

# ESCO

WORLD CLASS. WORLDWIDE.



## Esco HP Series

**Laboratory Refrigerators and Freezers**  
*High-Performance Protection For Your Precious Sample*





## Welcome to Esco

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



Esco represents innovation and forward-thinking designs, which are all coupled with the highest standard quality since 1978. The Esco Group of Companies remains dedicated in delivering innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical and IVF community. With the most extensive product line in the industry, our products have passed a number of international standards and certifications. Esco operates under ISO 9001, ISO 14001 and ISO 13485.

**Availability and Accessibility.** Headquartered in Singapore, manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, services and marketing subsidiaries are located in 12 major markets including the US, UK, Japan, China and India. Our regional distribution centers are located in Bangladesh, China, Denmark, Germany, Hong Kong, India, Indonesia, Italy, Japan, Lithuania, Malaysia, Philippines, Russia, Singapore, South Africa, South Korea, Russia, Taiwan, Thailand, UAE, United Kingdom, USA, and Vietnam. Because of our worldwide presence, you can be sure that Esco is within your reach.

**High Quality, Reliable and Dependable.** Our customers are confident that only with the best quality, reliable, and dependable products, can they be sure of the accuracy of their research and procedures. 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.** Comfort of our users is ensured by building ergonomic designs and by reducing the noise levels of the units.

**Esco Cares for the Environment.** One in every four of Esco's employees is involved in Research and Development and a number of these evaluate new components and/or designs to produce energy efficient equipment. Being GREEN is more than just modifying the parts we use to produce a new energy efficient technology, it also embodies the every aspect of the company.

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

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

# Products and Application

## Life Sciences Laboratory Equipment

### Sample Preparation

- Class I Biological Safety Cabinets
- Class II Type A2 Biological Safety Cabinets
- Class II Type B1 Biological Safety Cabinets
- Class II Type B2 Biological Safety Cabinets
- Class III Biological Safety Cabinets
- Horizontal Laminar Flow Clean Benches
- Vertical Laminar Flow Clean Benches
- Laboratory Animal Research Workstations
- Laboratory Centrifuges

### Sample Cultivation

- CO<sub>2</sub> Incubators, Direct Heat Air-Jacketed
- CO<sub>2</sub> Incubators with Cooling System
- CO<sub>2</sub> Incubators with Stainless Steel Exterior
- CO<sub>2</sub> Incubators (Water-Jacketed)
- Laboratory Shakers

### Sample Analysis

#### PCR Thermal Cyclers

- Conventional Thermal Cyclers
- Real-time PCR Systems

#### PCR Sample Handling

- Microplate Shakers
- PCR Cabinets

#### Sample Storage & Sample Protection Solutions

- Ultra-low Temperature Freezers
- Lab Refrigerators and Freezers
- Sample Database Management Software
- Intelligent Remote Monitoring Application Protocol
- Remote Monitoring, Datalogging, Programming Software
- Wireless Monitoring System

### Chemical Research

- Ductless Fume Hoods
- Laboratory Fume Hoods
- Fume Hood Airflow Monitors
- Exhaust Blowers
- Powder Weighing Balance Enclosures

### General Equipment

#### Laboratory Thermostatic Products

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

### Forensic Sciences

- Evidence Drying Cabinet

## Medical / IVF Equipment

### Controlled Embryo Handling

- Fertilisafe™ ART Workstation
- AVT-I Anti Vibration Table
- Semi Closed Environment IVF

### Safe Embryo Culture

- Miri® Multi room Benchtop Incubator
- CelCulture® CO<sub>2</sub> Incubator
- Mini Miri® Humidified Benchtop Incubator

### Innovative Time Lapse Imaging

- Miri® Time-lapse Incubator

### Accurate Quality Control

- Miri® GA Gas and Temperature Validation Unit
- Miri® GA Mini Gas Validation Unit

### Unique Consumables

- CultureCoin

## Healthcare

### Esco Pharma Products

#### Airflow Containment Products

- Downflow Booths
- Ceiling Laminar Airflow Units
- Laminar Flow Horizontal/Vertical Trolley
- Enterprise™ Laminar Flow Straddle Unites

#### Isolation Containment

- Aseptic Containment Barrier Isolator
- General Processing Platform Isolator
- Weighing and Dispensing Containment Isolator
- Turbulent Flow Aseptic Containment Isolator
- Healthcare Platform Isolator
- Streamline Compounding Isolator

#### Cross Contamination Facility

##### Integrated Barrier

- BioPass™ Pass Through
- Infinity® Air Shower Pass Box
- Cleanroom Air Shower
- Infinity® Cleanroom Transfer Hatch
- Infinity® Pass Box
- Soft capsule® Soft Wall Cleanroom
- Dynamic Passboxes and Dynamic Floor Label Hatches
- Laminar Flow Storage Cabinet

#### Ventilation Containment

- Ventilated Balance Enclosure

### VacciXcell Products

#### Bioreactors and Fermenters

- CelCradle™
- TideCell®
- VacciXcell™ Hybrid Bioreactor

#### Cell Culture Monitoring, Media and Consumables

- Super Plus™
- Plus™ Vero
- Plus™ MDCK
- Plus™ MDCK II
- BioNOC™ II macrocarriers
- GlucCell® Glucose Monitoring System
- CVD Kit

#### Filling Line Equipment

- Filling Line Isolators
- cRabs (close restricted access barriers)
- oRabs (open restricted access barriers)

#### Integrated Solutions

- Cell Processing Isolator
- Cell Processing Center

### TaPestle Rx Products and Services

#### PRODUCTS

##### Pharmacy Automation and Compounding Supply

- Compounding Pharmacy Isolators (SCI, HPI, CBI, GPPI)
- Safety Cabinets and Enclosures (Class II BSC, VBE, LFC)
- Radiopharmacy Hoods and Isolators
- Aseptic Filling Systems

##### Healthcare and Laboratory Construction Components

- Prefabricated Walls (Airecell®)
- Prefabricated Containerized Facility (Prefab™)
- Series Ceiling Systems
- Hygienic/Hermetic Door Systems
- Surgical Scrub Sinks
- Vinyl Tiles and Epoxy
- Laboratory Fit-outs
  - Worktops
  - Frames
  - Specialty Storage cabinets
  - Service Spines & Reagent Shelving

#### SERVICES

- Conceptualization
- Planning
- Procurement
- Installation

#### FACILITY DESIGNS

- Process Architecture
- Biocontainment/Biosafety
- Pharmacy Compounding/Nuclear Medicine
- Cleanroom, Vaccine and Cell Processing
- Laboratory
- Containerized Facility
- ART/IVF
- Cold Chain

# HP Series

## Laboratory Refrigerators and Freezers

### INTRODUCTION

Esco HP Series Refrigerators and Freezers are 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 Laboratory Refrigerators and Freezers are the best choice—providing high-performance protection for your precious samples!



