Esco HP Series

Laboratory Refrigerators and Freezers

High-Performance Protection For Your Precious Sample
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, Lhuania, 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 Analysis
- **PCR Thermal Cylers**
  - Conventional Thermal Cylers
  - 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 Oven
- Forced Convection Laboratory Incubator
- Natural Convection Laboratory Incubator
- Refrigerated Incubator

### Forensic Sciences
- Evidence Drying Cabinet

### Sample Cultivation
- CO2 Incubators, Direct Heat Air-Jacketed
- CO2 Incubators with Cooling System
- CO2 Incubators with Stainless Steel Exterior
- CO2 Incubators (Water-Jacketed)
- Laboratory Shakers

### Sample Storage & Sample Protection
- 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

### 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® CO2 Incubator
- Mini Miri™ Humidified Benchtop Incubator

### Innovative Time Lapse Imaging
- Miri™ Time-lapse Incubator

### Accurate Quality Control
- Miri™ QA Gas and Temperature Validation Unit
- Miri™ QA Mini Gas Validation Unit

### Unique Consumables
- CultureCoin

### Esco Pharma Products
- **Airflow Containment Products**
  - Downflow Booths
  - Ceiling Laminar Airflow Units
  - Laminar Flow Horizontal/Vertical Trolley
  - Enterprise™ Laminar Flow Straddle Units

### 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
- 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

### VaccıXcell Products
- **Bioreactors and Fermenters**
  - CelCradle™
  - TideCell®
  - VaccıXcell™ 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
- eRabs (close restricted access barriers)
- eRabs (open restricted access barriers)

### Integrated Solutions
- Cell Processing Isolator
- Cell Processing Center

### TaPestle Rx Products and Services

#### PRODUCTS
- 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
- Hygiene/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
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!

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!

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

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

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

Small Caster

Standard Caster
## Guide to Models, HP Series Laboratory Refrigerator

### High Performance

**Product Line Code**: H  
**Type Code**: R  
**Temperature Range**: +2°C to +15°C (35.6°F to 59°F)  
**Volume Code**:  
- 128 L (4.5 cu. ft)  
- 347 L (12.3 cu. ft)  
- 620 L (21.9 cu. ft)  
- 1355 L (47.9 cu. ft)  

### General Specifications, HP Series Laboratory Refrigerator

**Model**  
- 220-240 VAC, 50 Hz  
- 110-120 VAC, 50/60 Hz  
- 220-240 VAC, 60 Hz

**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

**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

**Heat Emission**  
- 276 W  
- 624 W  
- 598 W  
- 950 W

**Power Consumption (kw/24H)**  
- 2.2 kW/24H  
- 2.9 kW/24H  
- 4.9 kW/24H

**Power Consumption (Running Mode)**  
- 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 (cDBA)**  
- 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")
HP Series Laboratory Freezers

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

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

- **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

- **Small Caster**
- **Standard Caster**

**Specifications**

- **Temperature Range:** –10°C to –40°C
- **Power Efficiency:** Save up to 70% power with less heat exposure
- **Security Features:** Door lock, Stainless Steel Interior
- **Wheels:** Provided as a standard
- **Controller:** Standard or Touchscreen
- **Construction:** Electrogalvanized steel, ISOCIDE™ finish

**Model Numbers**

- HF2-140S-
- HF2-400S-
- HF2-700S-
- HF2-1500S-
### Guide to Models, HP Series Laboratory Freezer

#### General Specifications, HP Series Laboratory Freezer

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<tbody>
<tr>
<td>High Performance</td>
<td><strong>H</strong></td>
<td>Freezer</td>
<td><strong>F</strong></td>
<td>-10°C to -20°C (14°F to -4°F) for 140 L units</td>
<td>2</td>
<td>128 L (4.5 cu. ft)</td>
<td>140</td>
<td>Standard</td>
<td><strong>S</strong></td>
<td>220-240 VAC, 50 Hz</td>
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<td></td>
<td>-10°C to -25°C (14°F to -13°F) for 400 / 700 / 1500 L units</td>
<td>3</td>
<td>347 L (12.3 cu. ft)</td>
<td>400</td>
<td>Touchscreen</td>
<td><strong>T</strong></td>
<td>110-120 VAC, 50/60 Hz</td>
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<td>620 L (21.9 cu. ft)</td>
<td>3</td>
<td>620 L (21.9 cu. ft)</td>
<td>700</td>
<td>Standard</td>
<td><strong>S</strong></td>
<td>220-240 VAC, 60 Hz</td>
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<td>1355 L (47.9 cu. ft)</td>
<td>3</td>
<td>1355 L (47.9 cu. ft)</td>
<td>1500</td>
<td>Standard</td>
<td><strong>S</strong></td>
<td>220-240 VAC, 60 Hz</td>
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#### General Specifications, HP Series Laboratory Freezer

