



# Gloves Industry





## Welcome to Esco

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

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

**Availability and Accessibility.** Esco has headquarters in Singapore, Indonesia, and Philippines, with manufacturing facilities are located in Asia and Europe. Research and Development (R&D) is conducted worldwide spanning the US, Europe and Asia. Sales, services and marketing subsidiaries are located in 42 major markets including US, UK, Japan, China and India. Esco regional distribution centers are located in Singapore, Malaysia, Thailand, Vietnam, Myanmar, Indonesia, Philippines, Bangladesh, Hong Kong, Taiwan, South Korea, China, Japan, India, UAE, Central and South Africa, Denmark, Germany, Italy, Lithuania, Russia, United Kingdom, and USA. Because of our worldwide presence, you can be sure that Esco is within your reach.

**High Quality, Reliable, and Dependable.** Esco products are of high quality, reliable, and dependable; assuring customers of research accuracy. Cross functional teams from Esco Production, R&D, Quality Assurance, and Senior Management, are regularly assembled to review and implement areas for improvement.

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

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

**Esco Cares for the Environment.** One in every four of Esco's employees is involved in R&D and a number of them evaluate new components and/or designs to produce energy efficient equipment. Being GREEN is more than just modifying parts used to produce a new energy efficient technology, it is also embodied in the every aspect of the company.

**Customer Service and Support.** Our service does not stop once purchase has been done. Esco gives on-time customer service and offers end-user seminars, service training, preventive maintenance, and provides educational materials and informative videos.

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

## Gloves Industry

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# OVERVIEW

Gloves function as a barrier and provide protection from laboratory acquired infections spread via contact. As a type of personnel protective equipment (PPE), it also serves as the first line of defense during microbial analysis. The four common types of gloves include latex, neoprene, nitrile, and vinyl. All of which undergo similar processes and treatment but differ in coating.

- **Latex gloves** – constructed from natural rubber. Sap of rubber tree is harvested and preserved with ammonia. After purification, additional processing chemicals are added to make gloves elastic, resilient, and biodegradable. Latex provides the highest protection against viruses but it can be an allergen to some people after constant exposure.
- **Neoprene gloves** – a combination of chlorine, carbon, hydrogen, and sulfur-based polymers create polychloroprene also known as neoprene. This type of glove provides a better fit compared to latex, free of allergens, and provides protection from bodily fluids and chemicals.
- **Nitrile gloves** – the copolymerization process of acrylonitrile and butadiene results to nitrile butadiene rubber (NBR). This makes the nitrile gloves more durable than latex and able to provide protection against both chemicals and viruses.
- **Vinyl gloves** – the most low-cost type of glove, constructed from polymerized polyvinyl chloride. Ideal for low-risk situations.

## Glove Testing

To ensure quality, durability, and flexibility, gloves undergo quality assurance and quality control tests. A separate regulatory test is performed to determine if the glove can be certified as medical grade.

- **Dimension test** – evaluates the dimension of the glove. It checks the length from the cuff to the middle fingertip, width of the palm, and thickness.
- **Sterility test** – checks the gloves based on US Pharmacopeia guidelines.
- **Aging test** – checks the tensile and elongation properties of a glove after being exposed to 70°C-100°C.