HR1-140S\_ HR1-400S\_ HR1-700S\_ HR1-1500S\_

### HP SERIES LABORATORY REFRIGERATORS



HF2-140S\_ HF2-400S\_ HF2-700S\_ HF2-1500S\_

### HP SERIES LABORATORY FREEZERS



HC6-400S\_ HC6-700S\_

### HP SERIES LABORATORY COMBINATION REFRIGERATORS AND FREEZERS

## KEY FEATURES

*High-performance protection for your precious samples!*

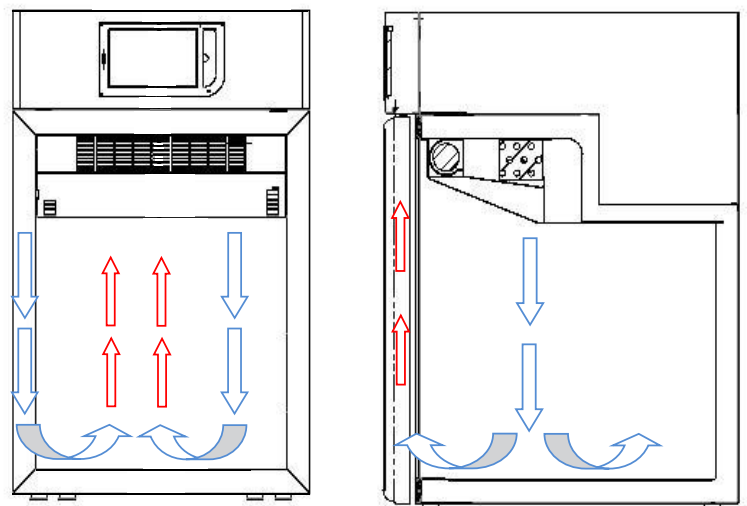
### SUPERIOR DESIGN

The AVERAGE value of samples in a laboratory refrigerator or freezer is \$50,000 USD!

For long-term reliability and product quality – protect samples!

### FORCED-AIR DESIGN

- Superior forced-air design instead of regular cold wall for both refrigerators and freezers.
- Rapid cooldown and very fast recovery due to fan assistance.
- Fast temperature equilibration; superior sample protection!



Front View

Side View

### INTELLIGENT AUTOMATIC DEFROST FOR ADDITIONAL SAMPLE PROTECTION

- High Performance units use intelligent defrost to maximize sample protection.
- Computer has a thermocouple on the evaporator.
  - Detects ice formation.
  - Defrosts only when needed to keep units at optimum performance.
  - Keeps chamber temperature within safe limits.
  - No sample risk when cold wall.



# HP Series Laboratory Refrigerator

Esco HP Series Laboratory Refrigerators are designed for laboratory use offering superior product protection with long term reliability and exceptional product quality. Laboratory Refrigerators are widely used by laboratories, hospitals, clinics and pharmacies. They ensure optimal storage conditions for temperature-sensitive biological and medical products in order to meet the accurate storage temperature required. Its temperature ranges from +2°C to +15°C.

### Door Lock

- Provides additional security for expensive samples and reagents from unauthorized users



### Internal LED Lighting

- Save up to 70% power with less heat exposure to precious samples. LED lighting also has a longer lifetime than fluorescent or incandescent lighting



### Stainless Steel Interior

- Avoids corrosion and protects your precious samples from contamination



### Wheels

- Provided as a standard to make units easy to locate and move



Small Caster



Standard Caster

### Controller

- Displays data about the unit and used to control temperature and other menu



Touchscreen Controller



Standard Controller

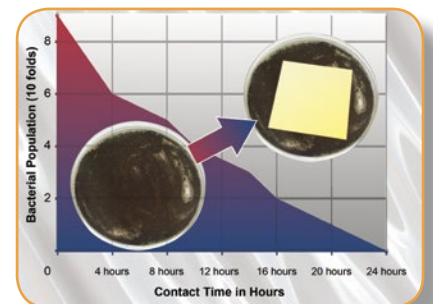
### Triple-Pane Glass Door

- Easily locate needed samples or reagents with the door closed, preventing unnecessary warming of samples or reagents risk. Triple-pane doors provide superior insulation compared to any other glass door technology

- Door automatically closes under 90° when released to maintain temperature and to protect samples

### Quality Esco Construction

- Electrogalvanized steel with white, oven-baked epoxy-polyester, anti-microbial, ISOCIDE™ powder-coated finish to eliminate 99.9% of surface bacteria within 24 hours of exposure



HR1-400S-

## Guide to Models, HP Series Laboratory Refrigerator

H R 1 - 4 0 0 -											
Product Line	Code	Type	Code	Temperature Range	Code	Volume	Code	Controller	Code	Electrical Code	Code
High Performance	H	Refrigerator	R	+2°C to +15°C (35.6°F to 59°F)	1	128 L (4.5 cu. ft)	140	Standard	S	220-240 VAC, 50 Hz	1
						347 L (12.3 cu. ft)	400				
						620 L (21.9 cu. ft)	700	Touchscreen	T	110-120 VAC, 50/60 Hz	2
						1355 L (47.9 cu. ft)	1500			220-240 VAC, 60 Hz	3
										220-240 VAC, 50/60 Hz	8

