ESCO

WORLD CLASS. WORLDWIDE.

HR1-140S-_

HF3-700S-_

HC6-400S-_

HR1-1500S-_

HF2-140S-_

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.

The Esco Group of Companies 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, and is operating under ISO 90001, ISO 14001, and ISO 13485. 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.

Products and Application

Life Sciences Laboratory Equipment

Sample Preparation
- Class I Biological Safety Cabinets
- Class II Microbiological 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_2 Incubators, Direct Heat Air-Jacketed
- CO_2 Incubators with Cooling System
- CO_2 Incubators with Stainless Steel Exterior
- Laboratory Shakers

Sample Handling and Analysis

PCR Thermal Cyclers
- Conventional Thermal Cyclers

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
- Filtered Storage Cabinet

General Equipment
Laboratory Thermostatic Products
- Laboratory Oven
- Laboratory Incubator
- Refrigerated Incubator
- Natural Convection 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_2 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
- Pharmacon® Downflow Booths
- Ceiling Laminar Airflow Units
- Laminar Flow Horizontal/Vertical Trolley
- Enterprise™ Laminar Flow Straddle Unites
- Cytoculture™ Cytotoxic Safety Cabinets

Isolation Containment
- Aseptic Containment Isolator (ACTI)
- Weighing and Dispensing Containment Isolator (WDCI)
- General Processing Platform Isolator (GPPI)
- Containment Barrier Isolator (CBI)
- Turbulent Flow Aseptic (Grade A) Isolator (TFAI)
- Isoclean® Healthcare Platform Isolator (HPI)
- Streamline® Compounding Isolators (SCI)
- Technetium Dispensing Isolators
- Blood Cell Labeling Isolators
- Open and Closed Restricted Barrier Access Systems (RABS)

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 Laminar Hatches
- Laminar Flow Storage Cabinet

Ventilation Containment
- Ventilated Balance Enclosure

VacciXcell Products

Bioreactors and Fermenters
- CelCradle™
- TideXcell™
- 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!
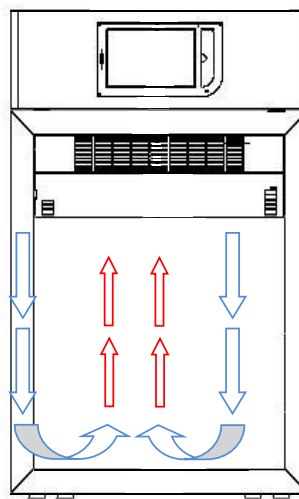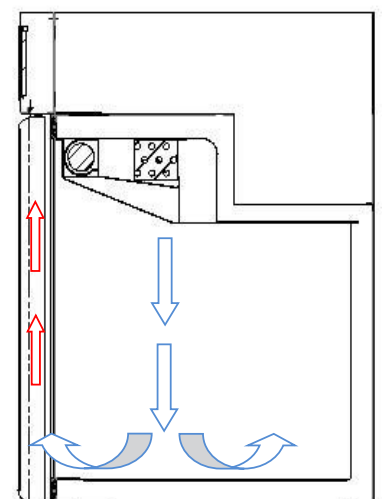
Front View   *Side View*

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.
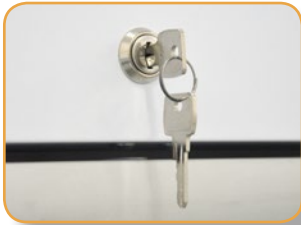 - No sample risk when cold wall.

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.

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

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

HR1-400S-_

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
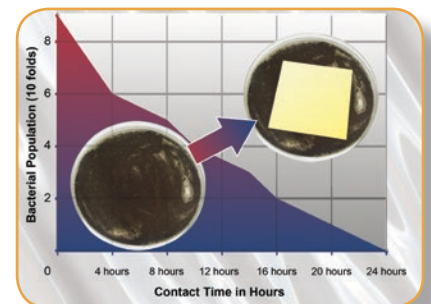
Guide to Models, HP Series Laboratory Refrigerator

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			110-120 VAC, 50/60 Hz	2
						620 L (21.9 cu. ft)	700	Touchscreen	T	220-240 VAC, 60 Hz	3
						1355 L (47.9 cu. ft)	1500			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		R452A		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 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")	

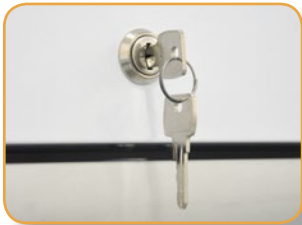*HF2-140S-_   HF2-400S-_   HF2-700S-_   HF2-1500S-_*

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°C to –40°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*

HF2-400S-_

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° 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

Guide to Models, HP Series Laboratory Freezer

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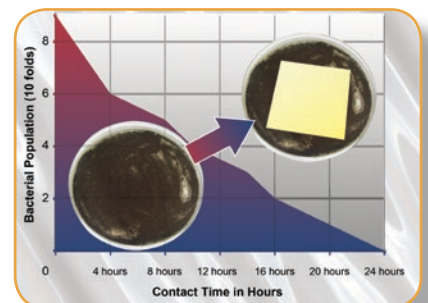
Product Line	Code	Type	Code	Temperature Range	Code	Volume	Code	Controller	Code	Electrical Code	Code
High Performance	H	Freezer	F	-10ºC to -20ºC (14ºF to -4ºF) for 140 L units	2	128 L (4.5 cu. ft)	140	Standard	S	220-240 VAC, 50 Hz	1
						347 L (12.3 cu. ft)	400	Touchscreen	T	110-120 VAC, 50/60 Hz	2
				-10ºC to -25ºC (14ºF to -13ºF) 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		-10ºC to -20ºC (14ºF to -4ºF)	-10ºC to -25ºC (14ºF to -13ºF)					
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		R452A						
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		R452A			
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.

