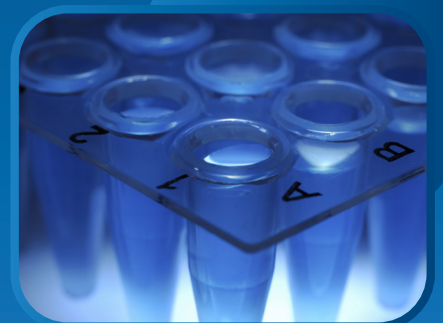


# Lexicon®

Dual-System Ultra-Low  
Temperature Freezer

Secure your samples with advanced  
dual-system technology in our -86°C freezer



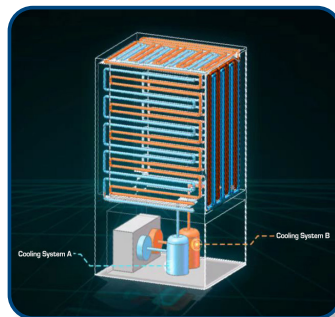
Engineered with precision and reliability, Esco's Lexicon® dual-system ultra-low temperature freezer offers unparalleled sample protection. Built with top-tier components and backed by rigorous production standards, this freezer ensures optimal performance and durability. Its advanced refrigeration technology and robust design guarantee the preservation of your samples, making it ideal for a wide range of practical applications. Trust in Esco's legacy of excellence to safeguard your samples for years to come.

## PRODUCT FEATURES

Lexicon® Dual-System  
Ultra Low Temperature Freezer

### SUPERIOR TEMPERATURE STABILITY

- High-density polyurethane foam keeps temperatures ultra-stable.
- 25 mm thick vacuum insulation panel (V.I.P) improves insulation by >30%, ensuring consistent ultra-low temperature storage.



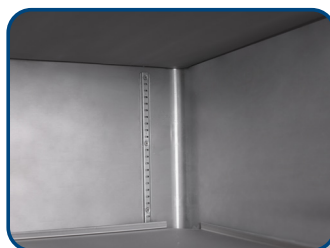
### UNINTERRUPTED DUAL COOLING

- Dual independent compressors for continuous, silent, and efficient operation.
- Redundant backup system ensures uninterrupted cooling even if one of the compressor breaks down.
- Active noise reduction with flame-retardant materials for quiet lab environments.



### FROST-FREE SEALING

- Five-layer silicone door seals minimize heat loss, prevent frost buildup, and ensure long-term durability.
- Heated door frames allow effortless opening, even in low temperature conditions.



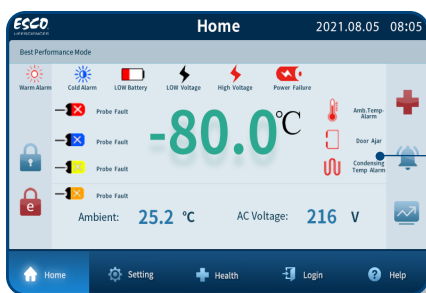
### DURABLE, EASY-TO-CLEAN DESIGN

- High-strength, corrosion-resistant steel exterior.
- Seamless inner chamber with large rounded corners for easy cleaning.
- Three adjustable stainless steel shelves to customize the partition for different sample size needs.



### EFFORTLESS DEFROSTING & SEAL

- Removable inner foam door simplifies defrosting and cleaning process.
- Stainless steel construct prevents deformation and temperature leakage.



## SMART, USER-FRIENDLY CONTROL

- LCD capacitive touch screen for clear, real-time status display.
- Password controlled interface for secure and hierarchical user management.
- Automatic event recorder with visual and audible alarms for abnormal conditions.

## DUAL SAMPLE ACCESS PORT

- Two 25mm access port for convenient access of testing equipment.
- Additional ports available as needed for specialized applications.

## HEATED PRESSURE EQUALIZATION PORT (PEP)

- Automatically equilibrate vacuum pressure after door closure, reduce waiting time.
- Heating element prevents frosting at this port.

## PAPERLESS LAB NOTES AT EYE-LEVEL

- Reusable PET note board on the outer door for recording messages and reminders.
- Ergonomic design at eye-level for easy viewing and access.