## General Specifications, HP Series Laboratory Refrigerator

Model	220-240 VAC, 50 Hz	HR1-400S-1 2130002		HR1-400T-1 2130013						
	110-120 VAC, 50/60 Hz	HR1-140S-2 2130023	HR1-400S-2 2130025	HR1-400T-2 2130027	HR1-700S-2 2130028	HR1-700T-2 2130029	HR1-1500S-2 2130030	HR1-1500T-2 2130031		
	220-240 VAC, 60 Hz		HR1-400S-3 2130024	HR1-400T-3 2130026						
	220-240 VAC, 50/60 Hz	HR1-140S-8 2130001			HR1-700S-8 2130003	HR1-700T-8 2130014	HR1-1500S-8 2130004	HR1-1500T-8 2130015		
Capacity	128 L (4.5 cu. ft)	347 L (12.3 cu. ft)		620 L (21.9 cu. ft)		1355 L (47.9 cu. ft)				
Temperature Range	+2°C to +15°C (35.6°F to 59°F)									
Temperature Uniformity Range	±3°C (37.4°F)									
Ambient Temperature	N - ST (+16°C to +32°C) - (+18°C to +38°C)									
Door	1 glass door with triple-pane glass panels with ergonomic handle						2 glass doors with triple-pane glass panels and ergonomic handle			
Alarms	Open door, High/Low temperature, Clogged condenser filter									
Controller	Standard Controller with 0.1°C resolution, password protected			Touchscreen Controller	Standard Controller with 0.1°C resolution, password protected		Touchscreen Controller	Standard Controller with 0.1°C resolution, password protected		Touchscreen Controller
Defrost	Intelligent Automatic									
Warranty	2 years									
Certifications	CE Mark									
Door Lock	Key Lock			Electronic Lock	Key Lock	Electronic Lock	Key Lock	Electronic Lock		
Dry Contacts Alarm	Dry contact to connect to remote alarms									
Lighting	LED									
Wheels	Small Caster (3.5 cm)				Standard Caster (10.5 cm)					
CFC and HCFC Free Refrigerant	R134a		R404a		R134a					
Heat Emission	276 W		624 W		598 W		950 W			
Power Consumption (kW/24H)	2.2				2.9		4.9			
Power Consumption (Running Mode)	2.2 kW/24H		1.8 kW/24H		2.4 kW/24H		6 kW/24H			
Power Consumption (Standby)	50 W									
Interior Walls	AISI 304 Stainless Steel									
Default Number of Shelves	2 shelves		4 shelves				8 shelves			
Maximum Number of Shelves/Drawers	3/5		7/14		8/14		16/28			
Typical Noise Level (<dBA)	39		46		51		54			
Internal Dimensions (W x D x H)	400 x 516 x 560 mm (17.3" x 20.3" x 22")		500 x 493 x 1405 mm (19.7" x 19.4" x 55.3")		600 x 686 x 1505 mm (23.6" x 27.0" x 59.3")		1300 x 690 x 1510 mm (51.2" x 27.2" x 59.4")			
Type of Insulation	Polyurethane Foam									
Insulation Thickness	40 mm (1.6")		60 mm (2.4")				70 mm (2.8")			
External Dimensions (W x D x H)	520 x 635 x 835 mm (20.5" x 25" x 32.9")		600 x 655 x 1955 mm (23.6" x 25.8" x 77.0")		720 x 825 x 2050 mm (28.3" x 32.5" x 80.7")		1440 x 820 x 2050 mm (56.7" x 32.3" x 80.7")			
Net Weight	47 Kg (103.6 lbs)		145 Kg (319.7 lbs)		150 Kg (330.7 lbs)		229 Kg (504.6 lbs)			
Shipping Weight	84 Kg (185.2 lbs)		165 Kg (363.8 lbs)		205 Kg (451.9 lbs)		284 Kg (626.1 lbs)			
Shipping Volume	1.03 m <sup>3</sup> (36.3 cu. ft)		1.19 m <sup>3</sup> (42.0 cu. ft)		1.72 m <sup>3</sup> (60.7 cu. ft)		3.02 m <sup>3</sup> (106.7 cu. ft)			
Shipping Dimensions (W x D x H)	630 x 730 x 2250 mm (24.8" x 28.7" x 88.6")		730 x 760 x 2150 mm (28.7" x 29.9" x 84.6")		840 x 920 x 2220 mm (33.1" x 36.2" x 87.4")		1560 x 900 x 2150 mm (61.4" x 35.4" x 84.6")			



# HP Series Laboratory Freezer

ESCO HP Series Laboratory Freezers are designed for laboratory use offering superior product protection with long term reliability and exceptional product quality. Laboratory Freezers are generally used for storing non-volatile reagents and biological specimens for a longer period of time. The temperature ranges from  $-10^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$ .

### Door Lock

- Provides additional security for expensive samples and reagents from unauthorized users



### Internal LED Lighting

- Save up to 70% power with less heat exposure to precious samples. LED lighting also has a longer lifetime than fluorescent or incandescent lighting



### Stainless Steel Interior

- Avoids corrosion and protects your precious samples from contamination



### Wheels

- Provided as a standard to make units easy to locate and move



Small Caster



Standard Caster

### Controller

- Displays data about the unit and used to control temperature and other menu



Touchscreen Controller



Standard Controller

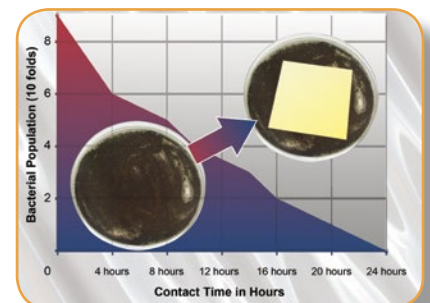
### Solid Door

- Provides superior insulation. Door automatically closes under  $90^{\circ}$  when released to maintain temperature and to protect samples



### Quality Esco Construction

- Electrogalvanized steel with white, oven-baked epoxy-polyester, anti-microbial, ISOCIDE™ powder-coated finish to eliminate 99.9% of surface bacteria within 24 hours of exposure



HF2-400S-

## Guide to Models, HP Series Laboratory Freezer

Product Line	Code	Type	Code	Temperature Range	Code	Volume	Code	Controller	Code	Electrical Code	Code
High Performance	H	Freezer	F	-10°C to -20°C (14°F to -4°F) for 140 L units	2	128 L (4.5 cu. ft)	140	Standard	S	220-240 VAC, 50 Hz	1
						347 L (12.3 cu. ft)	400	Touchscreen	T	110-120 VAC, 50/60 Hz	2
				-10°C to -25°C (14°F to -13°F) for 400 / 700 / 1500 L units		620 L (21.9 cu. ft)	700			220-240 VAC, 60 Hz	3
						1355 L (47.9 cu. ft)	1500				

