



# Food and Beverage Industry



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# 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.





## Research and Development

An integral part of our business planning effort is based on managing a robust research and development program in Singapore, China, Europe, and USA, balanced against an investment in service support, training and customer education. Compared to industry averages, Esco invests a significant percentage of annual revenues in research and development.

As a result of our investment, and with continuous feedback and idea evaluation among our research, global sales, marketing, purchasing and manufacturing teams; Esco products reflect the best contemporary designs in performance, ergonomics and customer satisfaction.

- Engineers located in technology centers in Singapore, China, Europe and the USA
- Growing patent portfolio
- Core competencies:
  - Embedded system, sensor and software development and integration
  - Containment engineering for biohazards, chemical vapors and hazardous powders
  - Decontamination cycle development
  - Computational fluid dynamics
  - Temperature, humidity, gas and environmental control
  - Imaging systems
  - Wireless and remote monitoring
  - cGMP laboratory design

## Production and Quality

Our manufacturing advantage stems from extensive degree of vertical integration; enabled by our world-leading high throughput. All processes, with a few exceptions, are performed in-house. This allows us to achieve a truly world class reliability and quality.

- Incoming materials inspection and warehousing
- CNC-controlled sheet metal fabrication
- Full range of welding including MIG, TIG, Spot, Orbital, and Robotic welding
- Environment-friendly powder coating lines
- Electromechanical final product assembly
- Electrical / electronics sub-assembly
- Multi-step electrical and physical performance testing
- Independent quality control at each step in the production cycle
- Microbiology, chemistry, containment test labs
- Instruments calibration laboratory

Esco's focus on quality and timeliness is relentless. Continuous improvement is a mantra. Cross-functional teams from Esco Production, R&D, Quality Assurance, Senior Management, are regularly assembled to review and implement areas for improvement.

Esco manufacturing site is audited by certification bodies like ISO 9001, ISO 140001, ISO 13485, NSF International, UL International, and TUV Nord Germany. Our machines safety, workplace safety, and environmental safety are also audited by different government institutions.

All of the third party certifications and audits help our customers to ensure Esco manufacturing site's consistency of producing high quality products and continual improvements.



## OVERVIEW

Of all functions in the food industry, Quality Assurance (QA) requires many diverse technical and analytical skills. QA continuously monitors incoming raw and finished products to insure compliance with compositional standards, microbiological standards, and various government regulations. A typical food industry laboratory may have a chemistry lab, a raw materials inspection lab, a sensory lab and a microbiology lab. All of these disciplines work together to assure that the food we consume is of the highest quality. After all, it is quality which will bring a customer back again and again.

Esco is an industry leader in manufacturing laboratory equipment suitable for Food QA/Food Safety use. With Esco, you are assured to be given only the highest quality product.

### Sample Preparation

- Biological Safety Cabinet
- Laminar Flow Cabinet
- Laboratory Centrifuge

### Sample Cultivation/Incubation

- CO<sub>2</sub> Incubator
- Laboratory Shaker

### Sample Analysis

- PCR Thermal cycler
- PCR Cabinet

### Sample Storage and Preservation

- Laboratory Refrigerator and Laboratory Freezer
- Ultra-Low Temperature Freezer

### General Equipment

- Laboratory Oven
- Laboratory Incubator
- Refrigerated Incubator

### Chemical Analysis (QA/QC)

- Ductless Fume Hood
- Laboratory Fume Hood





## Airstream®

### Class II Biological Safety Cabinets

#### Features

- Energy saving DC ECM blower
- Isocide™ antimicrobial powder coating
- H14 filter or ULPA filter with 99.999% efficiency at 0.1 – 0.3 µm selection.
- Large performance envelope
- Ergonomic design
- Low noise
- Easy to clean

#### Introduction

Esco's Biological Safety Cabinet is a primary engineering control which provides user protection against biohazards as the inflow air creates airflow barrier preventing accidental release of biohazards from the cabinet's working area and at the same time provides product protection with the airflow barrier inside the work zone which is on the other hand created by the downflow air.

Esco is a world leader in biological safety cabinets, offering the industry's widest product range, with thousands of installations in leading laboratories in more than 100 countries around the globe. Esco's biological safety cabinets have earned more independent certifications in more countries, in more languages, than any other product, demonstrating our commitment to the industry's best safety and quality.

#### Basic Principle

Ambient air is pulled through front grille to create inflow, without going through the work surface. Inflow is joined by half of the downflow, to create front air curtain that is fine-tuned to create a large performance envelope. The combined air stream travels through the back air column towards the blower. Approximately 1/3 of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining 2/3 of the air is passed through the downflow ULPA filter and into the work area as a vertical laminar flow air to create ISO Class 3 work surface and prevents cross contamination.

Near the work surface, the downflow splits. About half goes to the front grille, and half goes to the rear grille. A small portion enters the side capture zones to prevent dead air corners (small blue arrows). The design was optimized to give large performance envelope, that provides operator and product protection at wide Inflow and Downflow variation from the Nominal point.



NSF / ANSI 49



UL 61010



国家食品药品监督管理局



TÜV NORD, Germany



JIS K3800



EN 12469



SANS 12469



STANDARDS Australia



Green Product

## Airstream® Class II Type A2 Biological Safety Cabinets

The World's Most Energy-Efficient, Quiet, and Compact Biosafety Cabinet

Aside from providing protection for you and your environment, Airstream® Class II biological safety cabinet provides protection for your microbiological samples.

**We understand your BSC requirements.**

Airstream® offers the most complete Class II cabinet range, with 9 models to choose from.



*Model AC2-4E8*



*Model AC2-4D8*



*Model AC2-4G8*



*Model AC2-4S8*



*Model AC2-4S9-NS*



*Model AR2-4S9*  
(Available only for USA)



*Model AC2-4E8-TU*



*Model AC2-4S8-TU*



*Model AC2-4K8*  
(Available only for Australia)

## OPTIONS AND ACCESSORIES



**Support Stands**

- Fixed height, with levelling feet or casters
- Telescoping height, with levelling feet or casters
- Electronic adjustable height, with levelling feet or casters



**Electrical Outlet**

- European/ Worldwide Style, available in Type C, D, E, F, G, H, I
- North American style



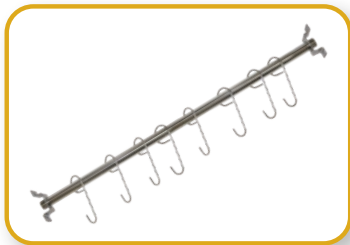
**Germicidal UV Lamp**

- Emission of 253.7 nanometers for most efficient decontamination
- Lamp is positioned away from operator's line-of-sight for safety and proper exposure to interior surfaces



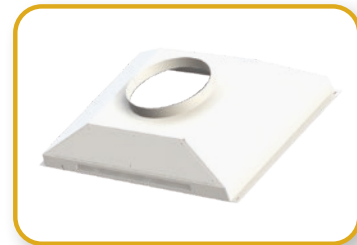
**Service Fixtures**

- European/ Worldwide style
- North American style
- Electronic adjustable height, with levelling feet or casters



**IV Bars with hooks**

- Stainless steel construction, max Load 6 Kg (13 lbs)
- Available for all standard Esco cabinets