## ALL-ROUNDED SAFETY ALERTS

- Complete alarms for temperature variations, sensor failures, and voltage abnormalities.
- RS485 serial communication port for BMS linkage.

## EXTRACTABLE DATA LOGS

- Automatically records temperature with adjustable intervals.
- Temperature trend curve display and optional chart recorder for additional monitoring records.
- Extractable data in PDF and CSV format.

## SECURE, FLEXIBLE LOCKING

- Integrated key-lock handle with additional lock hinge for external padlock for dual security.

## ELECTRICAL SAFETY PROTECTION

- Adaptive 220V  $\pm 10\%$  voltage range.
- Overcurrent and overload protection with start-up delay to reduce circuit load.



## HASSLE-FREE FILTER MAINTENANCE

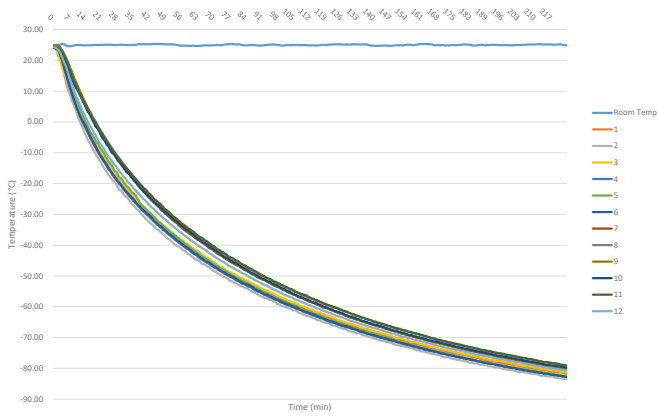
- Tool-free installation and removal for easy cleaning and maintenance.

## SMOOTH MOBILITY & STABILITY

- Swivel casters with stop wheels and adjustable height for stability on uneven surfaces.

# PERFORMANCE DATA

Pull Down Test



## Pull Down Time Performance

Model : UUS-585D-1-SS

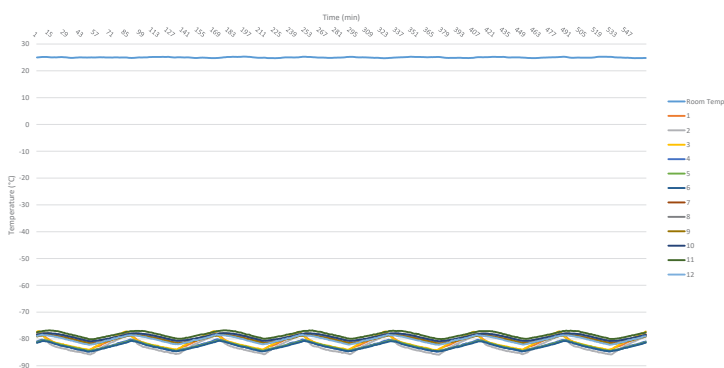
Ambient Temperature During Test : 25°C

Starting Temperature : 25°C

Internal Set Temperature : -80°C

The Pull-Down Test shows how efficiently the UUS-585D-1-SS cools from 25°C to its -80°C set point. All 12 sensors display a smooth and steady temperature decline, reflecting the unit's strong refrigeration capacity and stable cooling performance. With a pull-down time of just 220 minutes, the freezer quickly reaches optimal conditions for sample loading, helping improve overall laboratory workflow and readiness.

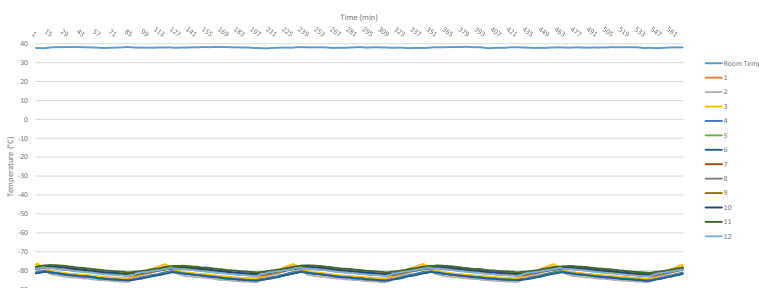
-80°C Set Point at Ambient Temperature 25°C



