 22.0")
	Maximum Load per Shelf	11 kg/shelf (24.3 lbs/shelf)			15 kg/shelf (33.1 lbs/shelf)
Electrical Configuration 110-130 VAC, 50/60 Hz	Nominal Power at 37°C	42.2 W			42.2 W
	Maximum Power Consumption	1184.3 W			1727.9 W
	Full Load Amps	9.2 A			13.4 A
Net Weight	113 kg (249.1 lbs)			133 kg (293.2 lbs)	
Shipping Weight	139 kg (306.4 lbs)			174 kg (383.6 lbs)	
Shipping Dimensions (W x D x H)	850 x 720 x 1120 mm (33.5" x 28.3" x 44.1")			850 x 850 x 1120 mm (33.5" x 33.5" x 44.1")	
Shipping Volume	0.70 m ³ (24.85 ft ³)			0.79 m ³ (28.03 ft ³)	
CONTAMINATION CONTROL					
Contamination Control Methods	1) Main body is 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				

All data recorded is specified for standard models with unloaded chambers and tested under optimum factory setting conditions of 23 °C and 60% ambient humidity.

*Results are achieved when tested at 37 °C as set point. Results may vary if set point changes and calibration is needed.

**For temperature not exceeding 37 °C.

***Results are achieved when tested at 5% 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%.

*****Not available for 50 L models.

OPTIONS AND ACCESSORIES



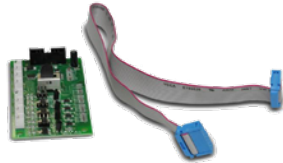
COA-1001 / COA-1001-F Humidity Display

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 CO₂ Backup

This option allows two tanks of CO₂ to be connected to the incubator. It will automatically switch from the primary tank to the secondary tank when low gas pressure is detected on the primary tank.



COA-1005 / COA-1005-F Analog Output

A set of relay contacts is provided at the rear of the incubator that allows the incubator to output analog signals representing the temperature, CO₂ / O₂ content and relative humidity, depending on the options available in your incubator. This allows the chamber to be connected to an in-house data acquisition or alarm system. This option can also be field-installed.

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



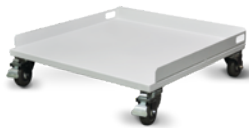
- COA-2030/ COA-2030-F Sealed Inner Door Kit with 2 glass doors (50L)**
- COA-1006/ COA-1006-F Sealed Inner Door Kit with 4 glass doors (170L)**
- COA-2029/ COA-2029-F Sealed Inner Door Kit with 4 glass doors (240L)**
- COA-2040/ COA-2040-F Sealed Inner Door Kit with 6 glass doors (240L)**

CelCulture® CO₂ incubators can be equipped with 2, 4 or 6 glass doors, that can be opened horizontally which allows access to defined sections of the incubator without affecting much the inner atmosphere of the chamber. This minimizes recovery time and contamination risks. The sealed-inner door is also reversible as same as the outer door which can be installed to be opened either from-right-to-left or from-left-to right. The sealed-inner door is available as a factory-installed option or field installed retrofit kit.



COA-1007 / COA-1007-F N₂ Back-up

This option allows two tanks of N₂ 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-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.

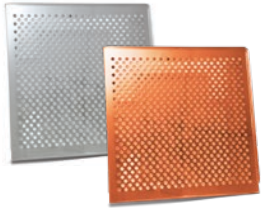


COA-2005-F 2-Stage Gas Regulator for CO₂/N₂

CO₂ and N₂ gas input regulators reduce pressure from the tank to the incubator. It has dual pressure gauges, barbed line connection and shut-off valve. It prevents over-pressurization of the gas supply into the incubator which could cause the tubing to burst.

- CGA 320 connector (U.S. Standard)
- BP-B5341-#8-NT4 connector (British Standard)
- G5/8-RH connector (China Standard)

Note: Compatible with European DIN477, French NFE29-650 and Australia AS2473



COA-2024-F (50L)/ COA-2007-F (170 L)/ COA-2025-F (240 L) Extra Shelf (Stainless Steel) for Standard Stainless Steel Chamber

COA-2026-F (50L) / COA-2027-F (170 L) / COA-2028-F (240 L) Extra Shelf (Copper) for Standard Copper Chamber

Each CelCulture® CO₂ 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-2008-F Stacking Kit

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



COA-2010-F Electronic CO₂ Analyzer, For CO₂ / Temp Measurement

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

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

The electronic analyzer allows the measurement of CO₂ concentration, O₂ concentration, relative humidity and temperature (temperature probe already included).