**Exhaust Accessories**

- Air-tight damper and thimble exhaust collar
- SEAS (Sentinel Exhaust Alarm System)\*
- Anti-blow back valve
- Tri-safe exhaust collar with alarm



**Ergonomic Foot Rest**

- Angled, helps maintain proper posture
- Easily adjustable from 3" to 11" in 1" increment, 20" wide
- Anti-skid coating, chemical-resistant finish



**Ergonomic Lab Chair**

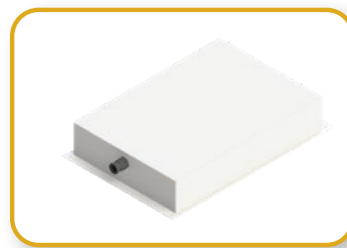
- Laboratory-grade construction
- Alcohol-resistant PVC materials
- Adjustable height 395-490 mm (15.6"-19.3")





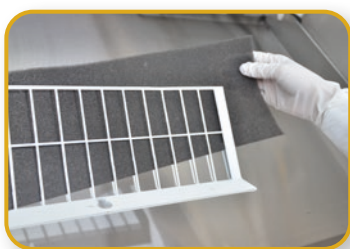
**PVC Arm Rest**

- Chemically treated, improves operator comfort, easy to clean



**VHP Port**

- VHP Out Top Box for Cabinet with or without exhaust collar installed



**Pre-filter**

- Pre-filter on paper catch



**Formalin Vaporizer**

- Dependable construction and innovative design
- Specifically designed for safety cabinet decontamination with automatic control

\* Type A Biological Safety Cabinets with thimble exhaust collar NOT equipped with alarm system can no longer be certified by an NSF-Accredited certifier.

## Other Accessories

Accessories	Description
Decontamination bag	<ul style="list-style-type: none"> <li>• Plastic decontamination bag for formalin decontamination on all BSC</li> </ul>
Port	<ul style="list-style-type: none"> <li>• Airtight cable port, installed on right side wall</li> <li>• Holds 1 to 4 cables</li> </ul>
Microscope Viewing Pouch	<ul style="list-style-type: none"> <li>• Factory-installed</li> <li>• Mounting and viewing pouch integrated into sash</li> </ul>
IQ/OQ	<ul style="list-style-type: none"> <li>• Installation Qualification and Operational Qualification Protocol</li> </ul>



# Airstream® Gen 3 Laminar Flow Cabinets

## Features

- Energy saving DC ECM Blower
- Isocide™ antimicrobial powder coating
- ULPA Filter with >99.999% efficiency at 0.1 – 0.3 µm
- Low noise
- Sentinel™ Gold Microprocessor Control System
- Recessed central work tray to contain spills
- Ergonomic design



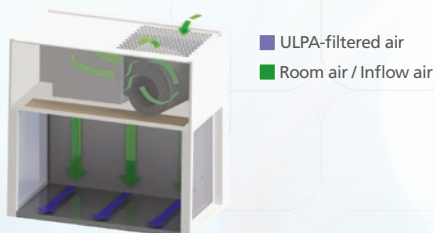
## Introduction

Esco laminar flow cabinets are the premium selection for the discerning researcher, offering a combination of value, high quality construction, low operating noise levels, and a wide product range to suit all budgets from the industry leader. Laminar flow cabinets are used in applications where there is no generation of biohazardous materials, hence operator protection is not required.

## Basic Principle

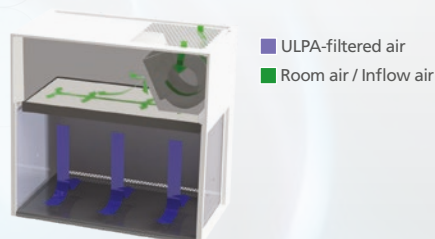
### Airstream® Horizontal Laminar Flow Stainless Steel Side Wall Version

- Room air is taken in from the top of the cabinet through a disposable pre-filter with 85% arrestance; this serves to trap larger particles and increase the life of the main filter.
- Air is forced evenly across the ULPA/H14 filter(s); the result is a stream of clean laminar air within the workzone of the cabinet; this dilutes and flushes all airborne contaminants from the interior.
- A nominal filter face velocity of 0.45 m/s or 90 fpm ensures that there is a sufficient number of air changes within the enclosed area of the cabinet to maintain cleanliness.
- The purified air travels across the internal work zone of the cabinet in a horizontal, unidirectional stream and leaves the main work chamber across the entire open front of the cabinet.



### Airstream® Vertical Laminar Flow Stainless Steel Side Wall Version

- Room air is taken in from the top of the cabinet through a disposable pre-filter with 85% arrestance; this serves to trap larger particles and increase the life of the main filter.
- Air is forced evenly across the ULPA/H14 filter(s); the result is a stream of clean laminar air within the workzone of the cabinet; this dilutes and flushes all airborne contaminants from the interior.
- A nominal filter face velocity of 0.45 m/s or 90 fpm ensures that there is a sufficient number of air changes within the enclosed area of the cabinet to maintain cleanliness.
- The purified air travels across the working zone of the cabinet in a vertical, unidirectional stream and leaves the main work chamber across the entire open front of the cabinet and through Auto-Purge™ slots at the back wall of the work zone which are designed to eliminate air turbulence and the possibility of dead air corners in the work zone.



## Food and Beverage Industry

## Airstream® Gen 3 Laminar Flow Cabinets

The Leading Solution for Research Laboratories

Esco Airstream® Laminar Flow Cabinets are designed to provide superior product protection for your samples in research laboratories by preventing the entry of room and airborne contaminants. They are built with the latest laminar flow technology and innovation, and offers a wide range of options for user preferences.

### Horizontal Laminar Flow Cabinets



LHG-4\_G-F\_

LHS-4\_G-F\_

### Vertical Laminar Flow Cabinets



LVS-4\_G-S\_  
(Sliding Sash)

LVS-4\_G-F\_  
(Fixed Sash)

LVG-4\_G-F\_  
(Fixed Sash)

LVG-4\_G-S\_  
(Sliding Sash)

## OPTIONS AND ACCESSORIES



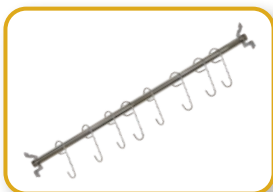
### Germicidal UV Lamp

- Emission of 253.7 nanometers for most efficient decontamination
- Lamp is positioned away from operator's line-of-sight for safety and proper exposure to interior surfaces



### Electrical Outlet

- European/ Worldwide Style, available in Type C, D, E, F, G, H, I
- North American style



### IV Bars with Hooks

- Stainless steel construction, max Load 6 Kg (13 lbs)
- Available for all standard Esco cabinets



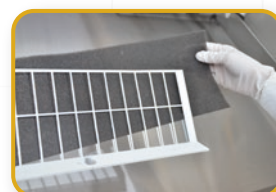
### PVC Arm Rest

- Chemically treated, improves operator comfort, easy to clean



### Support Stands

- Fixed height, with levelling feet or casters
- Telescoping height, with levelling feet or casters
- Electronic adjustable height, with levelling feet or casters



### Pre-filter

- Pre-filter on paper catch



# Versati™ Centrifuge

## Features

- Distinct control panel and intelligent Versati™ Microprocessor Control System
- Genuine-Protect™ safety lid lock
- V-balance™ weight imbalance protection
- Smartdrive™ rotor auto recognition
- Diverse choices of rotor (swing-out and fixed-angle rotors)
- Temperature range from -20°C to 40°C with 1°C increments (Refrigerated models only)
- Maintenance-free, brushless motor
- CFC-free refrigeration system
- Emergency switch
- Storage of up to 99 programs



## Introduction

Versati™ centrifuges are equipped with maintenance-free motors, robust mechanism, and intelligent Versati™ microprocessor control system that offers extreme reliability and safety. Versati™ has a strong versatility covering micro centrifuge and low-to-high speed general-purpose centrifuge with variety of rotors, adapters, and accessories to fit all your application needs and suit various consumable tubes, strips, and plates.