HC6-400S-_   *HC6-700S-_*

Door Lock
- Provides additional security for expensive samples and reagents from unauthorized users
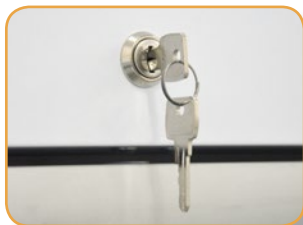
Solid Steel Door
- Solid doors provide superior insulation

- 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

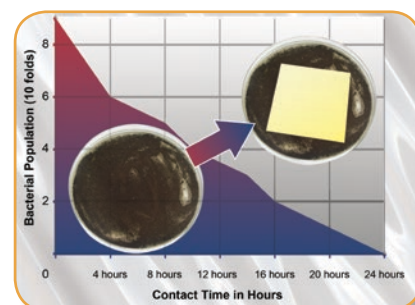*Touchscreen Controller*

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: +2ºC to +15ºC (35.6ºF to 59ºF) Freezer: -10ºC to -24ºC (14ºF to -11.2ºF)	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: +2ºC to +15ºC (35.6ºF to 59ºF) Freezer: -10ºC to -24ºC (14ºF to -11.2ºF)			
Temperature Uniformity Range		±3ºC (37.4ºF)			
Ambient Temperature		N (+16ºC to +32ºC)		SN - ST (+10ºC to +32ºC) - (+18ºC to +38ºC)	
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 0.1ºC resolution, password protected	Touchscreen Controller	Standard Controller with 0.1ºC 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		R452A			
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
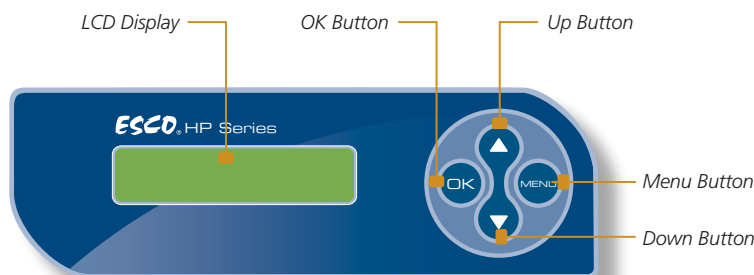*Remark: Two spikes mean door openings.*

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

Peak 1   *Peak 2*
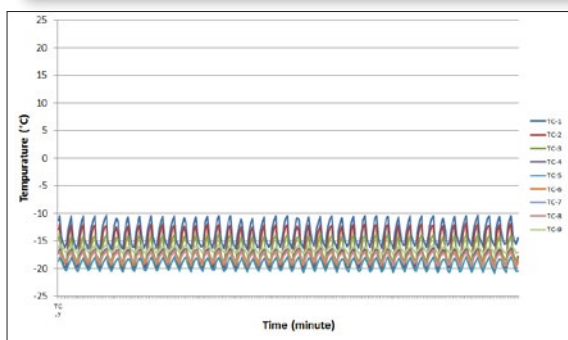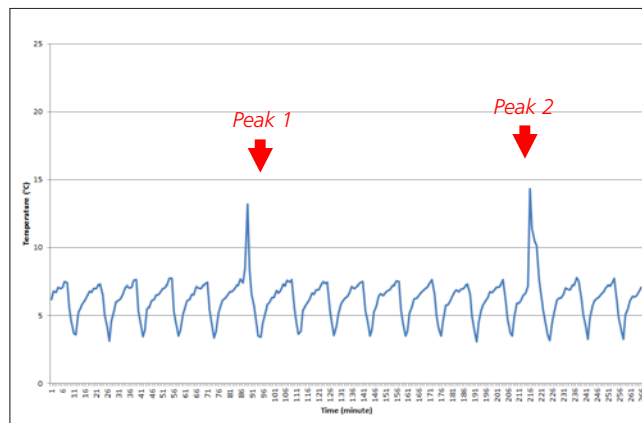
Excellent Uniformity

- 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.
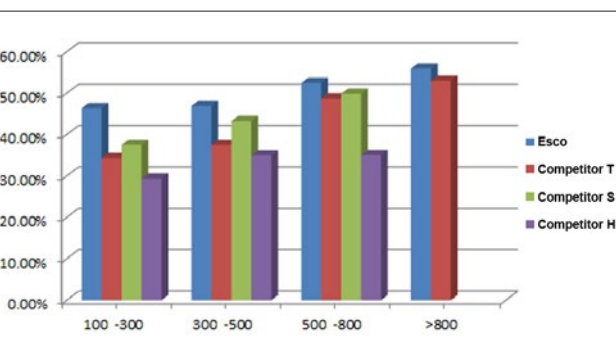
Superior Cabinet Design