<table>
<thead>
<tr>
<th>Model</th>
<th>HF2-140S-1 2130005</th>
<th>HF2-400S-1 2130006</th>
<th>HF2-400T-1 2130007</th>
<th>HF2-700S-1 2130008</th>
<th>HF2-700T-1 2130016</th>
<th>HF2-1500S-1 2130017</th>
<th>HF2-1500T-1 2130018</th>
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<tbody>
<tr>
<td>Capacity</td>
<td>128 L (4.5 cu. ft)</td>
<td>347 L (12.3 cu. ft)</td>
<td>620 L (21.9 cu. ft)</td>
<td>1355 L (47.9 cu. ft)</td>
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<tr>
<td>Temperature Range</td>
<td>-10°C to -20°C (14°F to -4°F)</td>
<td>-10°C to -25°C (14°F to -13°F)</td>
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<tr>
<td>Temperature Uniformity Range</td>
<td>±3°C (37.4°F)</td>
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<tr>
<td>Ambient Temperature</td>
<td>N (+16°C to +32°C)</td>
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<tr>
<td>Door</td>
<td>1 solid door, steel white color with aluminum handle and powder-coated with ISOCIDE™</td>
<td>2 solid doors, steel white color with aluminum handle and powder-coated with ISOCIDE™</td>
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<tr>
<td>Alarms</td>
<td>Open door, High/Low temperature, Clogged condenser filter</td>
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<tr>
<td>Controller</td>
<td>Standard Controller with 0.1°C resolution, password protected</td>
<td>Touchscreen Controller</td>
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<tr>
<td>Defrost</td>
<td>Intelligent Automatic</td>
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<td>Warranty</td>
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<td>Certifications</td>
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<tr>
<td>Dry Contacts Alarm</td>
<td>Key Lock Electronic Lock Key Lock Electronic Lock Key Lock Electronic Lock</td>
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<td>Lighting</td>
<td>LED</td>
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<tr>
<td>Wheels</td>
<td>Small Caster (3.5 cm) Standard Caster (10.5 cm)</td>
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<tr>
<td>CFC and HCFC Free Refrigerant</td>
<td>R404a</td>
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<tr>
<td>Heat Emission</td>
<td>333 W 862 W 937 W 1515 W</td>
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<tr>
<td>Power Consumption (kW/24H)</td>
<td>5.2 8.6 12.1 14.3</td>
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<tr>
<td>Power Consumption (Running Mode)</td>
<td>9.2 kW/24H 10 kW/24H 11 kW/24H 14 kW/24H</td>
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<tr>
<td>Power Consumption (Standby)</td>
<td>50 W</td>
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<tr>
<td>Interior Walls</td>
<td>AISI 304 Stainless Steel</td>
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<tr>
<td>Default Number of Shelves</td>
<td>2 shelves 4 shelves 8 shelves</td>
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<tr>
<td>Maximum Number of Shelves/Drawers</td>
<td>3/5 5/7 6/7 12/14</td>
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<tr>
<td>Typical Noise Level (dB(A))</td>
<td>43 49 52 55</td>
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<tr>
<td>Internal Dimensions (W x D x H)</td>
<td>440 x 516 x 560 mm (17.3&quot; x 20.3&quot; x 22.0&quot;) 500 x 493 x 1405 mm (19.7&quot; x 19.4&quot; x 55.3&quot;) 600 x 686 x 1505 mm (23.6&quot; x 27.0&quot; x 59.3&quot;) 1300 x 690 x 1510 mm (51.2&quot; x 27.2&quot; x 59.4&quot;)</td>
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<tr>
<td>Type of Insulation</td>
<td>Polyurethane Foam</td>
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<tr>
<td>Insulation Thickness</td>
<td>40 mm (1.6&quot;) 60 mm (2.4&quot;) 70 mm (2.8&quot;)</td>
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<td>External Dimensions (W x D x H)</td>
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<tr>
<td>Net Weight</td>
<td>58 Kg (127.9 lbs) 145 Kg (319.7 lbs) 148 Kg (326.3 lbs) 229 Kg (504.9 lbs)</td>
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<tr>
<td>Shipping Weight</td>
<td>82 Kg (180.8 lbs) 151 Kg (332.9 lbs) 179 Kg (394.6 lbs) 266 Kg (584.6 lbs)</td>
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<tr>
<td>Shipping Volume</td>
<td>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)</td>
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# HP Series Laboratory Refrigerators and Freezers