## Versatile and Outstanding Features

- **Compact Design** - Small footprint and curved design ensure comfortable loading and unloading of samples and cleaning of the unit.
- **Incredible Flexibility** - Wide choice of easy and interchangeable rotors meets all your application needs. Huge selection of adapters allows centrifugation of practically all commercially available tubes.
- **High Temperature Ramp Rate** - Compressor in Versati™ centrifuges has strong power which allows fast cooling rate. The time cost can be as low as 10 mins when temperature decreases from room temperature to 4°C.
- **Fast Pre-cooling** - Versati™ centrifuges provide fast pre-cooling function that is maintained even when centrifuge is not in use. This feature is useful if the samples are temperature-sensitive.
- **Overspeed Protection** - Equipped with speed detection system, Versati™ centrifuges show the actual speed on the screen. Once the speed exceeds the safety range, the alarm will sound off and rotation is halted.
- **Over Temperature Protection** - The unit will stop running once an over temperature is detected in the chamber, rotor, and frequency converter. This provides comprehensive protection which prolong the life span of Versati™ centrifuges.
- **Aerosol-tight and Autoclavable** - High-quality, extremely robust aluminum lid of rotor allows aerosol-tight centrifugation. Rotor, buckets, lids, and adapters are autoclavable (20 min, 121°C) to ensure sterility of the centrifuge environment.

## Food and Beverage Industry

## General Accessories for Versati™ Micro Centrifuge



**Aerosol-tight Fixed-angle Rotor**

This TÜV Nord Certified Bioseal Rotor is used for 1.5/2.0 ml tubes. Adapters are used to run 0.5 ml and 2.0 ml / 0.4 ml PCR tubes.



**Fixed-angle Rotor**

Aluminum rotor used for 5 ml conical tubes. Adapters are also used in this rotor to run 1-1.8 ml Cryo tubes, and 1.5 ml / 2.0 ml PCR tubes.



**Fixed-angle Rotor for PCR Strips**

Rotor made of Polypropylene used for 4 x 8 (0.2 ml) PCR strips.

*Note: There are a total of 6 rotor options for MCR, 7 rotor options for MCV, and 5 available adapters for both models.*

## General Accessories for Versati™ Tabletop Centrifuge



**Swing-bucket Rotor**

Aluminum swing-bucket rotor with circular flat-bottom buckets made of polypropylene can hold up to 4 x 250 ml tubes. It has flexible adapters ideal for medical and biotechnology laboratories.



**Microtiter Plate Rotor**

This microtiter plate rotor has a maximum capacity of up to 6 plates. This can also accommodate deep well plate, culture plate, microtest/ terasaki plate, microsonic system, and PCR well plate.



**Fixed-angle Rotor**

The maximum capacity of this fixed-angle rotor is 6 x 250 ml. It can also run tubes ranging from 1.5/2.0 ml to 50 ml using suitable adapters.



**Aerosol-tight Fixed-angle Rotor**

This TÜV Nord Certified Bioseal Rotor used for 1.5/2.0 ml tubes is also available in tabletop centrifuge models. Adapters are used to run 0.5 ml and 2.0 ml / 0.4 ml PCR tubes.

*Note: There are a total of 12 rotor options for TCV / TCR and 47 available adapters for both models.*

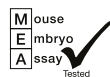


# CelCulture® CO<sub>2</sub> Incubator

## Features

- VivoCell™ precise parameter control
- Infrared (IR) CO<sub>2</sub> sensor
- VentiFlow™ forced convection
- SteriSafe™ ULPA filtration system
- SwiftCon™ 90°C moist heat decontamination cycle
- Isocide™ antimicrobial coating
- Gas inlet filter
- Intuitive user interface with data and event logging

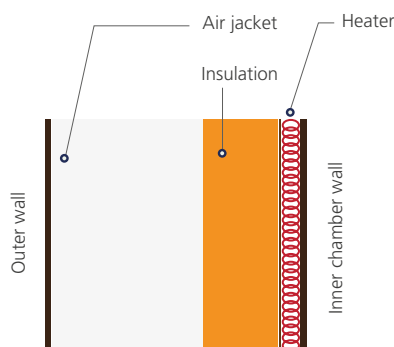
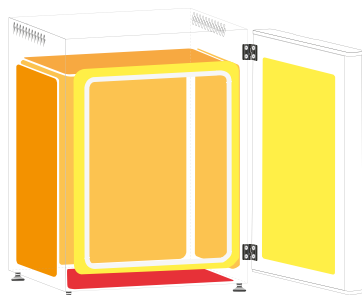
Available sizes: 50, 170, and 240 L



## Introduction

CO<sub>2</sub> incubators are widely used in scientific research to grow and maintain cell cultures. Sleek, reliable and intuitive, Esco CelCulture® CO<sub>2</sub> incubators provide all-rounded sample protection that brings your scientific dreams one step closer to reality.

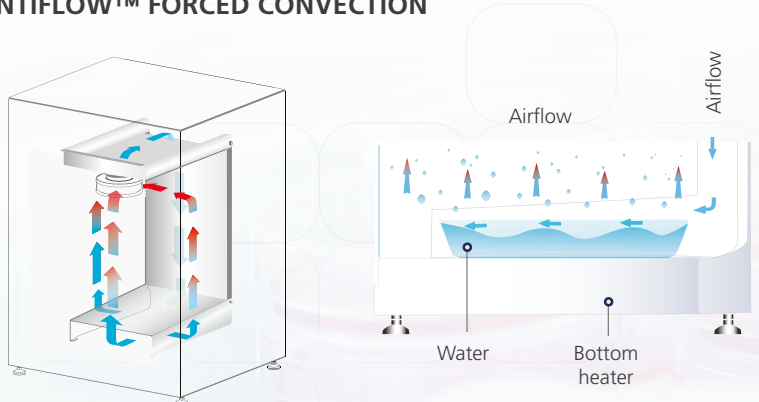
### DIRECT HEAT AND AIR JACKET



- 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 CO<sub>2</sub>, humidity and temperature uniformity.
- Filtered air circulates across water pan to accelerate humidifying process.

## Food and Beverage Industry

## OPTIONS AND ACCESSORIES



### 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.



### CO<sub>2</sub> Backup

This option allows two tanks of CO<sub>2</sub> 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.



### 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<sub>2</sub> / O<sub>2</sub> 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.