## General Specifications, HP Series Laboratory Freezer

Model	220-240 VAC, 50 Hz	HF2-140S-1 2130005	HF2-400S-1 2130006	HF2-400T-1 2130016	HF2-700S-1 2130007	HF2-700T-1 2130017	HF2-1500S-1 2130008	HF2-1500T-1 2130018	
	110-120 VAC, 50/60 Hz	HF2-140S-2 2130033	HF2-400S-2 2130035	HF2-400T-2 2130037	HF2-700S-2 2130039	HF2-700T-2 2130041	HF2-1500S-2 2130043	HF2-1500T-2 2130045	
	220-240 VAC, 60 Hz	HF2-140S-3 2130032	HF2-400S-3 2130034	HF2-400T-3 2130036	HF2-700S-3 2130038	HF2-700T-3 2130040	HF2-1500S-3 2130042	HF2-1500T-3 2130044	
Capacity		128 L (4.5 cu. ft)	347 L (12.3 cu. ft)		620 L (21.9 cu. ft)		1355 L (47.9 cu. ft)		
Temperature Range		-10°C to -20°C (14°F to -4°F)		-10°C to -25°C (14°F to -13°F)					
Temperature Uniformity Range		±3°C (37.4°F)							
Ambient Temperature		N (+16°C to +32°C)							
Door		1 solid door, steel white color with aluminum handle and powder-coated with ISOCIDE™					2 solid doors, steel white color with aluminum handle and powder-coated with ISOCIDE™		
Alarms		Open door, High/Low temperature, Clogged condenser filter							
Controller		Standard Controller with 0.1°C resolution, password protected		Touchscreen Controller	Standard Controller with 0.1°C resolution, password protected	Touchscreen Controller	Standard Controller with 0.1°C resolution, password protected	Touchscreen Controller	
Defrost		Intelligent Automatic							
Warranty		2 years							
Certifications		CE Mark							
Door Lock		Key Lock	Electronic Lock	Key Lock	Electronic Lock	Key Lock	Electronic Lock		
Dry Contacts Alarm		Dry contact to connect to remote alarms							
Lighting		LED							
Wheels		Small Caster (3.5 cm)			Standard Caster (10.5 cm)				
CFC and HCFC Free Refrigerant		R404a							
Heat Emission		333 W	862 W	937 W		1515 W			
Power Consumption (kW/24H)		5.2	8.6	12.1		14.3			
Power Consumption (Running Mode)		9.2 kW/24H	10 kW/24H	11 kW/24H		14 kW/24H			
Power Consumption (Standby)		50 W							
Interior Walls		AISI 304 Stainless Steel							
Default Number of Shelves		2 shelves	4 shelves				8 shelves		
Maximum Number of Shelves/Drawers		3/5	5/7	6/7		12/14			
Typical Noise Level (<dBA)		43	49	52		55			
Internal Dimensions (W x D x H)		440 x 516 x 560 mm (17.3" x 20.3" x 22.0")	500 x 493 x 1405 mm (19.7" x 19.4" x 55.3")	600 x 686 x 1505 mm (23.6" x 27.0" x 59.3")		1300 x 690 x 1510 mm (51.2" x 27.2" x 59.4")			
Type of Insulation		Polyurethane Foam							
Insulation Thickness		40 mm (1.6")	60 mm (2.4")				70 mm (2.8")		
External Dimensions (W x D x H)		520 x 635 x 835 mm (20.5" x 25.0" x 32.9")	600 x 655 x 1955 mm (23.6" x 25.8" x 77.0")	720 x 825 x 2050 mm (28.3" x 32.5" x 80.7")		1440 x 820 x 2050 mm (56.7" x 32.3" x 80.7")			
Net Weight		58 Kg (127.9 lbs)	145 Kg (319.7 lbs)	148 Kg (326.3 lbs)		229 Kg (504.9 lbs)			
Shipping Weight		82 Kg (180.8 lbs)	151 Kg (332.9 lbs)	179 Kg (394.6 lbs)		266 Kg (586.4 lbs)			
Shipping Volume		1.03 m³ (36.3 cu. ft)	1.19 m³ (42.0 cu. ft)	1.72 m³ (60.7 cu. ft)		3.02 m³ (106.7 cu. ft)			
Shipping Dimensions (W x D x H)		630 x 730 x 2250 mm (24.8" x 28.7" x 88.6")	730 x 760 x 2150 mm (28.7" x 29.9" x 84.6")	840 x 920 x 2220 mm (33.1" x 36.2" x 87.4")		1560 x 900 x 2150 mm (61.4" x 35.4" x 84.6")			



Guide to Models, HP Series Laboratory Freezer

H F 3 - 4 0 0 -

Product Line	Code	Type	Code	Temperature Range	Code	Volume	Code	Controller	Code	Electrical Code	Code
High Performance	H	Freezer	F	-20°C to -40°C (-4°F to -40°F)	3	360 L (12.7 cu ft)	400	Standard	S	220-240 VAC, 50 Hz	1
						544 L (19.2 cu. ft)	700	Touchscreen	T	110-120 VAC, 50/60 Hz	2
										220-240 VAC, 60 Hz	3

General Specifications, HP Series Laboratory Freezer

Model	220-240 VAC, 50 Hz	HF3-400S-1 2130009	HF3-400T-1 2130019	HF3-700S-1 2130010	HF3-700T-1 2130020
	110-120 VAC, 50/60 Hz	HF3-400S-2 2130047	HF3-400T-2 2130049	HF3-700S-2 2130051	HF3-700T-2 2130053
	220-240 VAC, 60 Hz	HF3-400S-3 2130046	HF3-400T-3 2130048	HF3-700S-3 2130050	HF3-700T-3 2130052
Capacity	360 L (12.7 cu. ft)			544 L (19.2 cu. ft)	
Temperature Range	-20°C to -40°C (-4°F to -40°F)				
Temperature Uniformity Range	±4°C (39.2°F)				
Ambient Temperature	C (+10°C to +25°C)				
Door	1 solid door, steel white color with aluminum handle and powder-coated with ISOCIDE™				
Alarms	Open door, High/Low temperature, Clogged condenser filter				
Controller	Standard Controller with 0.1°C resolution, password protected	Touchscreen Controller		Standard Controller with 0.1°C resolution, password protected	Touchscreen Controller
Defrost	Intelligent Automatic				
Warranty	2 years				
Certifications	CE Mark				
Door Lock	Key Lock	Electronic Lock		Key Lock	Electronic Lock
Dry Contacts Alarm	Dry contact to connect to remote alarms				
Wheels	Small Caster (3.5 cm)			Standard Caster (10.5 cm)	
CFC and HCFC Free Refrigerant	R404a				
Heat Emission	1320 W			2103 W	
Power Consumption (kW/24H)	13.8			14.2	
Power Consumption (Running Mode)	11 kW/24H			16 kW/24H	
Power Consumption (Standby)	50 W				
Interior Walls	AISI 304 Stainless Steel				
Default Number of Shelves	4 shelves				
Maximum Number of Shelves/Drawers	6/6			7/7	
Typical Noise Level (<dBA)	50			60	
Internal Dimensions (W x D x H)	510 x 600 x 1255 mm (20.1" x 23.6" x 49.4")			600 x 686 x 1320 mm (23.6" x 27.0" x 52.0")	
Type of Insulation	Polyurethane Foam				
Insulation Thickness	80 mm (3.1")			60 mm (2.4")	
External Dimensions (W x D x H)	670 x 825 x 1940 mm (26.4" x 32.5" x 76.4")			720 x 860 x 2050 mm (28.3" x 33.9" x 80.7")	
Net Weight	145 Kg (319.7 lbs)			142 Kg (313.1 lbs)	
Shipping Weight	184 Kg (405.7 lbs)			221 Kg (487.2 lbs)	
Shipping Volume	1.61 m³ (56.9 cu. ft)			1.72 m³ (60.7 cu. ft)	
Shipping Dimensions (W x D x H)	800 x 920 x 2190 mm (31.5" x 36.2" x 86.2")			840 x 920 x 2220 mm (33.1" x 36.2" x 87.4")	



# HP Series Combination Laboratory Refrigerator and Freezer

Esco HP Series Laboratory Combination Refrigerators and Freezers are designed for laboratory use offering superior product protection with long term reliability and exceptional product quality. It is a double temperature equipment featuring two independent component. It can be used for a wide variety of applications in life science. Its temperature ranges from +2°C to +15°C for refrigerator and -10°C to -24°C for freezer.