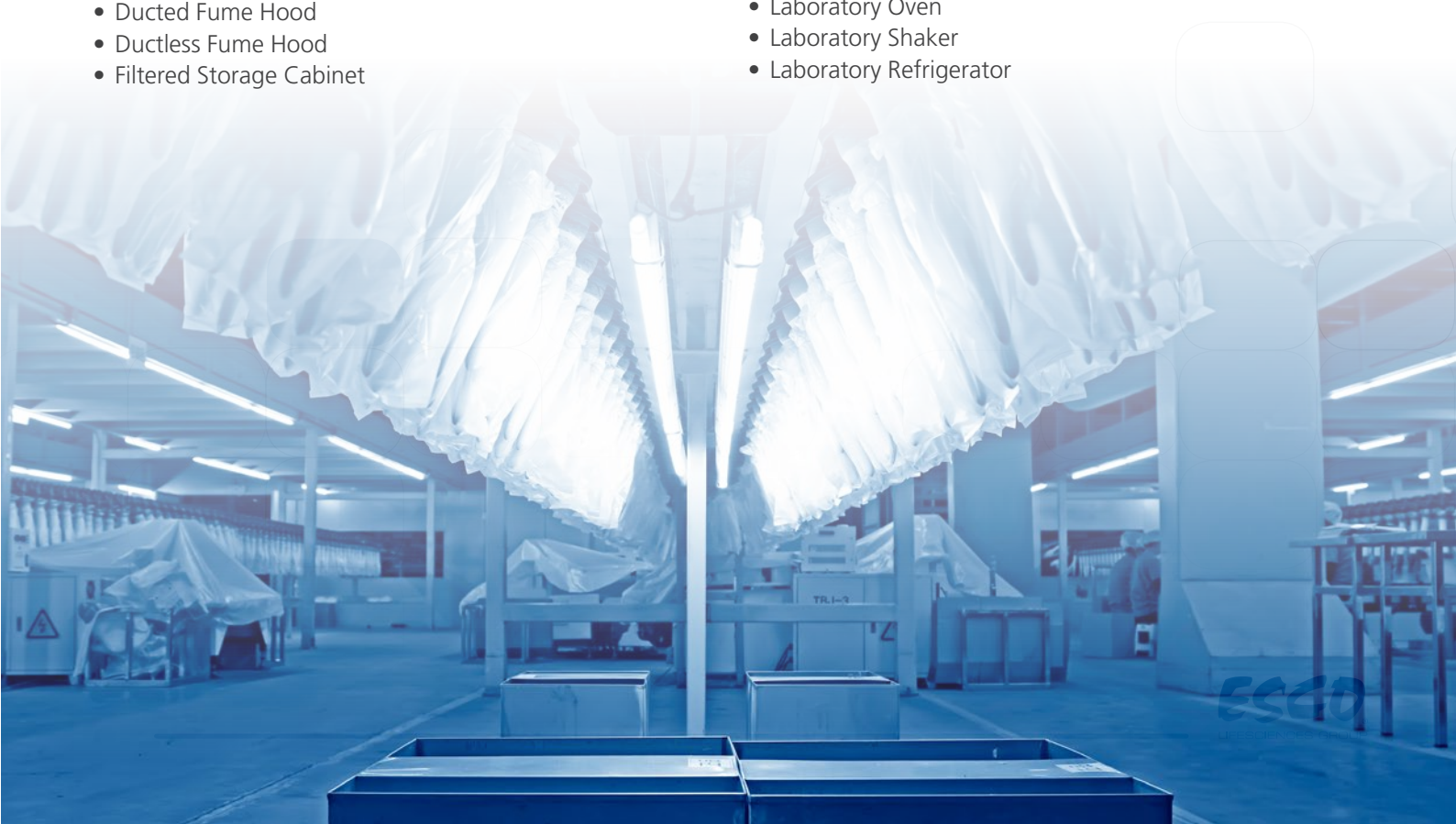
## Equipment

### QA/QC Testing and Chemical Handling

- Ducted Fume Hood
- Ductless Fume Hood
- Filtered Storage Cabinet

### General Equipment

- Laboratory Oven
- Laboratory Shaker
- Laboratory Refrigerator





EFD-4A

# 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



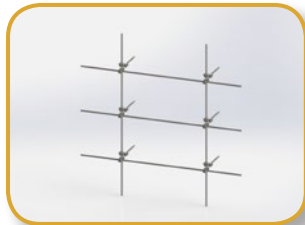
## Introduction

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 (EBD)



Distillation grid



Service fixtures



Sentinel™ Silver microprocessor (for EFD-B models)



EFA-4UDRVW-

# 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.

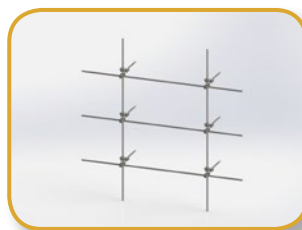
## Optional Accessories:



Base cabinet (EBA)



Circuit board protection



Distillation grid



Service fixtures



Scrubber



Worktop



Sentinel™ XL airflow  
alarm



Support stand (ASL)





EFQ-4UDPVW-<sub>-</sub>

# Frontier<sup>®</sup> Acid Digestion<sup>™</sup> Laboratory Fume Hoods

## Features

- Tri-wall construction
- ASHRAE 110 compliant
- Designed for acid-digestion applications (except perchloric acid)
- Built with u-PVC internal surface and polycarbonate sash to prevent etching from hydrofluoric acid

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



## Introduction

Esco Frontier<sup>®</sup> Acid Digestion<sup>™</sup> Fume Hood is a high performance low flow fume hood designed to handle concentrated acids at high temperatures. This specialized fume hood can be built with unplasticized polyvinylchloride (u-PVC) or polypropylene (PP) internal surfaces which are known for their superior chemical resistance. Sash is made up of polycarbonate material to prevent etching caused by hydrofluoric acid.