### Sealed Inner Door Kit with 2 glass doors (50L) / Sealed Inner Door Kit with 4 glass doors (170L) Sealed Inner Door Kit with 4 glass doors (240L) / Sealed Inner Door Kit with 6 glass doors (240L)

CelCulture® CO<sub>2</sub> 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.



### N<sub>2</sub> Back-up

This option allows two tanks of N<sub>2</sub> 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.



### Floor Stand 200 mm (8.0") With Adjustable Feet (240 L)

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.



### 2-Stage Gas Regulator for CO<sub>2</sub>/N<sub>2</sub>

CO<sub>2</sub> and N<sub>2</sub> 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.



### Extra Shelf (Stainless Steel) for Standard Stainless Steel Chamber

Each CelCulture® CO<sub>2</sub> 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.



### 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.



### Electronic CO<sub>2</sub> Analyzer, For CO<sub>2</sub> / Temp Measurement Electronic CO<sub>2</sub> + O<sub>2</sub> Analyzer, For CO<sub>2</sub> / O<sub>2</sub> / Temp Measurement Electronic CO<sub>2</sub> + O<sub>2</sub> + RH Analyzer, For CO<sub>2</sub> / O<sub>2</sub> / RH / Temp Measurement

The electronic analyzer allows the measurement of CO<sub>2</sub> concentration, O<sub>2</sub> concentration, relative humidity and temperature (temperature probe already included).



### 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.



# OrbiCult™ Laboratory Shaker

## Features

- Heavy-duty and high-speed application
- Reduce maintenance
- Versatile for microorganism cultivation
- Easy-to-use design
- Audible and visible alarms
- World class compressor with low energy consumption
- External surfaces are powder coated with Esco Isocide™



CE

## Introduction

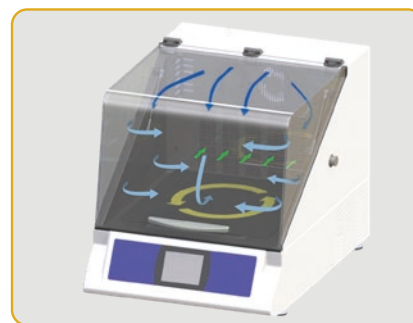
Esco offers laboratory shakers that fit all your needs. Cutting Edge Technologies, Robust Mechanism, Flexible Accessories, Intuitive Interface and Environment-friendly Design – making sure that Esco laboratory shakers deliver outstanding features and excellent performance year after year.

## Airflow Circulation

- Two circulating fans located on top of the perforated panel, disperse and distribute the air inside the chamber
- Perforation located below the circulating fan absorbs the air to recirculate the air inside the chamber
- Platform performs counterclockwise rotation based on the motor drive motion
- Air temperature changes during suction process

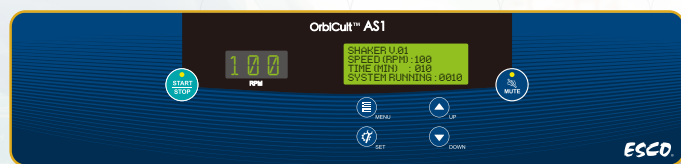
- For refrigerated unit, evaporator located behind the perforated panel will cool down the air

- For non-refrigerated unit, heater located below the circulating fan will heat up the air

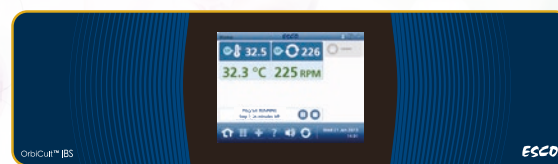


- Discharge Air
- Circulating Air
- Suction Air
- Motor Drive Rotation

## Digital LED Controller (for AS1 model)

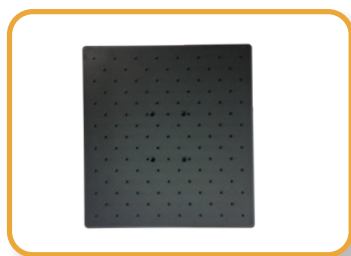


## SmarTouch™ Controller (for IBS model)





## OPTIONS AND ACCESSORIES



### Universal Platform

Have standard holes pattern that can fit any flask clamps and test tube rack. All multiple flask clamps and labware holders are shipped separately and installed by the end user.



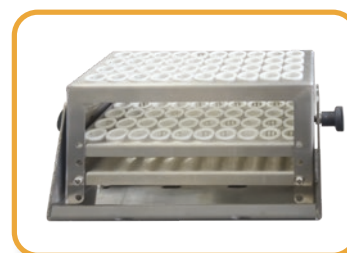
### Dedicated Platform

Platforms have a customized pattern to optimize the number of a particular size of flask clamp on a platform. Dedicated platforms are pre-installed with the flask clamps.



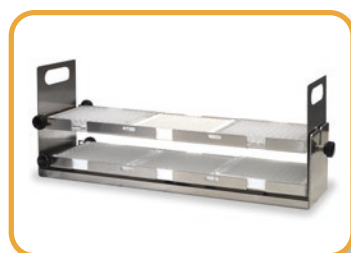
### Flask Clamps

Single-piece stainless steel clamps that provide enough strength and security to hold flasks.



### Test Tube Rack

Stainless steel rack that stabilizes and holds the test tubes.



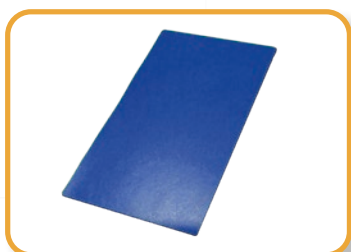
### Microplate Holder

Double layer racks that hold up to six standard deep well plates.



### Utility Carrier

Made of stainless steel that holds different glassware in between of adjustable stainless steel bars.



### Sticky Mats

Allows the user to place the flask directly on the mat without the use of a clamp. Sticky mats are very convenient if the user desires to rotate at less than 350 rpm. This can be ordered separately and attach on Universal Platform.



### Gas Manifold

Contain 12 gas ports that add versatility for aerobic and anaerobic cell cultivation.

The IBS is available with a 12-port gas manifold option to allow operator to supply gas directly to the culture medium of 12 individual flasks.



# AERIS™

## Conventional PCR Thermal Cycler

### Features

- Multi-block capability
- Adjustable hot lid temperature and ramp rate
- Excellent temperature accuracy and uniformity
- Can perform standalone operation
- Software allows variety of PCR conditions, can control up to 30 units via one PC
- Password protection for secure system access

### Introduction

Esco offers a choice of Conventional Thermal Cycler designed to meet critical requirements for all kinds of PCR processes, such as, Gradient PCR, Touch down PCR, High throughput PCR, in situ PCR and so on, using a variety of PCR tubes, strips, plates and slides.

The AERIS™ thermal cycler offers five interchangeable blocks designed to meet critical requirements for different applications. It comes with an intuitive touch screen to deliver easy-to-use programming; AeonStar™ Peltier is qualified to deliver outstanding and precise performance and unique IsoHeat™ temperature control technology delivering high heating and cooling rates with excellent temperature accuracy and uniformity. SmartDrive™ automatic block recognition increases user convenience. AERISLine™ software enables the remote control of up to 30 individual units via one PC.