## Stable -80°C Temperature Performance

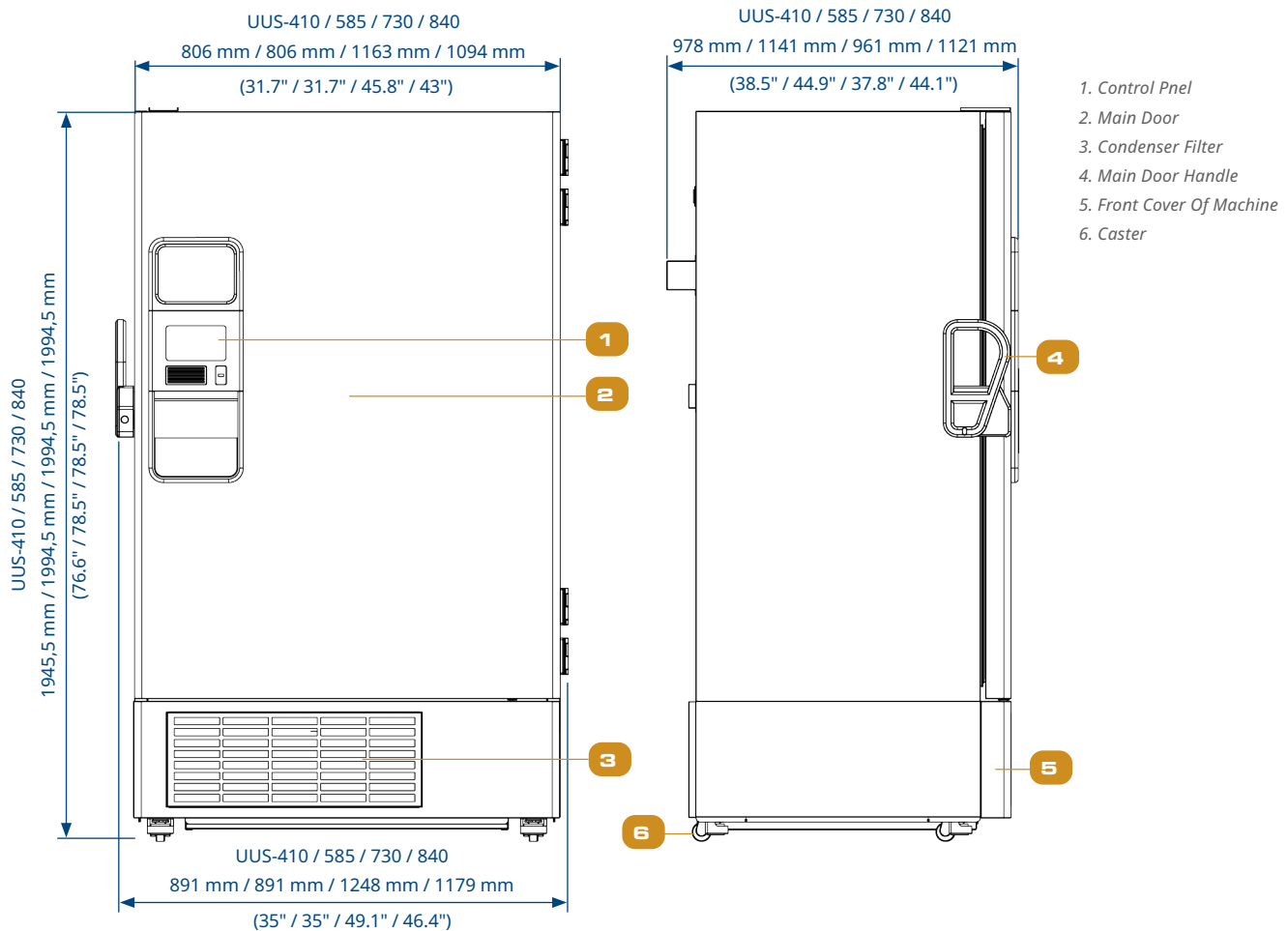
The Esco ULT Freezer maintains precise and stable -80°C temperature control at standard room conditions (25°C). Each monitored point stays consistently within the expected range, ensuring dependable protection for all stored samples.