## Optional Accessories:



Base cabinet (EBA)



Circuit board protection



Service fixtures



Sentinel<sup>™</sup> XL airflow alarm



Scrubber



Worktop



Support stand (ASL)



PPH-4UDPVW\_

# Frontier® PPH™ Laboratory Fume Hoods

## Features

- ASHRAE 110-2016 certified
- Full polypropylene construction
- Polycarbonate sash window
- Tapered exhaust collar

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



## Introduction

The Frontier® PPH® Fume Hood provides the highest level of protection and containment against highly corrosive chemicals. Full polypropylene (PP) interior makes the hood metal-free and ideal for sensitive work such as trace metal analysis. PP also has an excellent rating against corrosion and chemical staining.

## Optional Accessories:



Base cabinet (EBP)



Circuit board protection



Service fixtures



Sentinel™ XL airflow alarm



ADC-B

# Ascent™ Max 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



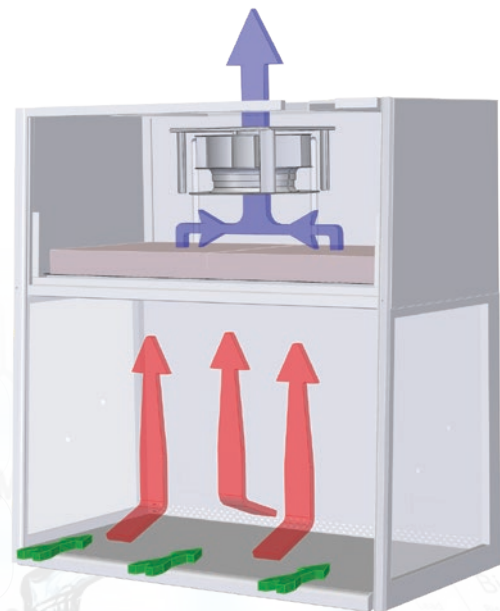
## Introduction

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 ft, 4 ft, 5 ft, 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



SPD-A

# Ascent™ Opti Series Ductless Fume Hoods

## Features

- Safe carbon filtration
- Acrylic construction
- Double hinged mechanism sash
- Has ergonomic arm ports
- Portable and environment-friendly

Available sizes: 3 and 4 ft



## Introduction

Esco Ascent™ Opti Ductless Fume Cabinet is a full-featured ductless fume hood at cost-effective pricing. This equipment offers protection from toxic chemicals fumes. It is designed with ergonomic features, providing user comfort without compromising safety.

Also available in transparent back wall:



SPD-B



## Optional Accessories:



Mobile Cart



Carbon Filter

# Ascent™ Opti Titramax Ductless Fume Hoods

## Features

- Equipped with Nanocarb™ Filter
- Horizontal sliding sash window with ergonomic arm ports
- Epoxy worktop
- Isocide™ antimicrobial powder coating
- Sentinel™ Silver microprocessor controller

Available sizes: 3 and 4 ft



SPT



## Introduction

Titration analysis is a common laboratory method done to quantitatively identify the unknown concentration of a specific analyte. During this analysis, operators are often exposed to chemical fumes, vapors, and odor.

As an advocate of safety, Esco introduces the Ascent™ Opti Titramax, a specialized ductless fume hood designed to enclose titration devices such as burettes and auto-titrators while containing toxic vapour. Its ductless design offers customers full mobility and convenience as no complex installation system is required.