## OPTION: Choose the appropriate block for your PCR application

Five Interchangeable Blocks



### AERIS-BG096 G-96 WELL

**Applicable consumables:** 0.2 ml tube, 96-well microplate, 12 x 8 strips, 8 x 12 strips



### AERIS-BG384 G-384 WELL

**Applicable consumables:** 384-well microplate



### AERIS-B4830 48 x 0.2 ml + 30 x 0.5 ml WELL

**Applicable consumables:** 0.2 ml tubes, 0.5 ml tubes, 4 x 12 strips



### AERIS-B4076 4 IN SITU SLIDES

*For In Situ PCR*

**Applicable consumables:** 4 slides *in situ*



### AERIS-BD048 D-48 X 0.2 ml

Two in one! Two independent experiments may be carried out at the same time.

**Applicable consumables:** 0.2 ml tubes, 6 x 8 strips

## Food and Beverage Industry



## Swift™ MiniPro®

### Conventional PCR Thermal Cycler

#### Features

- **Superior Performance**
  - Excellent Temperature Uniformity
  - High Temperature Precision
  - Outstanding Ramp Rate
- **Convenience**
  - Compact Footprint
  - Convenient Setup, Fast Run
  - Friendly Interface
  - Adjustable Hot Lid
  - Adjustable Ramp Rate
- **Stability**

#### Introduction

The Esco Swift™ MiniPro® thermal cycler is a low cost personal thermal cycler with a compact footprint, suitable for a variety of critical experimental applications, such as Touch Down PCR, Time Release PCR and others. The Swift™ MiniPro® thermal cycler uses advanced peltier technology to achieve precise temperature control and fast ramp rates with minimal over- and under-shoot for process speed and accuracy.

### OPTION: Choose the type of block that comes with the main unit depending on your sample requirements



**Block 1**  
24 x 0.2 ml

**Applicable consumables:** 0.2 ml tubes, 3 x 8 strips



**Block 1**  
18 x 0.5 ml

**Applicable consumables:** 0.5 ml tubes



## Airstream®

### Polymerase Chain Reaction Cabinets

#### Features

- Pre-filter and main HEPA filter with a typical efficiency of >99.99% at 0.3 microns
- Protection against cross-contamination within the main chamber
- Built-in UV lamp with timer
- Sentinel™ Silver Microprocessor controller
- Isocide™ Antimicrobial Powder coating



**ISOCIDE™**

#### Introduction

An ideal PCR laboratory should consist of three areas, each isolated from each other. Reagents should be prepared in the reagent preparation area and transferred to the sample preparation area, through a pass box or inside closed containers. After preparation of the final reaction mix, the tubes should be transferred to the amplification area, again through a pass box or in a closed container. The thermal cycler where the PCR amplification takes place is located in the amplification area. The Airstream® PCR cabinet provides DNA and RNA-contaminant free environment through the use of HEPA filters and UV decontamination system. The cabinet can be installed in the reagent preparation area of the PCR laboratory.

#### More Benefits

##### Easy-to-Use

- Timer is easy to adjust
- UV hour meter monitors bulb life
- Automatic decontamination for 0.9 m (3') and 1.2 m (4') models
  - Close sash: UV turns on automatically for decontamination
  - Open sash: airflow activates automatically

##### Safety

- UV interlock prevents UV exposure
- UL recognized electrical components
- UV filtering sash and side walls

##### Two-in-One

Can be used as a regular laminar flow cabinet and UV can also be used for decontamination of regular lab items.

##### Ergonomics

- Low noise
- Angled front
- Glass sides
- Curved work surface front edge
- Powder-coated rear wall eliminates reflections
- Vertical airflow minimizes direct airflow towards operator, causing dry eyes

## Food and Beverage Industry



# Streamline®

## Polymerase Chain Reaction Cabinets

### Features

- HEPA-filtered Laminar Flow
- ISO Class 3 Work zone
- Equipped with German-made ebm-papst® motors with external rotor design
- Isocide™ Antimicrobial Powder coating
- UV decontamination technology
- 0.6 m in height (2')

### Introduction

The Streamline® Polymerase Chain Reaction (PCR) Cabinet provides a controlled environment for performing PCR amplification experiments. Through HEPA-filtered airflow and UV decontamination of surfaces, DNA and RNA contamination of PCR reactions are reduced ensuring the validity of the results.

### OPTIONS AND ACCESSORIES (for both Streamline® and Airstream®)



#### Support Stand with Caster Wheels (SPC)

- For 0.6 m (2'), 0.9 m (3') and 1.2 m (4') models
- Available in two standard heights: 711mm (28.0") or 860mm (34.0")
- Durable polyurethane caster wheels with 360 degree horizontal rotation
- Total brake system on front wheels
- Maximum weight supported: 600 Kg (1323 lbs)



#### Support Stand with Leveling Feet (SAL)

- For 0.6 m (2'), 0.9 m (3') and 1.2 m (4') models
- Available in two standard sizes: 737 mm (29.0") or 864 mm (34.0"), ±38.1 mm (1.5")
- Maximum weight supported: 500 Kg (1,100 lbs)



#### Telescoping Support Stands with Leveling Feet (STL)

- For 0.9 m (3') and 1.2 m (4') models
- Allow manual adjustment of the product height. The cabinet must be removed from a Telescoping Support Stand prior to adjustments
- Adjustable height range: 660-940 mm (26.0"-37.0"), adjustable in 25.4 mm (1.0") increments
- White oven-baked epoxy powder-coated finish
- Maximum weight supported: 600 Kg (1323 lbs)



# HP Series

## Laboratory Refrigerators and Freezers

### Features

- Forced-air design
- Intelligent automatic defrost
- Excellent temperature uniformity
- Door lock
- Triple-pane glass doors for refrigerators
- Isocide™ antimicrobial powder coating
- High-quality stainless-steel interior for sample protection
- Internal LED lighting that saves up 70% power with less heat exposure
- Standard wheels for easy location or movement
- Audible and visual alarms

**ISOCIDE™**



CE



### Introduction

Laboratory professionals invest time, money and hard work on irreplaceable samples. A cold storage equipment can store thousands to millions of dollars' worth of valuable products. Once proper storage requirements are not met, these precious samples may be put at risk and eventually lead to sample spoilage and wastage. That is why, it is important to carefully choose the cold storage that can assure optimal product protection.

Esco HP Series is designed for laboratory use offering superior product protection with long term reliability and exceptional product quality. When superior levels of cold storage performance, reliability, and flexibility are needed, the Esco HP series of Laboratory Refrigerators and Freezers is the best choice—it provides a high-performance protection for your precious samples! Laboratory Refrigerators are generally used for storing non-volatile reagents and non-volatile biological specimens.