-80°C Set Point at Ambient Temperature 38°C



## Reliable Performance Under Extreme Conditions

Even at elevated ambient temperatures of 38°C, the Esco ULT Freezer maintains stable -80°C performance with temperature uniformity of  $\pm 2.9^\circ\text{C}$  across all monitoring points. This demonstrates the robustness of its refrigeration system, making it highly reliable for tropical, high-ambient, or heavy-load laboratory environments.



## OUR SERVICES

*We Provide a One-stop Solution from Installation to Decommissioning of Your Equipment!*



### Expert Support from Start to Finish

Our team provides full technical assistance from installation, calibration, user training, to decommissioning. Comprehensive documentation and service reports are included for traceability and compliance purposes.



### Fast Response

We offer responsive technical support within 24 hours for priority clients. Our support team is easily reachable via email and phone.



### Dedicated Regional Service Team

Our Field Service Representatives are trained to provide fast and reliable service, with access to ready spare parts and factory-level technical support.



### Commitment to Service Excellence

We aim to exceed customer expectations through timely, consistent, and professional support throughout the equipment lifecycle.



**Safeguard Your Equipment with our Service and Warranty Package!**

## TECHNICAL SPECIFICATIONS

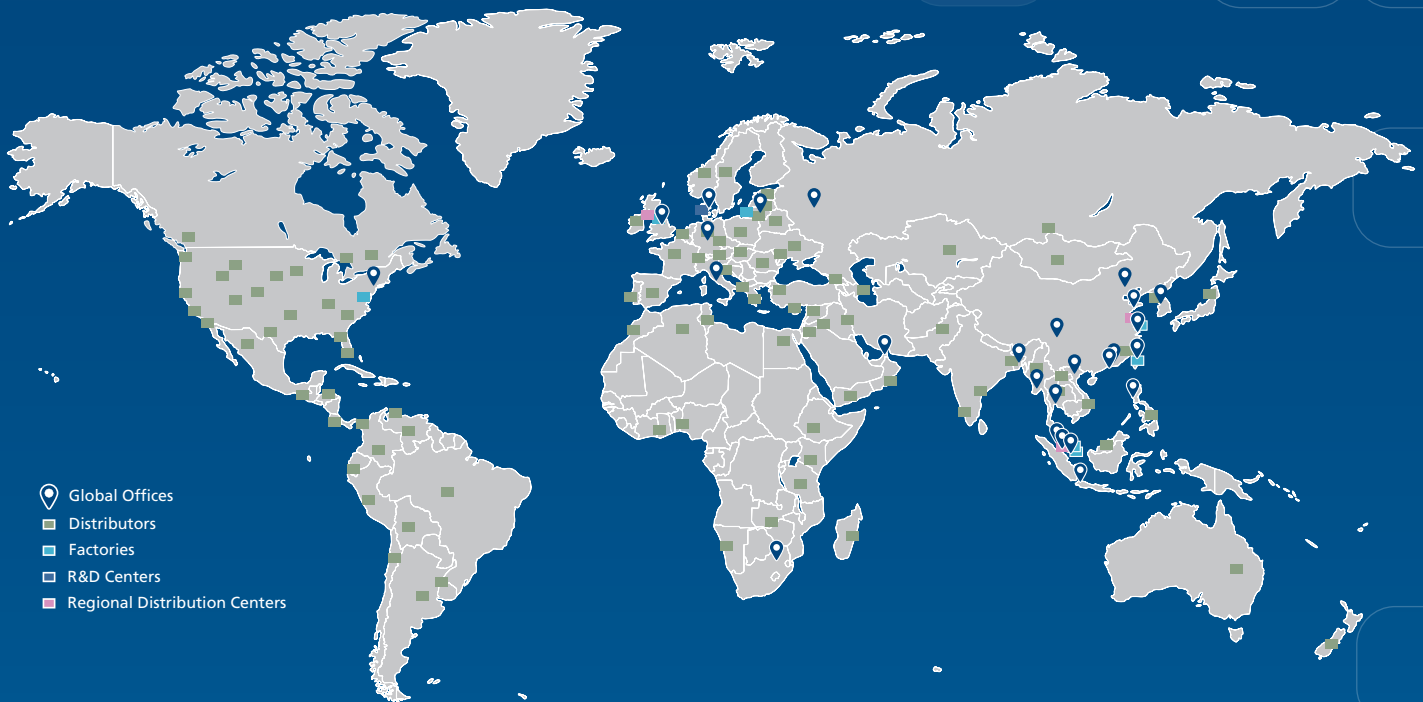
| General Specification                  | UUS-410D-1-SS                                                                                                                                                                                  | UUS-585D-1-SS                                  | UUS-730D-1-SS                                  | UUS-840D-1-SS                                   |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|-------------------------------------------------|
| Capacity                               | 410 L (14.5 cu. ft.)                                                                                                                                                                           | 585 L (20.6 cu. ft.)                           | 730 L (25.8 cu. ft.)                           | 840 L (29.6 cu. ft.)                            |
| Cooling System                         | Dual Direct Cooling System                                                                                                                                                                     |                                                |                                                |                                                 |
| Dual-System Components                 | Dual Compressors, Dual Condenser, Dual Independent Evaporators                                                                                                                                 |                                                |                                                |                                                 |
| Display                                | LCD Touchscreen                                                                                                                                                                                |                                                |                                                |                                                 |
| Temperature Control Accuracy           | 0.1°C                                                                                                                                                                                          |                                                |                                                |                                                 |
| Temperature Range                      | -40°C to -86°C                                                                                                                                                                                 |                                                |                                                |                                                 |
| Temperature Uniformity                 | ±3.0°C                                                                                                                                                                                         |                                                | ±4.5°C                                         |                                                 |
| Temperature Fluctuation                | 3.5°C                                                                                                                                                                                          |                                                |                                                |                                                 |
| Control Mode                           | High Performance Mode, Energy Saving Mode                                                                                                                                                      |                                                |                                                |                                                 |
| Number of Inner Doors                  | 2                                                                                                                                                                                              |                                                |                                                |                                                 |