## Door Lock

- Provides additional security for expensive samples and reagents from unauthorized users



## Solid Steel Door

- Solid doors provide superior insulation
- Doors automatically close under 90° when released to maintain temperature and to protect samples

## Internal LED Lighting

- Save up to 70% power with less heat exposure to precious samples. LED lighting also has a longer lifetime than fluorescent or incandescent lighting



## Wheels

- Provided as a standard to make units easy to locate and move



Small Caster



Standard Caster

## Controller

- Displays data about the unit and used to control temperature and other menu



Touchscreen Controller



Standard Controller

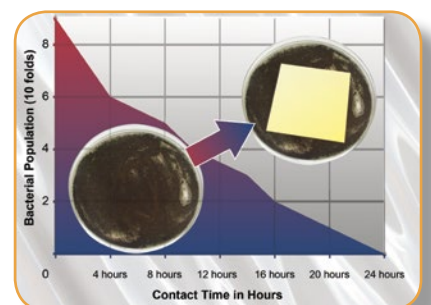
## Stainless Steel Interior

- Avoids corrosion and protects your precious samples from contamination



## Quality Esco Construction

- Electrogalvanized steel with white, oven-baked epoxy-polyester, anti-microbial, **ISOCIDE™** powder-coated finish to eliminate 99.9% of surface bacteria within 24 hours of exposure



HC6-400S-

Guide to Models, HP Series Laboratory Combination Refrigerator and Freezer

H C 6 - 4 0 0 -

Product Line	Code	Type	Code	Temperature Range	Code	Volume	Code	Controller	Code	Electrical Code	Code
High Performance	H	Combination of Refrigerator and Freezer	C	Refrigerator: +2°C to +15°C (35.6°F to 59°F) Freezer: -10°C to -24°C (14°F to -11.2°F)	6	Refrigerator: 170 L (6.0 cu. ft) Freezer: 160 L (5.7 cu. ft)	400	Standard	S	220-240 VAC, 50 Hz	1
						Refrigerator: 260 L (9.19 cu. ft) Freezer: 265 L (9.77 cu.ft)	700	Touchscreen	T	110-120 VAC, 50/60 Hz	2
										220-240 VAC, 60 Hz	3

General Specifications, HP Series Laboratory Combination Refrigerator and Freezer

Model	220-240 VAC, 50 Hz	HC6-400S-1 2130011	HC6-400T-1 2130021	HC6-700S-1 2130012	HC6-700T-1 2130022
	110-120 VAC, 50/60 Hz	HC6-400S-2 2130055	HC6-400T-2 2130057	HC6-700S-2 2130059	HC6-700T-2 2130061
	220-240 VAC, 60 Hz	HC6-400S-3 2130054	HC6-400T-3 2130056	HC6-700S-3 2130058	HC6-700T-3 2130060
Capacity	Refrigerator: 170 L (6.0 cu. ft) Freezer: 160 L (5.7 cu. ft)			Refrigerator: 260 L (9.2 cu. ft) Freezer: 265 L (9.4 cu. ft)	
Temperature Range	Refrigerator: +2°C to +15°C (35.6°F to 59°F) Freezer: -10°C to -24°C (14°F to -11.2°F)				
Temperature Uniformity Range	±3°C (37.4°F)				
Ambient Temperature	N (+16°C to +32°C)			SN - ST (+10°C to +32°C) - (+18°C to +38°C)	
Door	2 solid doors, steel white color with aluminum handle and powder-coated with ISOCIDE™				
Alarms	Open door, High/Low temperature, Clogged condenser filter				
Controller	Standard Controller with 0.1°C resolution, password protected	Touchscreen Controller		Standard Controller with 0.1°C resolution, password protected	Touchscreen Controller
Defrost	Intelligent Automatic				
Warranty	2 years				
Certifications	CE Mark				
Door Lock	Key Lock	Electronic Lock		Key Lock	Electronic Lock
Dry Contacts Alarm	Dry contact to connect to remote alarms				
Lighting	LED				
Wheels	Small Caster (3.5 cm)			Standard Caster (10.5 cm)	
CFC and HCFC Free Refrigerant	R404a				
Heat Emission	560 + 986 W				
Power Consumption (kW/24H)	7.8			13.8	
Power Consumption (Running Mode)	7.2 + 8.5 kW/24H				
Power Consumption (Standby)	50 W				
Interior Walls	AISI 304 Stainless steel				
Default Number of Shelves	4 shelves				
Maximum Number of Shelves/Drawers	6/10				
Typical Noise Level (<dBA)	53			55	
Internal Dimensions (W x D x H)	Refrigerator: 500 x 490 x 685 mm (19.7" x 19.3" x 27.0") Freezer: 500 x 496 x 730 mm (19.7" x 19.5 x 28.7")			Refrigerator: 600 x 686 x 700 mm (23.6" x 27.0" x 27.6") Freezer: 600 x 686 x 740 mm (23.6" x 27.0" x 29.1")	
Type of Insulation	Polyurethane Foam				
Insulation Thickness	Refrigerator: 50 mm (2.0") Freezer: 70 mm (2.8")			Refrigerator: 60 mm (2.4") Freezer: 60 mm (2.4")	
External Dimensions (W x D x H)	600 x 630 x 2015 mm (23.6" x 24.8" x 79.3")			720 x 860 x 2050 mm (28.3" x 33.9" x 80.7")	
Net Weight	145 Kg (319.7 lbs)			155 Kg (341.7 lbs)	
Shipping Weight	172 Kg (379.2 lbs)			222 Kg (489.4 lbs)	
Shipping Volume	1.21 m³ (42.7 cu. ft)			1.80 m³ (63.6 cu. ft)	
Shipping Dimensions (W x D x H)	730 x 770 x 2150 mm (28.7" x 30.3" x 84.6")			840 x 960 x 2220 mm (33.1" x 37.8" x 87.4")	