HR1-140S-      HR1-400T-  
+2°C to +15°C



HF2-400T-      HF2-1500S-  
(HF2): -10°C to -25°C  
(HF3): -20°C to -40°C



HC6-400S-      HC6-700S-  
Refrigerator: +2°C to +15°C  
Freezer: -10°C to -24°C

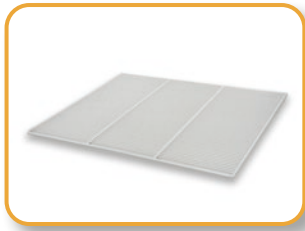
Laboratory Refrigerators

Laboratory Freezers

Laboratory Combination Refrigerators and Freezers

### Food and Beverage Industry

## OPTIONS AND ACCESSORIES



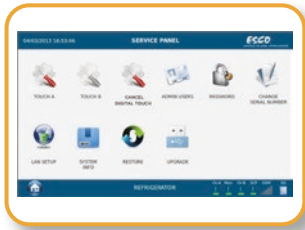
### Shelf Kits (SK\_)

Atoxic, plastic-coated steel, supported by anti-tilt clips. It is for additional space inside your chamber where you can place your samples. It also provides a good support for your samples to prevent damage and maintain organization of samples.



### Drawer Kits (DK\_)

A drawer extractible on telescopic slides, adjustable in height, bottom made of painted steel, beehive structure type, supplied with adjustable dividers made of polypropylene, front is fitted with an ergonomic aluminum handle, for the storage of samples in a more convenient and organized way.



### Digital Monitor (DM\_)

An independent visual/acoustic alarm and recording system, with an accuracy of 0.1°C due to the PT100 probe used for temperature detection. It will take over alarm failures, together with standard rechargeable batteries that record event such as unauthorized personnel.



### Access Port (AP\_)

A 15 mm or 35 mm diameter hole that will be placed at the back of the unit, closed with a white plastic cap, used for the access of additional probes inside the chamber.



### Basket Kit (BK1)

Made of stainless steel that provides an anti-corrosion environment for your samples. It is mounted on anti-tilt side slides and can be glided outside the chamber for the purpose of easy access to samples.



### Chart Recorder

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 chamber temperature.

Model	Item Code	Description
SK1	1330063	Shelf Kits for HR1-140, HF2-140 (Standard and Touchscreen models)
SK2	1330064	Shelf Kits for HR1-400, HF2-400 and HC6-400 (Standard and Touchscreen models)
SK3	1330065	Shelf Kits for HR1-700, HF2-700, HF3-700, HC6-700, HR1-1500 and HF2-1500 (Standard and Touchscreen models)
SK4	1330066	Shelf Kits for HF3-400 (Standard and Touchscreen models)
DK1	1330067	Drawer Kits for HR1-140, HF2-140 (Standard and Touchscreen models)
DK2	1330068	Drawer Kits for HF2-400, HR1-400 and HC6-400 (Standard and Touchscreen models)
DK3	1330069	Drawer Kits for HR1-1500, HF2-1500, HR1-700, HF2-700 and HC6 700 (Standard and Touchscreen models)
DK4	1330070	Drawer Kits for HF3-400 (Standard and Touchscreen models)
DK5	1330071	Drawer Kits for HF3-700 (Standard and Touchscreen models)
DM1	1330072	Digital Monitor for single chamber models for Touchscreen models only
DM2	1330073	Digital Monitor for dual chamber models for Touchscreen models only
AP15	1330074	15 mm Access Port for all models (Standard and Touchscreen models)
AP35	1330075	35 mm Access Port for all models (Standard and Touchscreen models)
BK1	1330076	Stainless Steel Basket Kit for HR1-700, HR1-1500, HF2-700, HF2-1500, HF3-700 and HC6-700S (Standard and Touchscreen models)
Backup Battery	1330127	Standard backup battery for acoustic and visual alarm during power failure (Standard and Touchscreen models)
4-20 mA	1330129	4-20 mA Output (Touchscreen models)
GSM	1330216	GSM Module (Touchscreen models)
Chart Recorder	1330185	Chart Recorder for all models (Standard and Touchscreen models)
IQQQ	9010179	Installation Qualification Operation Qualification for all models



# Lexicon® II

## Ultra-low Temperature Freezers

### Features

- Temperature range: -50°C to -86°C
- Simple and intuitive controller
- Fast pull down time
- Effective cooling technology
- Superior insulation system
- Environment-friendly HFC refrigerants
- Excellent uniformity
- Extended warm-up time during a power failure
- Isocide™ antimicrobial powder coating
- Audible and visual alarms

Available sizes: 363, 480, 597, and 714 L



### Introduction

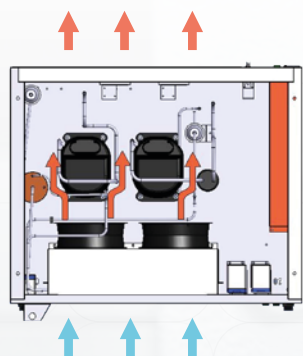
Cold storage equipment plays a very important role in a researcher's life work. Most of the studies conducted by each researcher relies on the sample storage in maintaining the integrity and quality of their precious samples and other biological products. Protection of your essential and irreplaceable samples is a critical factor for ensuring viable results. For some studies, samples are collected and sent to the biorepository for long-term storage.

Ultra-Low Temperature (ULT) Freezers are widely used in scientific research for long-term storage of samples. As ULT freezers are often operated at -80°C continuously for years, reliability is of paramount importance to the researchers. Constructed from high-quality proven components with energy-efficient refrigeration design, Esco Lexicon® II ULT freezers provide top-notch protection that can withstand the test of time to guarantee the integrity of your samples.

### Silver Controller



### Gold Controller



### CASCADE COMPRESSOR

- 2-Stage cascade refrigeration system.
- Two fans are employed to draw consistent airflow from the front to the back of the freezer to cool the condenser.
- Two 1-hp hermetic compressors operated at a low speed for longer life.
- The compressors sit directly behind the fans and are air-cooled for better operating conditions.

### Food and Beverage Industry



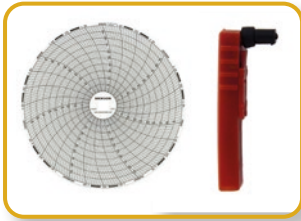
## OPTIONS AND ACCESSORIES



Chart Recorder Kit



LCO<sub>2</sub> Back-up System



Temperature Chart and Pen Replacements for 6" Chart Recorder



Ice Scraper



Standard Cardboard 2-inch and 3-inch Boxes



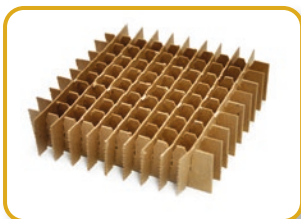
Cryo Safety Gloves



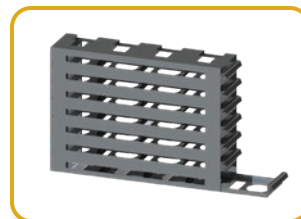
Additional Shelving Kit



Modifiable Clip rack for Lexicon® II



Standard Cardboard 49-cell, 64-cell, 81-cell, and 100-cell Dividers



2-inch and 3-inch Drawer rack for Lexicon® II



SMS Module System (for Gold controller)



PROtect Gen 2 - Independent and Redundant Monitoring System



# Isotherm<sup>®</sup>

## Forced Convection Laboratory Incubators

### Features

- Ventiflow™ Ventilation System – forced air convection design
- Pre-heat Chamber Technology – 4-zone heated air jacket
- SmartSense™ Microprocessor PID Control Technology
- Isocide™ antimicrobial powder coating
- Door keylock
- Multiple redundant over-temperature protection system
- Superior insulation

Available sizes: 32, 54, 110, 170, and 240 L

**ISOCIDE™**



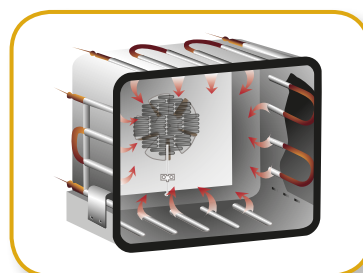
### Introduction

Esco Isotherm<sup>®</sup> world class laboratory incubators are used for thermal convection applications such as bacteria culture and Coliform determination among many others. With ergonomic design, microprocessor PID controls, 4-zone heated air jacket and precisely tuned and tested ventilation and insulation package, Esco Isotherm<sup>®</sup> is your reliable incubator for universal application.