| Exterior Material including Outer Door | Anti-Corrosion Powder Coated Steel                                                                                                                                                             |                                                |                                                |                                                 |
| Interior Material including Inner Door | Stainless Steel                                                                                                                                                                                |                                                |                                                |                                                 |
| Insulation                             | CFC-Free Polyurethane Foam (PURF) with 25 mm Vacuum Insulated Panels (VIP)                                                                                                                     |                                                |                                                |                                                 |
| Door Lock System                       | Built-in Handle Key Lock and Padlock Hinge                                                                                                                                                     |                                                |                                                |                                                 |
| Optional Safety Configuration          | Remote Monitoring Module, LN <sub>2</sub> /CO <sub>2</sub> Backup System                                                                                                                       |                                                |                                                |                                                 |
| Alarms                                 | High Temperature, Low Temperature, Power Failure, Door Open Timeout, Low Battery, Ambient Temperature Out-of-range, Condenser Dirty/Clog, Abnormal Voltage, Compressor Failure, Sensor Failure |                                                |                                                |                                                 |
| Data Export                            | USB Port                                                                                                                                                                                       |                                                |                                                |                                                 |
| Storage Racks / Cryoboxes              | Optional Add-on                                                                                                                                                                                |                                                |                                                |                                                 |
| Power Consumption (Running)            | 1.93kW                                                                                                                                                                                         | 2.08kW                                         | 2.05kW                                         | 2.10kW                                          |
| Energy Consumption (kW/24hr)           | 15.4                                                                                                                                                                                           | 15.9                                           | 14.5                                           | 16.3                                            |
| Noise Level (dBA)                      | 55                                                                                                                                                                                             | 56                                             | 58                                             | 60                                              |
| External Dimensions (W x D x H)        | 891 × 978 x 1945.5 mm (35.1" x 38.5" x 76.6")                                                                                                                                                  | 891 × 1141 x 1994.5 mm (35.1" x 44.9" x 78.5") | 1248 × 961 × 1994.5 mm (49.1" x 37.8" x 78.5") | 1179 x 1121 × 1994.5 mm (46.4" x 44.1" x 78.5") |
| Internal Dimensions (W x D x H)        | 606 × 575 × 1180 mm (23.8" x 22.6" x 46.4")                                                                                                                                                    | 606 × 738 × 1310 mm (23.8" x 29" x 51.6")      | 963 × 571 × 1350 mm (38" x 22.5" x 53.1")      | 894 × 718 x 1310 mm (35.2" x 28.3" x 51.6")     |
| Net Weight                             | 236 kg (520.3 lbs)                                                                                                                                                                             | 283 kg (624 lbs)                               | 316 kg (696.6 lbs)                             | 310 kg (683.4 lbs)                              |
| Environmental Requirements             | Ambient Temperature: 10°C to 32°C                                                                                                                                                              |                                                |                                                |                                                 |
|                                        | Power Supply: 220V±10% , Frequency: (50 ±1)Hz                                                                                                                                                  |                                                |                                                |                                                 |