# EXCELLENT PERFORMANCE

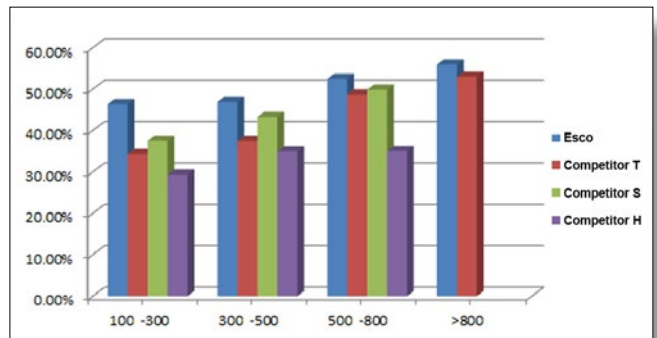
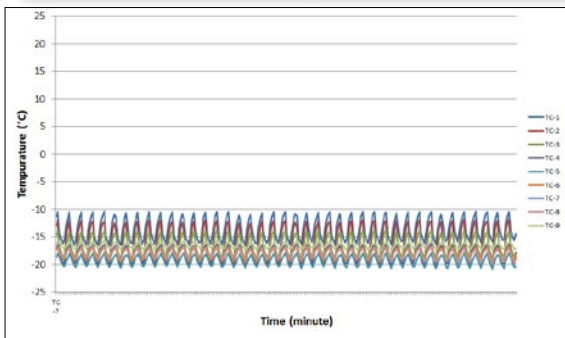
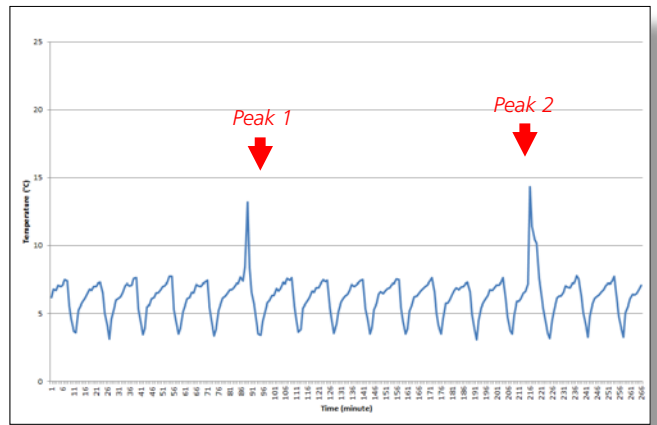
## Fast Temperature Recovery After Door Opening

- With a laboratory-grade sealed system, Esco HP Series provide FAST TEMPERATURE RECOVERY from door open events.
- Bigger compressor with longer life.
- More refrigeration power for fast cool down and high stability.

Performance Testing-700 L Refrigerator

Remark: Two spikes mean door openings.

Temperature Recovery	Peak1	Peak2
Max (°C)	13.2	14.3
Min (°C)	3.4	3.1
Rate (°C/min)	1.63	1.24



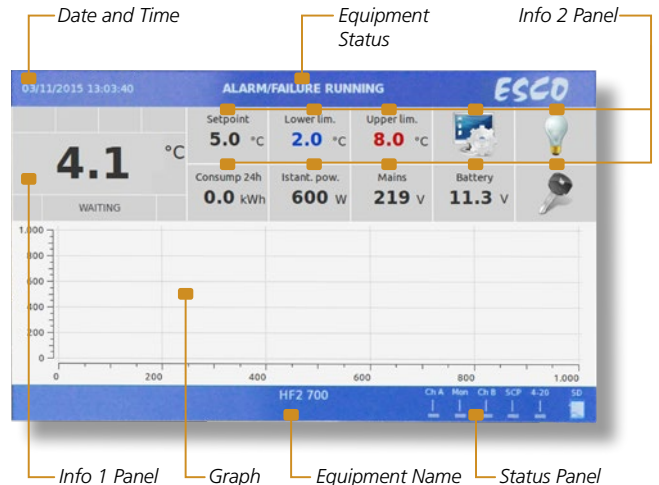
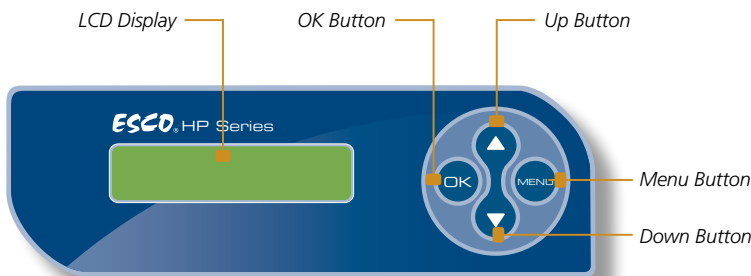
## Excellent Uniformity

- Uniformity test measures the difference between the coldest spot and warmest spot in the freezer chamber when the freezer is operating at a set temperature.
- Esco HP Series has excellent chamber uniformity. This guarantees that all samples are protected regardless of their location.

## Superior Cabinet Design

- A ratio of capacity and external dimension is a very good measure of the value of the effective capacity of the refrigerator and freezer
- Esco reserve capacity surpasses that all major competitors above.

# CONTROL SYSTEM



## Standard Controller

Features:

- Advanced defrost monitoring, lower power consumption and greater guarantee of temperature uniformity
- Temperature display
- Signaling critical conditions.

## Touchscreen Controller

Features:

- Multi-user management with passwords
- Live and historical graphing of temperature
- Data storage on SD card
- Ethernet connection
- Electronic door lock

# ORDERING INFORMATION

Laboratory Refrigerators				
Model	Item Code	Description	Controller	Electrical
HR1-140S-2	2130023	Refrigerator, Undercounter model, 128 L, +2°C to +15°C	Standard Controller	110-120 VAC, 50/60 Hz
HR1-140S-8	2130001	Refrigerator, Undercounter model, 128 L, +2°C to +15°C	Standard Controller	220-240 VAC, 50/60 Hz
HR1-400S-1	2130002	Refrigerator, Upright model, 347 L, +2°C to +15°C	Standard Controller	220-240 VAC, 50 Hz
HR1-400S-2	2130025	Refrigerator, Upright model, 347 L, +2°C to +15°C	Standard Controller	110-120 VAC, 50/60 Hz
HR1-400S-3	2130024	Refrigerator, Upright model, 347 L, +2°C to +15°C	Standard Controller	220-240 VAC, 60 Hz
HR1-400T-1	2130013	Refrigerator, Upright model, 347 L, +2°C to +15°C	Touchscreen Controller	220-240 VAC, 50 Hz
HR1-400T-2	2130027	Refrigerator, Upright model, 347 L, +2°C to +15°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HR1-400T-3	2130026	Refrigerator, Upright model, 347 L, +2°C to +15°C	Touchscreen Controller	220-240 VAC, 60 Hz
HR1-700S-2	2130028	Refrigerator, Upright model, 620 L, +2°C to +15°C	Standard Controller	110-120 VAC, 50/60 Hz
HR1-700S-8	2130003	Refrigerator, Upright model, 620 L, +2°C to +15°C	Standard Controller	220-240 VAC, 50/60 Hz
HR1-700T-2	2130029	Refrigerator, Upright model, 620 L, +2°C to +15°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HR1-700T-8	2130014	Refrigerator, Upright model, 620 L, +2°C to +15°C	Touchscreen Controller	220-240 VAC, 50/60 Hz
HR1-1500S-2	2130030	Refrigerator, Upright model, 1355 L, +2°C to +15°C	Standard Controller	110-120 VAC, 50/60 Hz
HR1-1500S-8	2130004	Refrigerator, Upright model, 1355 L, +2°C to +15°C	Standard Controller	220-240 VAC, 50/60 Hz
HR1-1500T-2	2130031	Refrigerator, Upright model, 1355 L, +2°C to +15°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HR1-1500T-8	2130015	Refrigerator, Upright model, 1355 L, +2°C to +15°C	Touchscreen Controller	220-240 VAC, 50/60 Hz