#### Ventiflow™ Ventilation System

- Forced convection design produces faster temperature response rates, improves uniformity and reduces fluctuation
- Low energy consumption and low noise level



#### Pre-Heat Chamber Technology

- 4-zone heated air jacket ensures stable heating and maximum temperature uniformity in the chamber
- 2-point door seal and eccentric hinge ensures maximum gasket



#### Multiple redundant over-temperature protection system

- Over-all temperature protection meets DIN 12880 Class 3.1 standards
- All electrical components are UL recognized



#### SmartSense™ Microprocessor PID Control Technology

- Connected to an instrument-grade precision platinum temperature probe
- Ensures fast ramp time. Prevents overshoot and ensures stable temperature once set point is achieved

## Food and Beverage Industry



# Isotherm®

## Refrigerated Incubators

### Features

- Ventiflow™ Ventilation System – forced air convection design
- Pre-heat Chamber Technology – 4-zone heated air jacket
- SmartSense™ Microprocessor PID Control Technology
- Isocide™ antimicrobial powder coating
- Auto-defrost system
- German-made EBM papst fan

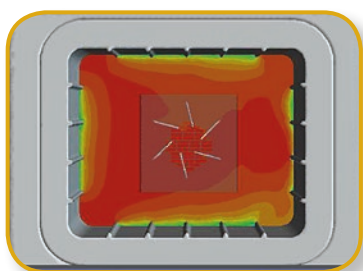
Available sizes: 110, 170, and 240 L

**ISOCIDE™**



### Introduction

The Esco Isotherm® world class laboratory incubators are used for applications such as BOD determination and environmental research among many others. With ergonomic design, microprocessor PID controls, 4-zone heated air jacket and precisely tuned and tested ventilation and insulation package, Esco Isotherm® is your reliable refrigerated incubator for universal application.



#### Pre-Heat Chamber Technology

- Connected to an instrument-grade precision platinum temperature probe
- Ensures fast ramp time. Prevents overshoot and ensures stable temperature once set point is achieved



#### UV Disinfection

- Can be manually or automatically operated



#### Auto-Defrost System

- Auto-heating activates and continues for a predetermined time during operation
- Auto-defrosting during operation and activates regularly



#### German-made EBM Papst Fan

- Permanently lubricated and maintenance-free for uniform air circulation



# Isotherm®

## Forced Convection Laboratory Oven

### Features

- Ventiflow™ Ventilation System – forced air convection design
- Pre-heat Chamber Technology – 4-zone heated air jacket
- SmartSense™ Microprocessor PID Control Technology
- Isocide™ antimicrobial powder coating
- Door keylock
- Multiple redundant over-temperature protection system
- Superior insulation

Available sizes: 32, 54, 110, 170, and 240 L

**ISOCIDE™**



CE

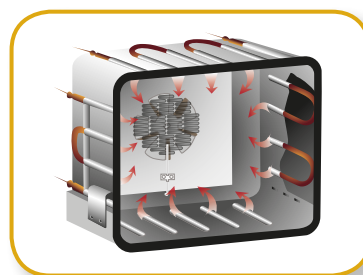
### Introduction

The Esco Isotherm® world class laboratory ovens are used for high-forced volume thermal convection applications such as drying and curing among many others. With ergonomic design, microprocessor PID controls, 4-zone heated air jacket and precisely tuned and tested ventilation and insulation package, Esco Isotherm® is your reliable oven for universal application.



#### Ventiflow™ Ventilation System

- Forced convection design produces faster temperature response rates, improves uniformity and reduces fluctuation
- Low energy consumption and low noise level



#### Pre-Heat Chamber Technology

- 4-zone heated air jacket ensures stable heating and maximum temperature uniformity in the chamber
- 2-point door seal and eccentric hinge ensures maximum gasket



#### Multiple redundant over-temperature protection system

- Over-all temperature protection meets DIN 12880 Class 3.1 standards
- All electrical components are UL recognized



#### SmartSense™ Microprocessor PID Control Technology

- Connected to an instrument-grade precision platinum temperature probe
- Ensures fast ramp time. Prevents overshoot and ensures stable temperature once set point is achieved

### Food and Beverage Industry

## OPTIONS AND ACCESSORIES (for Isotherm® products)



### Wall Bracket (only for 32 L and 54 L chambers)

- Accommodates desired operating heights



### Reversed Door Swing (Factory-installed)



### Voyager Software Kit

- Esco Voyager is a PC-based software package developed for remote monitoring, datalogging and programming/device configuration of Esco controlled environment laboratory equipment



### Support Stands Fixed Height at 720 mm (28.3")



### Additional Shelf

- Two shelves are included for 32 L, 54 L, 110 L, 170 L and 240 L models as standard. Additional shelves may be ordered.



### Optional Stainless Steel Exterior

- Robust construction and corrosion-resistant surface that meets pharmaceutical and clinical laboratory requirements



# Ascent™ Ductless Fume Hoods

## Features

- **“GREEN” solution**
  - Environment-friendly
  - Does not discharge toxic gases to the environment
  - Saves energy, and reduces total carbon footprint
- **Safe carbon filtration**
  - Compliance to international standards
  - Optional VOC sensor system to detect filter saturation
  - FiltraCheck™ service to qualify your application’s suitability for a ductless solution
- **Low cost**
  - No ductwork required
  - No exhaust system required
- **Convenience**
  - No installation hassle and portable



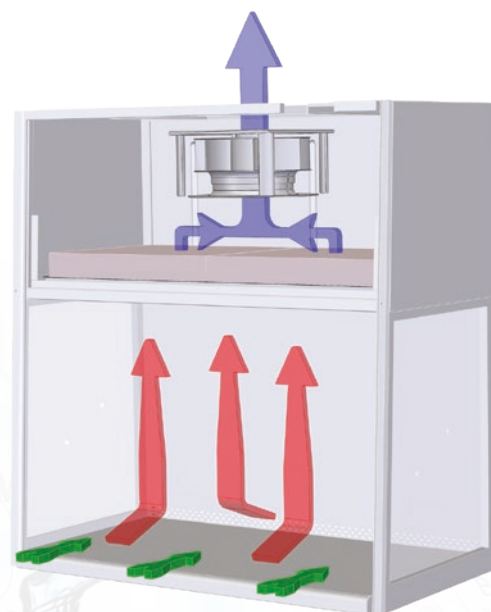
## Introduction

Esco Ascent™ Ductless Fume Hoods provide protection to both laboratory personnel and the environment from toxic fumes and are quickly becoming a viable alternative to conventional fume hoods. Unlike conventional fume hoods, these hoods filter out chemical fumes and recycle air directly back to the laboratory, providing energy savings, personnel and environmental protection, convenience as you do not have to deal with complicated ducting systems, and mobility, since ductless hoods are independent systems which do not require connection to extraction systems.