## ORDERING INFORMATION

| MODELS    |               |                                                                                          |
|-----------|---------------|------------------------------------------------------------------------------------------|
| Item Code | Model Code    | Description                                                                              |
| 2180201   | UUS-410D-1-SS | Ultra-low Temperature Freezer; Upright; 14.5 cu ft (410 L), 220 VAC, 50 Hz; AVR Included |
| 2180202   | UUS-585D-1-SS | Ultra-low Temperature Freezer; Upright; 20.7 cu ft (585 L), 220 VAC, 50 Hz; AVR Included |
| 2180203   | UUS-730D-1-SS | Ultra-low Temperature Freezer; Upright; 25.8 cu ft (730 L), 220 VAC, 50 Hz; AVR Included |
| 2180204   | UUS-840D-1-SS | Ultra-low Temperature Freezer; Upright; 29.7 cu ft (840 L), 220 VAC, 50 Hz; AVR Included |

| ACCESSORIES |                                                 |                                                                                                    |
|-------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Item Code   | Model Code                                      | Description                                                                                        |
| 2180206     | CSR-1                                           | 304 Stainless Steel Cryogenic Storage Rack, 5 × 5 drawer type, for UUS-585D-1-SS and UUS-840D-1-SS |
| 2180207     | CSR-2                                           | 304 Stainless Steel Cryogenic Storage Rack, 5 × 4 drawer type, for UUS-410D-1-SS                   |
| 2180208     | CSR-3                                           | 304 Stainless Steel Cryogenic Storage Rack, 4 × 4 drawer type, for UUS-410D-1-SS                   |
| 2180209     | CSR-4                                           | 304 Stainless Steel Cryogenic Storage Rack, 4 × 4 drawer type, for UUS-730D-1-SS                   |
| 2180210     | PP-CSB-1                                        | Polypropylene Cryogenic Storage Box, 9 × 9 (81-well)                                               |
| 2180211     | PP-CSB-2                                        | Polypropylene Cryogenic Storage Box, 10 × 10 (100-well)                                            |
| 2180212     | PC-CSB-1                                        | Polycarbonate Cryogenic Storage Box, 9 × 9 (81-well)                                               |
| 2180213     | PC-CSB-2                                        | Polycarbonate Cryogenic Storage Box, 10 × 10 (100-well)                                            |
| 2180214     | CB-CSB-1                                        | Waterproof Cardboard Cryogenic Storage Box, 9 × 9 (81-well), White                                 |
| 2180215     | CB-CSB-2                                        | Waterproof Cardboard Cryogenic Storage Box, 10 × 10 (100-well), White                              |
| 2180216     | CB-CSB-3                                        | Waterproof Cardboard Cryogenic Storage Box, 9 × 9 (81-well), Blue                                  |
| 2180217     | CB-CSB-4                                        | Waterproof Cardboard Cryogenic Storage Box, 10 × 10 (100-well), Blue                               |
| 2180218     | CO <sub>2</sub> / LN <sub>2</sub> Backup System | CO <sub>2</sub> / LN <sub>2</sub> Backup System Control                                            |

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