Laboratory Freezers				
Model	Item Code	Description	Controller	Electrical
HF2-140S-1	2130005	Freezer, Undercounter model, 128 L, -10°C to -20°C	Standard Controller	220-240 VAC, 50 Hz
HF2-140S-2	2130033	Freezer, Undercounter model, 128 L, -10°C to -20°C	Standard Controller	110-120 VAC, 50/60 Hz
HF2-140S-3	2130032	Freezer, Undercounter model, 128 L, -10°C to -20°C	Standard Controller	220-240 VAC, 60 Hz
HF2-400S-1	2130006	Freezer, Upright model, 347 L, -10°C to -25°C	Standard Controller	220-240 VAC, 50 Hz
HF2-400S-2	2130035	Freezer, Upright model, 347 L, -10°C to -25°C	Standard Controller	110-120 VAC, 50/60 Hz
HF2-400S-3	2130034	Freezer, Upright model, 347 L, -10°C to -25°C	Standard Controller	220-240 VAC, 60 Hz
HF2-400T-1	2130016	Freezer, Upright model, 347 L, -10°C to -25°C	Touchscreen Controller	220-240 VAC, 50 Hz
HF2-400T-2	2130037	Freezer, Upright model, 347 L, -10°C to -25°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HF2-400T-3	2130036	Freezer, Upright model, 347 L, -10°C to -25°C	Touchscreen Controller	220-240 VAC, 60 Hz
HF2-700S-1	2130007	Freezer, Upright model, 620 L, -10°C to -25°C	Standard Controller	220-240 VAC, 50 Hz
HF2-700S-2	2130039	Freezer, Upright model, 620 L, -10°C to -25°C	Standard Controller	110-120 VAC, 50/60 Hz
HF2-700S-3	2130038	Freezer, Upright model, 620 L, -10°C to -25°C	Standard Controller	220-240 VAC, 60 Hz
HF2-700T-1	2130017	Freezer, Upright model, 620 L, -10°C to -25°C	Touchscreen Controller	220-240 VAC, 50 Hz
HF2-700T-2	2130041	Freezer, Upright model, 620 L, -10°C to -25°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HF2-700T-3	2130040	Freezer, Upright model, 620 L, -10°C to -25°C	Touchscreen Controller	220-240 VAC, 60 Hz

Laboratory Freezers				
Model	Item Code	Description	Controller	Electrical
HF2-1500S-1	2130008	Freezer, Upright model, 1355 L, -10°C to -25°C	Standard Controller	220-240 VAC, 50 Hz
HF2-1500S-2	2130043	Freezer, Upright model, 1355 L, -10°C to -25°C	Standard Controller	110-120 VAC, 50/60 Hz
HF2-1500S-3	2130042	Freezer, Upright model, 1355 L, -10°C to -25°C	Standard Controller	220-240 VAC, 60 Hz
HF2-1500T-1	2130018	Freezer, Upright model, 1355 L, -10°C to -25°C	Touchscreen Controller	220-240 VAC, 50 Hz
HF2-1500T-2	2130045	Freezer, Upright model, 1355 L, -10°C to -25°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HF2-1500T-3	2130044	Freezer, Upright model, 1355 L, -10°C to -25°C	Touchscreen Controller	220-240 VAC, 60 Hz
HF3-400S-1	2130009	Freezer, Upright model, 360 L, -20°C to -40°C	Standard Controller	220-240 VAC, 50 Hz
HF3-400S-2	2130047	Freezer, Upright model, 360 L, -20°C to -40°C	Standard Controller	110-120 VAC, 50/60 Hz
HF3-400S-3	2130046	Freezer, Upright model, 360 L, -20°C to -40°C	Standard Controller	220-240 VAC, 60 Hz
HF3-400T-1	2130019	Freezer, Upright model, 360 L, -20°C to -40°C	Touchscreen Controller	220-240 VAC, 50 Hz
HF3-400T-2	2130049	Freezer, Upright model, 360 L, -20°C to -40°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HF3-400T-3	2130048	Freezer, Upright model, 360 L, -20°C to -40°C	Touchscreen Controller	220-240 VAC, 60 Hz
HF3-700S-1	2130010	Freezer, Upright model, 544 L, -20°C to -40°C	Standard Controller	220-240 VAC, 50 Hz
HF3-700S-2	2130051	Freezer, Upright model, 544 L, -20°C to -40°C	Standard Controller	110-120 VAC, 50/60 Hz
HF3-700S-3	2130050	Freezer, Upright model, 544 L, -20°C to -40°C	Standard Controller	220-240 VAC, 60 Hz
HF3-700T-1	2130020	Freezer, Upright model, 544 L, -20°C to -40°C	Touchscreen Controller	220-240 VAC, 50 Hz
HF3-700T-2	2130053	Freezer, Upright model, 544 L, -20°C to -40°C	Touchscreen Controller	110-120 VAC, 50/60 Hz
HF3-700T-3	2130052	Freezer, Upright model, 544 L, -20°C to -40°C	Touchscreen Controller	220-240 VAC, 60 Hz