- 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

LCD Display   *OK Button*   *Up Button*
Menu Button
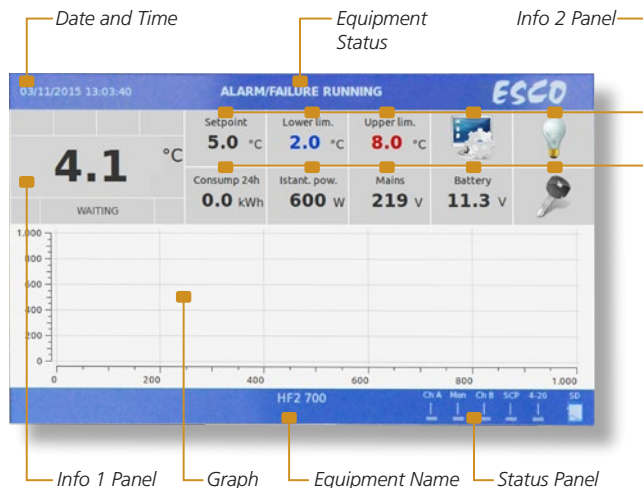*Down Button*

Standard Controller

Features:

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

Date and Time   *Equipment Status*   *Info 2 Panel*
Info 1 Panel   *Graph*   *Equipment Name*   *Status Panel*

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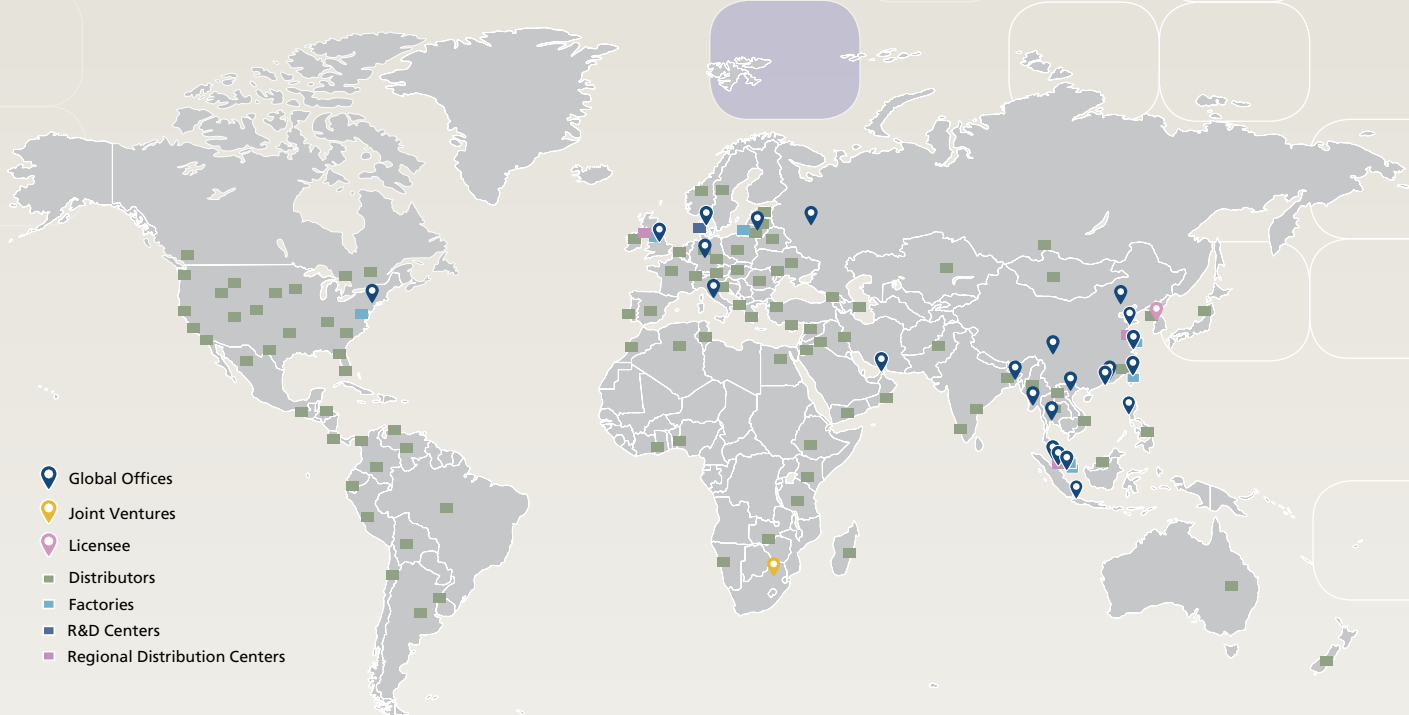
Chart Recorder
The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument, for on-the-spot written documentation of chamber temperature.

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
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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