Available sizes: 3, 4, 5, and 6 ft

## Cabinet Filtration System

- The inflow moves from the ambient environment into the work zone through the hood front opening with an average velocity of 0.4 m/s.
- Negative pressure is maintained within the main chamber of the hood to ensure that no chemical fumes or vapors escape the work zone.
- Air is taken through a pre-filter and activated carbon mounted in the interior of the hood. The carbon filter removes all fumes from the exhaust air stream and filtered clean air is exhausted directly back to the room.



Ascent™ Max Ductless Fume Hood, ADC Models

- Carbon-filtered air
- Unfiltered / potentially contaminated air
- Room air / Inflow air

## OVERVIEW OF MODELS



### Ascent™ Max Series

#### Model: ADC-B

(Standard model)

- Main Filter: Carbon Filter
- Has an option for motorized sash
- Optional VOC sensor
- Available sizes: 2,3,4,5,6 ft.



### Ascent™ Max Series

#### Model: ADC-C

(with Secondary Carbon Filter)

- Main Filter : Carbon Filter  
Secondary: Carbon Filter
- Optional VOC sensor
- Available sizes: 3,4,5,6 ft.



### Ascent™ Max Series

#### Model: ADC-E

(with Secondary HEPA Filter)

- Main Filter : Carbon Filter  
Secondary Filter: HEPA filter
- Optional VOC sensor
- Available sizes: 3,4,5 ft.

## OPTIONS AND ACCESSORIES



Support Stand with  
Caster Wheels



Electrical Outlet



European Style  
Service Fixture



Support Stand with  
Leveling Feet



Swan-neck Faucet



VOC Sensor



Base Cabinet



American Style  
Service Fixture



Carbon Filter



# Frontier® ACELA™ Laboratory Fume Hoods

## Features

- Tri-wall design
- ASHRAE 110-2016 certified
- Low energy-consumption, high performance fume hood
- 5° sloped front sash design
- Superior containment at 0.3 m/s face velocity

Available sizes: 4, 5, 6, and 8 ft



## Introduction

The Esco Frontier® Acela™ Fume Hood is a high performance, low flow fume hood engineered for safety, performance and energy efficiency, all combined in one multi-featured product. Its ability to operate at a reduced face velocity of 0.3 m/s allows for an exhaust volume reductions of up to 58% as compared to a conventional fume hood. This directly translates to more savings for your company.

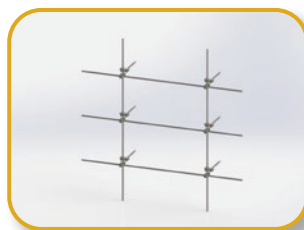
## Optional Accessories:



Base Cabinet (EBA)



Circuit Board Protection



Distillation Grid



Service Fixtures



Scrubber



Worktop



Sentinel™ XL Airflow Alarm



Support Stand (ASL)





# Frontier® DUO™ Laboratory Fume Hoods

## Features

- Dual wall design
- ASHRAE 110-2016 certified
- With black color phenolic resin worktop
- Has service fixtures added: 1 remote-controlled gas fixture and 1 swan-neck faucet
- Ergonomic 8° sloped front sash

Available sizes: 4, 5, 6, and 8 ft



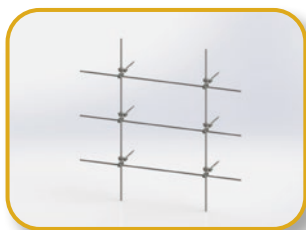
## Introduction

The Esco Frontier® Duo™ Fume Hood is an upgraded version of its predecessors representing design and engineering innovations that are at the forefront of fume hood technology. It has a rugged dual wall construction offering a much robust design that allows service fixtures and electrical outlets to be mounted on both sides of the wall.

## Optional Accessories:



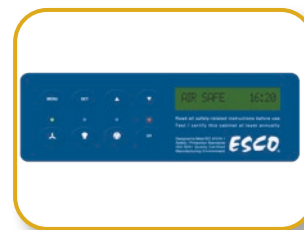
Base Cabinet (EBA)



Distillation Grid



Service Fixtures



Sentinel™ Silver  
Microprocessor



# After-Sales Services

## Parts Availability

Whenever service is needed and parts are required, minimizing downtime is a critical objective. Statistical usage analysis helps Esco to predict parts life, permitting Esco to manage logistics and stage proper inventories around the world. The combination of predictive maintenance, historical data, and geospecific proximity assures our customers that parts and labor are available whenever service is scheduled through the local sales organization.

## Registration, Documentation, and Instruction

Quality control at Esco extends from research and development through engineering, manufacturing, shipment, delivery, and customer feedback. Esco maintains an aggressive program to encourage warranty card registration by mail, email or online submission so that we know where Esco products are located and how they are being used. Rest assured that all information disclosed from warranty registrations will be kept confidential. All Esco products include unique serial numbers for identification. Documentation for all performance tests is archived and maintained for customer reference with all the backup procedures.

## Online Technical Information

Site preparation instructions are useful before product arrival and installation. Installation and start-up manuals, operation manuals and quick reference guides are available anytime from the Esco resources online.

## NSF International Accreditations and TÜV Nord Certification

The National Sanitation Foundation (NSF) International is an independent, non-profit organization that provides standards development, product certification, auditing, education, and risk management for public health and the environment.

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

TÜV NORD GS certification has been helping to minimize risks and hence ensure maximum safety and quality. TÜV NORD's recognised certifications stand worldwide for an exemplary level of safety and make a valuable contribution to the continuing improvement of products and processes.

Esco has passed the stringent requirements during testing and inspection and has given the TÜV NORD approval mark that confirms compliance of the product with the provisions of the Product and Equipment Safety Act as regards health and safety.

In line with Esco's commitment in providing world-class services worldwide, Esco as a manufacturer feels the impact of providing the best after-sales service through our competent service engineers. Thus, Esco is the only manufacturer in the world with the most number of NSF accredited certifiers across the globe. In addition, Esco enhances the capacity to the highest quality of service by providing TÜV NORD GS certified service engineers with expertise to ensure timely preventive and corrective maintenance of the laboratory equipment. These accreditations make Esco not only an **Excellent Standards COmpany** but also an **Excellent Service COmpany**, which exemplifies Esco's collective quest of being an **Eternally Successful COmpany**.

## References and Links

To know more about the services we offer, visit [www.escolifesciences.com](http://www.escolifesciences.com)





# ESCO LIFSCIENCES GROUP

42 LOCATIONS IN 21 COUNTRIES ALL OVER THE WORLD



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- 📍 Licensee
- 📍 Distributors
- 📍 Factories
- 📍 R&D Centers
- 📍 Regional Distribution Centers

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