## Optional Accessories:



VOC Sensor



Carbon Filter





ASC\_

# Ascent™ Filtered Storage Cabinet

## Features

- Isocide™ antimicrobial powder coating
- Sentinel™ microprocessor controller
- Door safety lock restricts access
- Multiple filter configurations

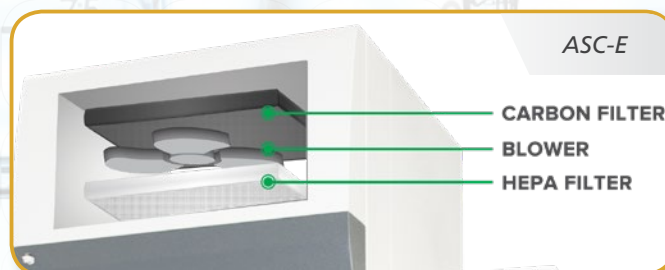
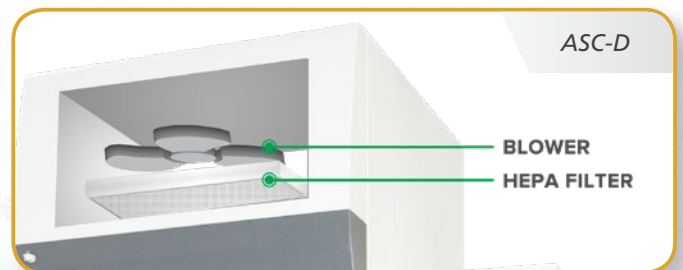
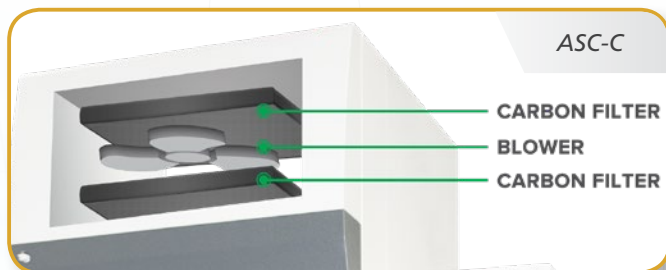
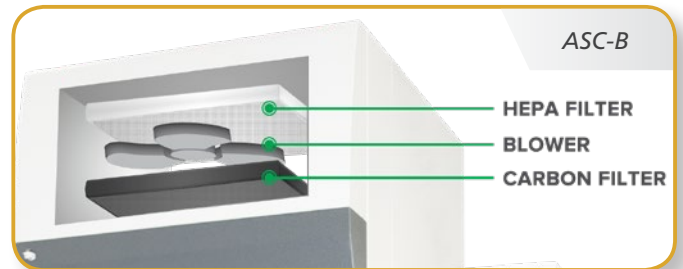
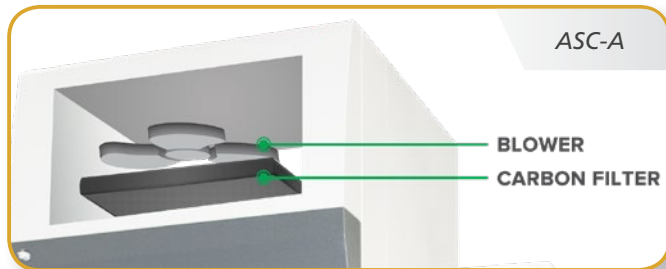
Available sizes: 2, 4, and 6 ft



## Introduction

Fumes from chemical containers often result to the storage cabinet's corrosion and contaminated air in the laboratory. Ascent™ storage cabinet is ideal in providing a safe and convenient storage solution. This cabinet is equipped with Nanocarb™ filters that effectively adsorb chemical fumes to provide operator and environment protection.

## Overview of Models:





OFA-110

# 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

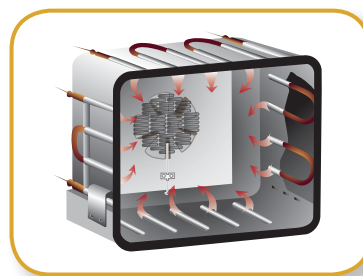
### Introduction

Esco Isotherm® laboratory ovens is designed with a forced-convection ventilation system, intuitive interface, microprocessor PID control with programming options, a 4-zone heated air jacket, and ergonomic feature to provide quality and convenience.



#### 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

# OrbiCult™ Laboratory Shaker



AS1-NC-19

## Features

- Heavy-duty and high-speed application
- Reduce maintenance
- Easy-to-use design
- Audible and visible alarms
- External surfaces are powder coated with Esco Isocide™



**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 – to make sure that Esco laboratory shakers deliver outstanding features and excellent performance year after year.