## Guide to Models, HP Series Laboratory Freezer

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<tbody>
<tr>
<td>High Performance</td>
<td>H</td>
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<td>-20°C to -40°C (-4°F to -40°F)</td>
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<td>360 L (12.7 cu ft)</td>
<td>400</td>
<td>Standard</td>
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<td>220-240 VAC, 50 Hz</td>
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<tr>
<td></td>
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<td></td>
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<td>544 L (19.2 cu ft)</td>
<td>700</td>
<td>Touchscreen</td>
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<td>110-120 VAC, 50/60 Hz</td>
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## General Specifications, HP Series Laboratory Freezer

| Model            | Capacity | Temperature Range                  | Temperature Uniformity Range | Ambient Temperature | Door | Alarms | Controller | Defrost | Warranty | Certifications | Door Lock | Dry Contacts Alarm | Wheels | CFC and HCFC Free Refrigerant | Heat Emission | Power Consumption (kW/24H) | Power Consumption (Running Mode) | Power Consumption (Standby) | Interior Walls | Default Number of Shelves | Maximum Number of Shelves/Drawers | Typical Noise Level (<dBA) | Internal Dimensions (W x D x H) | Type of Insulation | Insulation Thickness | External Dimensions (W x D x H) | Net Weight | Shipping Weight | Shipping Volume | Shipping Dimensions (W x D x H) |
|------------------|----------|------------------------------------|-------------------------------|---------------------|------|--------|------------|---------|----------|------------------|----------|----------------------|---------|---------------------|------------------|--------------------------|---------------------------|------------------------|-----------------|-----------------|-----------------|-----------------------------|
| 220-240 VAC,    | 360 L    | -20°C to -40°C (-4°F to -40°F)    | ±4°C (39.2°F)                | +10°C to +25°C      | Key   |        | Standard with 0.1°C resolution, password protected | Intelligent Automatic | 2 years | CE Mark          | Key Lock             | Dry contact to connect to remote alarms | Small Caster (3.5 cm) | R404a                | 1320 W          | 13.8                        | 11 kW/24H                  | 50 W                      | AISI 304 Stainless Steel | 4 shelves          | 6/6             | 7/7             | 50             |
| 50 Hz            | (12.7 cu ft) |                                    |                              |                     | Lock   | Lock   | Standard with 0.1°C resolution, password protected | Touchscreen Controller |                   |                    |                      | W200054                  |                     |                    | 2103 W          | 14.2                        | 16 kW/24H                  | 120 W                    |                     | 686 x 1230 mm (23.6" x 27.0" x 52.0") | Polyurethane Foam | 80 mm (3.1") | 60 mm (2.4") | 670 x 825 x 1940 mm (26.4" x 32.5" x 76.4") |
| 110-120 VAC,    | 544 L    |                                    |                              |                     | Lock   | Lock   | Touchscreen Controller                           |                      |                    |                  |                      | W200054                  |                     |                    |                | 145 Kg (31.9 lbs) | 184 Kg (40.7 lbs) | 1.61 m³ (56.9 cu. ft) | 800 x 920 x 2190 mm (31.5" x 36.2" x 86.2") |
| 50/60 Hz         | (19.2 cu ft) |                                    |                              |                     | Lock   | Lock   | Touchscreen Controller                           |                      |                    |                  |                      | W200054                  |                     |                    |                | 142 Kg (31.1 lbs) | 221 Kg (487.2 lbs) | 1.72 m³ (60.6 cu. ft) | 840 x 920 x 2220 mm (33.1" x 36.2" x 87.4") |
| 220-240 VAC,    | 360 L    |                                    |                              |                     | Key   |        | Standard with 0.1°C resolution, password protected | Touchscreen Controller |                   |                    |                      | W200054                  |                     |                    | 2103 W          | 13.8                        | 11 kW/24H                  | 50 W                      |                     | 686 x 1230 mm (23.6" x 27.0" x 52.0") | Polyurethane Foam | 80 mm (3.1") | 60 mm (2.4") | 670 x 825 x 1940 mm (26.4" x 32.5" x 76.4") |
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|                  | (19.2 cu ft) |                                    |                              |                     | Lock   | Lock   | Touchscreen Controller                           |                      |                    |                  |                      | W200054                  |                     |                    |                | 142 Kg (31.1 lbs) | 221 Kg (487.2 lbs) | 1.72 m³ (60.6 cu. ft) | 840 x 920 x 2220 mm (33.1" x 36.2" x 87.4") |

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*Polyurethane Foam*
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.