Laboratory Combination Refrigerator and Freezers				
Model	Item Code	Description	Controller	Electrical
HC6-400S-1	2130011	Combination, Upright model, 330 L (170 L / 160 L) +2°C to +15°C; -10°C to -24°C	Standard Controller	220-240 VAC, 50 Hz
HC6-400S-2	2130055	Combination, Upright model, 330 L (170 L / 160 L) +2°C to +15°C; -10°C to -24°C	Standard Controller	110-115 VAC, 50/60 Hz
HC6-400S-3	2130054	Combination, Upright model, 330 L (170 L / 160 L) +2°C to +15°C; -10°C to -24°C	Standard Controller	220-240 VAC, 60 Hz
HC6-400T-1	2130021	Combination, Upright model, 330 L (170 L / 160 L) +2°C to +15°C; -10°C to -24°C	Touchscreen Controller	220-240 VAC, 50 Hz
HC6-400T-2	2130057	Combination, Upright model, 330 L (170 L / 160 L) +2°C to +15°C; -10°C to -24°C	Touchscreen Controller	110-115 VAC, 50/60 Hz
HC6-400T-3	2130056	Combination, Upright model, 330 L (170 L / 160 L) +2°C to +15°C; -10°C to -24°C	Touchscreen Controller	220-240 VAC, 60 Hz
HC6-700S-1	2130012	Combination, Upright model, 525 L (260 L / 265 L) +2°C to +15°C; -10°C to -24°C	Standard Controller	220-240 VAC, 50 Hz
HC6-700S-2	2130059	Combination, Upright model, 525 L (260 L / 265 L) +2°C to +15°C; -10°C to -24°C	Standard Controller	110-115 VAC, 50/60 Hz
HC6-700S-3	2130058	Combination, Upright model, 525 L (260 L / 265 L) +2°C to +15°C; -10°C to -24°C	Standard Controller	220-240 VAC, 60 Hz
HC6-700T-1	2130022	Combination, Upright model, 525 L (260 L / 265 L) +2°C to +15°C; -10°C to -24°C	Touchscreen Controller	220-240 VAC, 50 Hz
HC6-700T-2	2130061	Combination, Upright model, 525 L (260 L / 265 L) +2°C to +15°C; -10°C to -24°C	Touchscreen Controller	110-115 VAC, 50/60 Hz
HC6-700T-3	2130060	Combination, Upright model, 525 L (260 L / 265 L) +2°C to +15°C; -10°C to -24°C	Touchscreen Controller	220-240 VAC, 60 Hz

# 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.



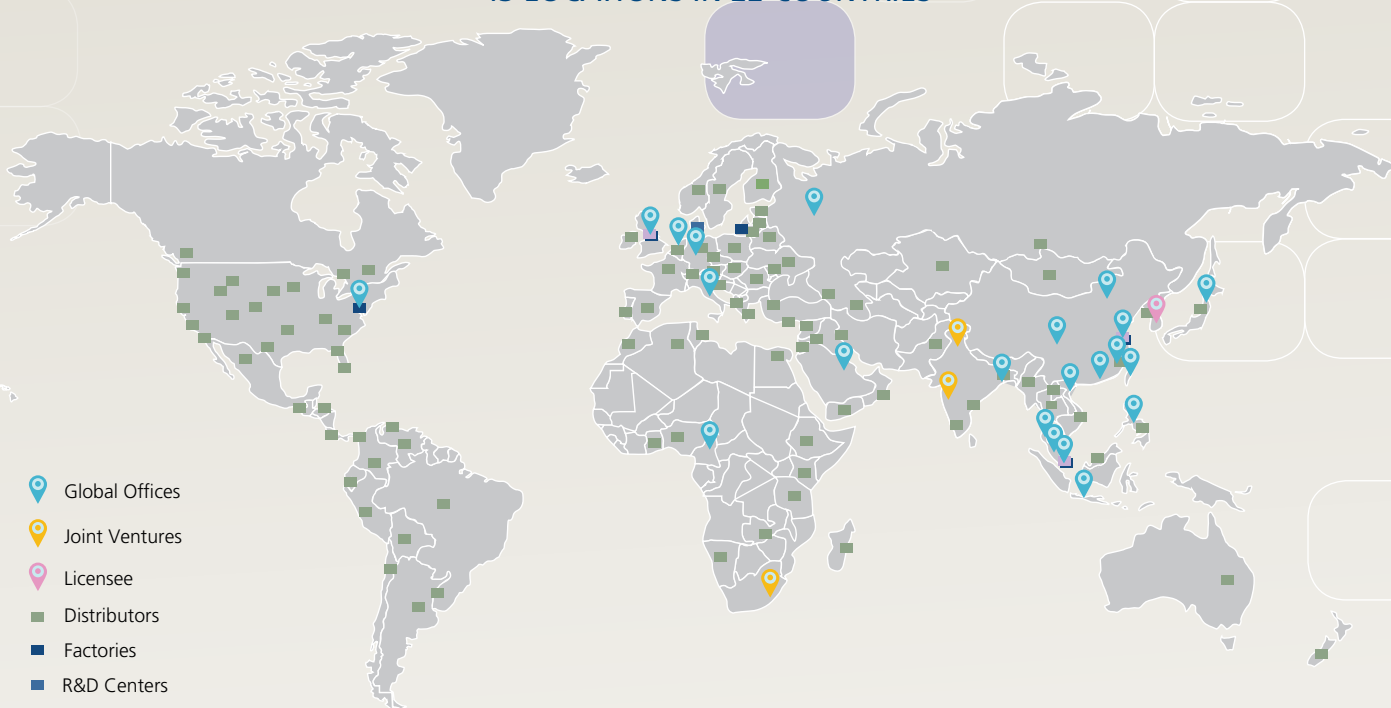
## Chart Recorder

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)
IQOQ	9010179	Installation Qualification Operation Qualification for all models

# ESCO GLOBAL NETWORK

## 43 LOCATIONS IN 22 COUNTRIES



- Global Offices
- Joint Ventures
- Licensee
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers



- ART Equipment
- Biological Safety Cabinets
- CO<sub>2</sub> Incubators
- Compounding Pharmacy Equipment
- Containment / Pharma Products
- Ductless Fume Hoods
- Freeze Dryers
- Lab Animal Research Products
- Laboratory Centrifuges
- Laboratory Fume Hoods
- Laboratory Ovens and Incubators
- Laboratory Shakers
- Laminar Flow Clean Benches
- PCR Cabinets
- PCR Thermal Cyclers
- Powder Weighing Balance Enclosures
- Ultra-low Temperature Freezers

The Esco Group of Companies is a global life sciences tools provider with sales in over 100 countries. The group is active in lab equipment, pharma equipment and medical devices. Manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, service and marketing subsidiaries are located in 12 major markets including the US, UK, Singapore, Japan, China and India. Regional distribution centers are located in the US, UK, and Singapore.

Life Science • Chemical Research • Assisted Reproductive Technology (ART) • Pharmaceutical Equipment • General Equipment



WORLD CLASS. WORLDWIDE.

Esco Micro Pte. Ltd. • 21 Changi South Street 1 • Singapore 486 777  
 Tel +65 6542 0833 • Fax +65 6542 6920 • mail@escoglobal.com  
 www.escoglobal.com

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA  
 Tel: +1 215-441-9661 • Fax 484-698-7757  
 eti.admin@escoglobal.com • www.escolifesciences.us

Esco Global Offices: Bangladesh | Cameroon | China | Denmark | Germany | Hong Kong | India | Indonesia | Italy | Japan | Lithuania | Malaysia | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | United Kingdom | USA | Vietnam