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

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



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

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



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

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



COA-2015-F Inner Door Shelving Kit

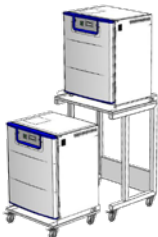
(4 Sets With Total 12 Mini-Shelves For One Incubator) (170 L)

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



5250001 Voyager® Software Kit

Esco Voyager® is a PC-based software package developed for the remote monitoring, datalogging and programming / device configuration of Esco controlled environment laboratory equipment. Compatible equipment includes laboratory ovens and incubators, low temperature incubators, CO₂ incubators, and ultra-low temperature freezers.

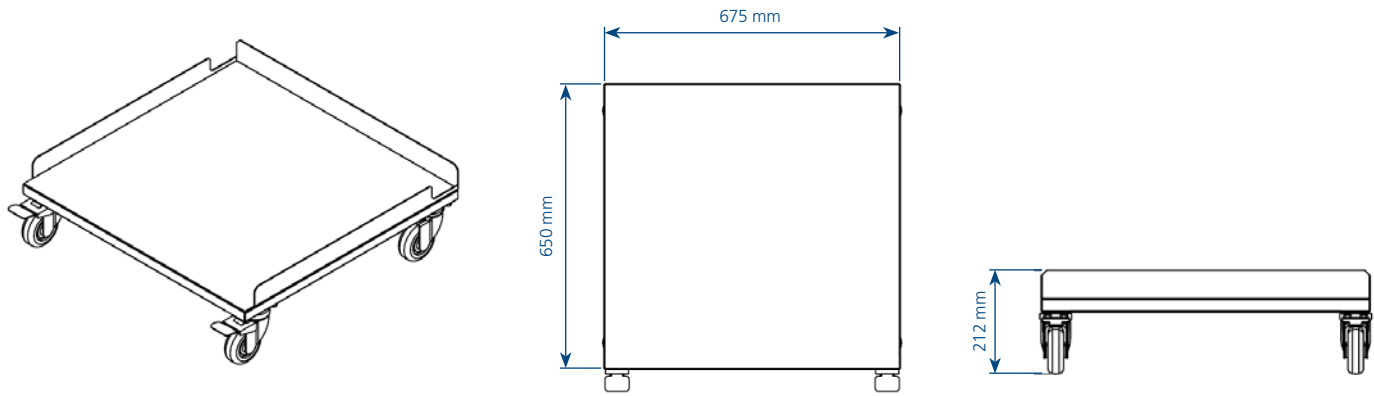


COA-2004 CCL-170 2-UNITS FLOOR STAND

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

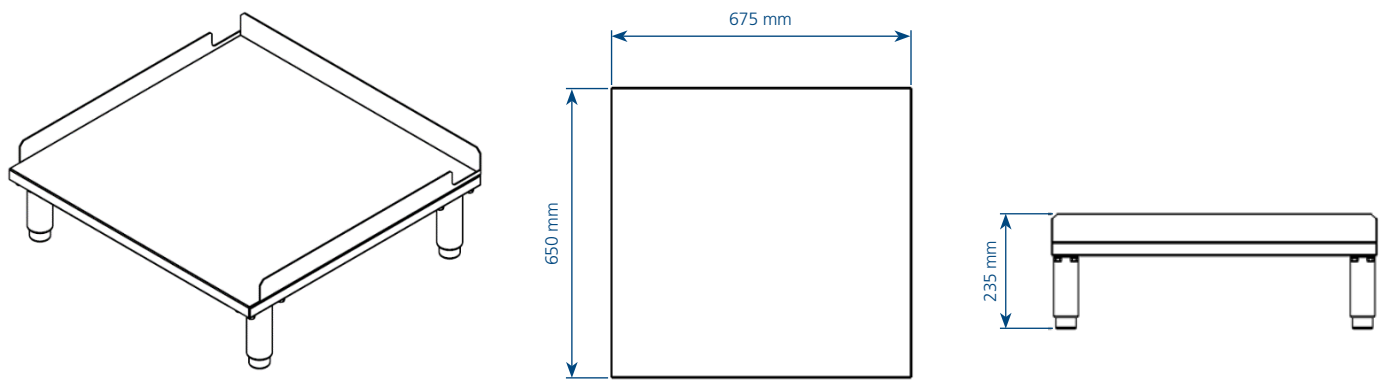
FLOOR STAND TECHNICAL SPECIFICATIONS

Roller Base Model 170 L



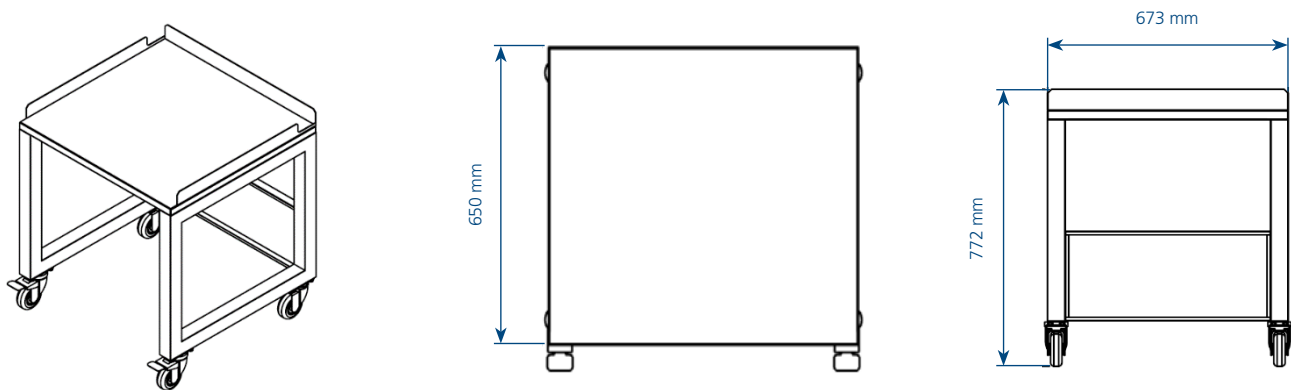
	COA-2018-F (50 L)	COA-2001-F (170 L)	COA-2019-F (240 L)
Dimensions (W x D x H)	510 x 500 x 212 mm	675 x 650 x 212 mm	765 x 740 x 212 mm

Floor Stand 200 mm (8.0") with Adjustable Feet, Model 170 L



	COA-2020-F (50 L)	COA-2002-F (170 L)	COA-2021-F (240 L)
Dimensions (W x D x H)	510 x 500 x 235 mm	675 x 650 x 235 mm	765 x 740 x 235 mm