- **Solid Steel Door**
  - Solid doors provide superior insulation
  - Doors automatically close under 90º 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

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

- **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

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

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

- **Small Caster**

- **Standard Caster**
## Guide to Models, HP Series Laboratory Combination Refrigerator and Freezer

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<tbody>
<tr>
<td>High</td>
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<td>C</td>
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<td>220-240 VAC, 50 Hz</td>
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<td>Freezer: -10ºC to -24ºC (14ºF to -11.2ºF)</td>
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<td>160 L</td>
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<td>Touchscreen</td>
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<td>110-120 VAC, 50/60 Hz</td>
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<td>Refrigerator: -10ºC to -24ºC (14ºF to -11.2ºF)</td>
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<td>265 L</td>
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<td>220-240 VAC, 60 Hz</td>
<td>3</td>
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</table>

### General Specifications, HP Series Laboratory Combination Refrigerator and Freezer

| Model          | Code          | Type          | Temperature Range | Ambient Temperature | Door | Alarms | Controller | Defrost | Warranty | Certifications | Door Lock | Dry Contacts Alarm | Lighting | Wheels | CFC and HCFC Free Refrigerant | Heat Emission | Power Consumption (kW/24H) | Power Consumption (Running Mode) | Power Consumption (Standby) | Interior Walls | Default Number of Shelves | Maximum Number of Shelves/Drawers | Typical Noise Level (<dBA) | Internal Dimensions (W x D x H) | Type of Insulation | Insulation Thickness | External Dimensions (W x D x H) | Net Weight | Shipping Weight | Shipping Volume | Shipping Dimensions (W x D x H) |
|----------------|---------------|---------------|-------------------|---------------------|------|--------|------------|---------|----------|---------------|-----------|----------------------|----------|--------|--------------------------|-------------|--------------------------|----------------------------|--------------------------|----------------|----------------------|-----------------------------|----------------|----------------|----------------|------------------------|
| 220-240 VAC, 50 Hz | H6C-4005-1 2130011 | Combination of Refrigerator and Freezer | +2ºC to +15ºC (35.6ºF to 59ºF) | N (+16ºC to +32ºC) | 2 solid doors, steel white color with aluminum handle and powder-coated with ISOCIDE™ | Standard Controller with 0.1ºC resolution, password protected | Intelligent Automatic | 2 years | CE Mark | Key Lock | LED | R404a | 560 + 986 W | 7.8 | 13.8 | 50 W | AISI 304 Stainless steel | 4 shelves | 10 | 53 | Refrigerator: 500 x 490 x 685 mm (19.7” x 19.3” x 27.0”) | Polyurethane Foam | Refrigerator: 50 mm (2.0”) | 600 x 630 x 2015 mm (23.6” x 24.8” x 79.3”) | 145 Kg (319.7 lbs) | 172 Kg (379.2 lbs) | 1.21 m³ (42.7 cu. ft) | 730 x 770 x 2150 mm (28.7” x 30.3” x 84.6”) |
| 110-120 VAC, 50/60 Hz | H6C-4005-2 2130055 | Combination of Refrigerator and Freezer | +2ºC to +15ºC (35.6ºF to 59ºF) | N (+16ºC to +32ºC) | 2 solid doors, steel white color with aluminum handle and powder-coated with ISOCIDE™ | Standard Controller with 0.1ºC resolution, password protected | Intelligent Automatic | 2 years | CE Mark | Key Lock | LED | R404a | 560 + 986 W | 7.8 | 13.8 | 50 W | AISI 304 Stainless steel | 4 shelves | 10 | 53 | Refrigerator: 500 x 490 x 685 mm (19.7” x 19.3” x 27.0”) | Polyurethane Foam | Refrigerator: 50 mm (2.0”) | 600 x 630 x 2015 mm (23.6” x 24.8” x 79.3”) | 145 Kg (319.7 lbs) | 172 Kg (379.2 lbs) | 1.21 m³ (42.7 cu. ft) | 730 x 770 x 2150 mm (28.7” x 30.3” x 84.6”) |
| 220-240 VAC, 60 Hz | H6C-4005-3 2130005 | Combination of Refrigerator and Freezer | +2ºC to +15ºC (35.6ºF to 59ºF) | N (+16ºC to +32ºC) | 2 solid doors, steel white color with aluminum handle and powder-coated with ISOCIDE™ | Standard Controller with 0.1ºC resolution, password protected | Intelligent Automatic | 2 years | CE Mark | Key Lock | LED | R404a | 560 + 986 W | 7.8 | 13.8 | 50 W | AISI 304 Stainless steel | 4 shelves | 10 | 53 | Refrigerator: 500 x 490 x 685 mm (19.7” x 19.3” x 27.0”) | Polyurethane Foam | Refrigerator: 50 mm (2.0”) | 600 x 630 x 2015 mm (23.6” x 24.8” x 79.3”) | 145 Kg (319.7 lbs) | 172 Kg (379.2 lbs) | 1.21 m³ (42.7 cu. ft) | 730 x 770 x 2150 mm (28.7” x 30.3” x 84.6”) |
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.