## Optional 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.



**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 to the Universal Platform.



**Utility Carrier**

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



# HP Series™

## Laboratory Refrigerators

### 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



Green Product



HR1-140S-<sub>\_</sub>



HR1-400T-<sub>\_</sub>

### 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.



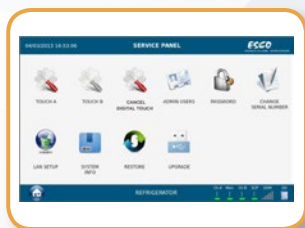
#### Shelf Kits (SK\_)

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 extractable 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.

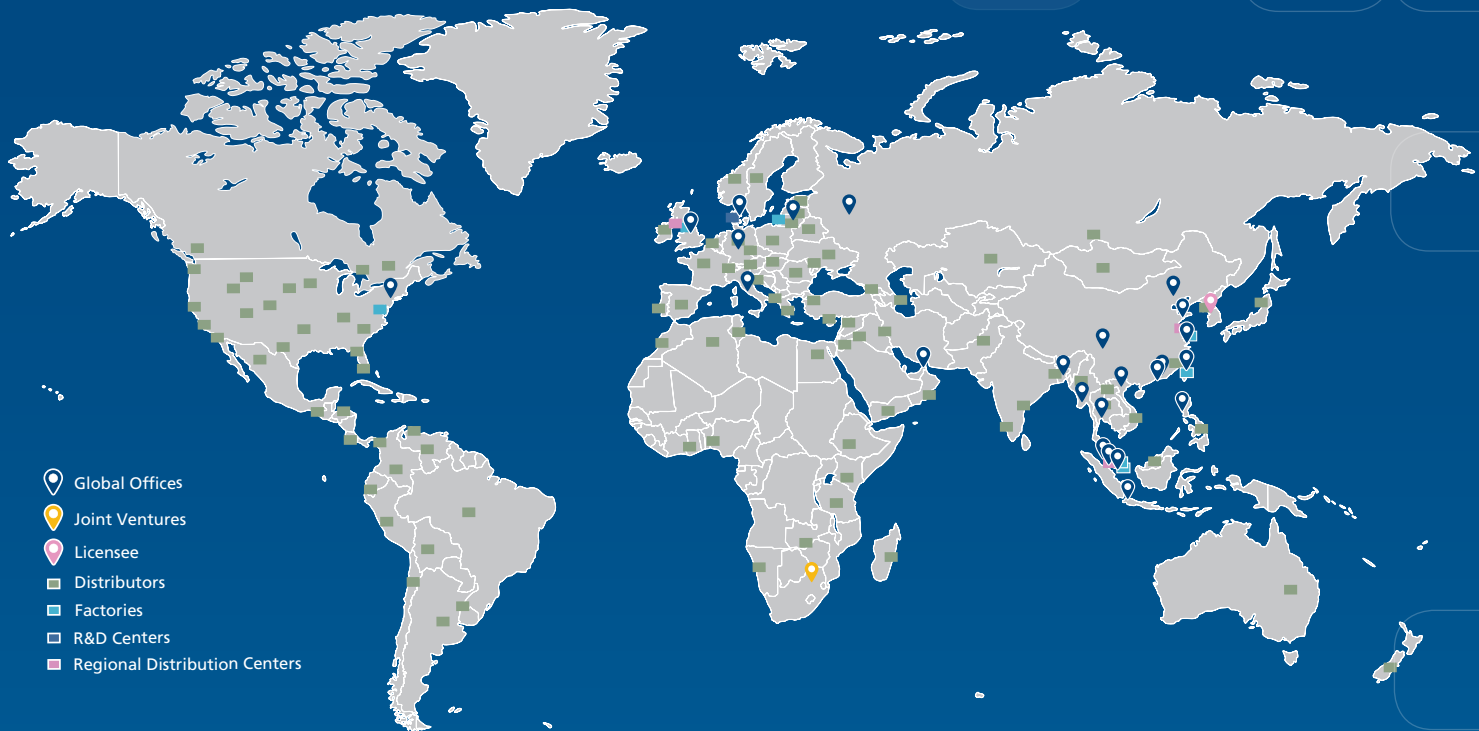


#### Chart Recorder

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.

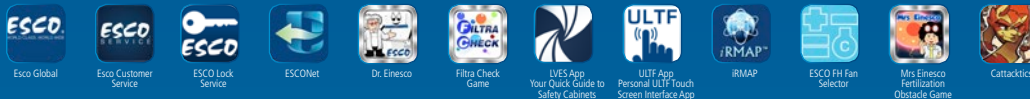
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