Floor Stand 700 mm (27.6") with Casters, Model 170 L



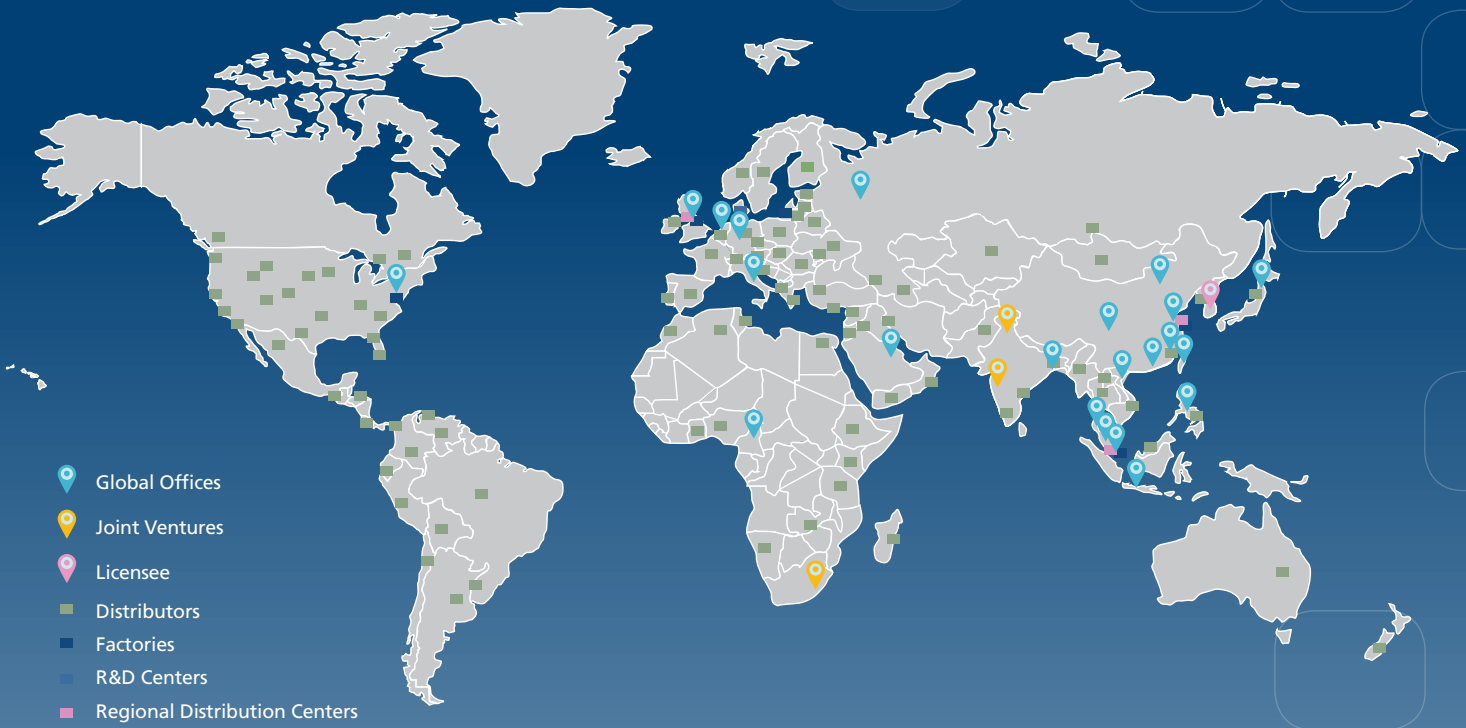
	COA-2022-F (50 L)	COA-2003-F (170 L)	COA-2023-F (240 L)
Dimensions (W x D x H)	510 x 500 x 772 mm	675 x 650 x 772 mm	765 x 740 x 737 mm

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-2030	5170672	Sealed Inner Door Kit for 50 L (2 Glass Doors with Latches), Factory-installed
COA-2030-F	5170673	Sealed Inner Door Kit for 50 L (2 Glass Doors with Latches), Field-installed
COA-1006	5170477	Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Factory-installed
COA-1006-F	5170488	Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Field-installed
COA-2029	5170654	Sealed Inner Door Kit for 240 L (4 Glass Doors with Latches), Factory-installed
COA-2029-F	5170655	Sealed Inner Door Kit for 240 L (4 Glass Doors with Latches), Field-installed
COA-2040	5170783	Sealed Inner Door Kit for 240 L (6 Glass Doors with Latches), Factory-installed
COA-2040-F	5170786	Sealed Inner Door Kit for 240 L (6 Glass Doors with Latches), Field-installed
COA-1007	5170490	N ₂ Back-up (Tank Switcher), Factory-installed
COA-1007-F	5170491	N ₂ Back-up (Tank Switcher), 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 / N 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-2026-F	5170427	Extra Shelf (50 L, Copper)
COA-2027-F	5170428	Extra Shelf (170 L, Copper)
COA-2028-F	5170495	Extra Shelf (240 L, Copper)
COA-2008-F	5170483	Stacking Kit (one set included with every unit purchased)
COA-2010-F	5170329	Electronic CO ₂ Analyzer, For CO ₂ / Temp Measurement (with Temperature Probe)
COA-2016-F	5170397	Electronic CO ₂ + O ₂ Analyzer, For CO ₂ / O ₂ / Temperature Measurement (with Temperature Probe)
COA-2017-F	5170398	Electronic CO ₂ + O ₂ + RH Analyzer, For CO ₂ / O ₂ / RH / Temperature Measurement (with Temperature Probe)
COA-2011-F	2170020	IQ / OQ Documentation
COA-2012-F	2170021	6" Chart Recorder, Temp, 115/230 VAC, 50/60 Hz
COA-2013-F	2170022	8" Chart Recorder, Temp/Temp, 115/230 VAC, 50/60 Hz
COA-2014-F	2170023	6" Chart Recorder, Temp/RH, 115/230 VAC, 50/60 Hz
COA-2015-F	5170487	Inner Door Shelving Kit for 170 L (4 sets with total 12 mini-shelves for one incubator)
Voyager®	5250001	Voyager® Software Kit
COA-2004-F	5170489	2-units Floor Stand Stacking Kit (For 170L)

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