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<tr>
<th>Temperature Recovery</th>
<th>Peak1</th>
<th>Peak2</th>
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<tbody>
<tr>
<td>Max (°C)</td>
<td>13.2</td>
<td>14.3</td>
</tr>
<tr>
<td>Min (°C)</td>
<td>3.4</td>
<td>3.1</td>
</tr>
<tr>
<td>Rate (°C/min)</td>
<td>1.63</td>
<td>1.24</td>
</tr>
</tbody>
</table>

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

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<tr>
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<th>Item Code</th>
<th>Description</th>
<th>Controller</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR1-140S-2</td>
<td>2130023</td>
<td>Refrigerator, Undercounter model, 128 L, +2°C to +15°C</td>
<td>Standard Controller</td>
<td>110-120 VAC, 50/60 Hz</td>
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<tr>
<td>HR1-140S-8</td>
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<td>Refrigerator, Undercounter model, 128 L, +2°C to +15°C</td>
<td>Standard Controller</td>
<td>220-240 VAC, 50/60 Hz</td>
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<td>HR1-400S-1</td>
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### Laboratory Freezers

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### Laboratory Refrigerators and Freezers

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<td>HF3-400T-1</td>
<td>2130019</td>
<td>Freezer, Upright model, 360 L, -20°C to -40°C</td>
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<td>220-240 VAC, 50 Hz</td>
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<td>HF3-400T-2</td>
<td>2130049</td>
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<td>HF3-400T-3</td>
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<tr>
<td>HF3-700S-1</td>
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<td>HF3-700T-2</td>
<td>2130053</td>
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<td>HF3-700T-3</td>
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<td>Touchscreen Controller</td>
<td>220-240 VAC, 60 Hz</td>
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</table>

### Laboratory Combination Refrigerator and Freezers

<table>
<thead>
<tr>
<th>Model</th>
<th>Item Code</th>
<th>Description</th>
<th>Controller</th>
<th>Electrical</th>
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<tbody>
<tr>
<td>HC6-400S-1</td>
<td>2130011</td>
<td>Combination, Upright model, 330 L (170 L/160 L)</td>
<td>Standard Controller</td>
<td>220-240 VAC, 50 Hz</td>
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<tr>
<td>HC6-400S-2</td>
<td>2130055</td>
<td>Combination, Upright model, 330 L (170 L/160 L)</td>
<td>Standard Controller</td>
<td>110-115 VAC, 50/60 Hz</td>
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<tr>
<td>HC6-400S-3</td>
<td>2130054</td>
<td>Combination, Upright model, 330 L (170 L/160 L)</td>
<td>Standard Controller</td>
<td>220-240 VAC, 60 Hz</td>
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<tr>
<td>HC6-400T-1</td>
<td>2130021</td>
<td>Combination, Upright model, 330 L (170 L/160 L)</td>
<td>Touchscreen Controller</td>
<td>220-240 VAC, 50 Hz</td>
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<td>HC6-400T-2</td>
<td>2130057</td>
<td>Combination, Upright model, 330 L (170 L/160 L)</td>
<td>Touchscreen Controller</td>
<td>110-115 VAC, 50/60 Hz</td>
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<td>HC6-400T-3</td>
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<td>HC6-700S-1</td>
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<td>Combination, Upright model, 525 L (260 L/265 L)</td>
<td>Standard Controller</td>
<td>220-240 VAC, 50 Hz</td>
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<tr>
<td>HC6-700S-2</td>
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<td>Combination, Upright model, 525 L (260 L/265 L)</td>
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<td>110-115 VAC, 50/60 Hz</td>
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<td>HC6-700S-3</td>
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<td>HC6-700T-1</td>
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<td>HC6-700T-2</td>
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<td>Combination, Upright model, 525 L (260 L/265 L)</td>
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<tr>
<td>HC6-700T-3</td>
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<td>Combination, Upright model, 525 L (260 L/265 L)</td>
<td>Touchscreen Controller</td>
<td>220-240 VAC, 60 Hz</td>
</tr>
</tbody>
</table>
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/auditory 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.

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