Lexicon® II
with Platinum Controller

Ultra-low Temperature Freezer
Uncompromised Protection for your Samples

Model: UUS-714C
Esco believes that your samples are precious, unique, non-replaceable, and represent your life's work. The mission of an Ultra-low Temperature (ULT) Freezer is simply to protect your samples by keeping them cold. Until you say otherwise. If anything will interfere with this mission, your freezer should let you know before it becomes a problem.
INTRODUCTION

Ultra-Low Temperature (ULT) Freezers are widely used in scientific research for long-term storage of samples. As ULT freezers are often operated at -80°C continuously for years, reliability is of paramount importance to the researchers.

KEY FEATURES

LEXICON® II ULTRA-LOW TEMPERATURE FREEZERS

Uncompromised Protection for Your Samples

RELIABLE 5” INSULATION

With superb 5” thick insulation in place, Esco Lexicon cabinets provide superior performance.

3 OR 5 INDIVIDUAL INNER DOORS

- 3 or 5 individual inner doors can be opened independently to minimize sample exposure.
- Inner door slip-joint hinge design allows for easy door dismantling during maintenance and cleaning.
- Compatibility with existing racking system from competitors.
- Magnetic door contact for rapid closure.

EXCELLENT DOOR SEALS

- Triple gasket seal provides maximum protection against thermal intrusion.

MODERN REFRIGERATION COMPONENTS

- High-performance reliable compressors.
- System is optimized to provide maximum efficiency in even the most extreme ambient conditions.
Ultra-low Temperature Freezers

Lexicon® II

- 1" (25mm) diameter for easy access through wall
- Easy external monitoring port for redundant monitoring system.
- Optimally placed on top of the cabinet to eliminate thermal risk to your samples
- 2 sample ports configuration is available upon request.

SAMPLE PORT

QUALITY ESCO CONSTRUCTION
- Electrogalvanized steel with white oven-baked epoxy-polyester antimicrobial powder-coated finish.
- External surfaces are powder coated with Esco BACTOSIDE® to eliminate 99.9% of surface bacteria within 24 hours of exposure.
- Ensures healthier, safer and cleaner lab environment.

FRONT-MOUNTED CONDENSER FILTER
- Easily accessible without tools.
- Washable design saves money.

PRESSURE EQUALIZATION PORT (PEP)
- Heated port with spring-assisted mechanism to prevent icing on the vent
- Allows the freezer door to be opened shortly after adding samples.
- Located on the main door for easy cleaning

OPTIONAL CHART RECORDER
- Front-mounted.
- For independent temperature monitoring.
- Provides permanent record of thermal performance
PREDICTIVE FAILURE MONITORING SYSTEM (PFMS) (PATENT PENDING)

- What better way to protect samples than to alert users to an upcoming problem BEFORE the actual problem occurs
- Esco’s revolutionary predictive failure monitoring system knows how your freezer is supposed to perform. By carefully monitoring the freezer’s refrigeration system internals, the predictive failure monitoring system can alert users to many freezer problems while the freezer can still maintain the set temperature to protect your samples
- If an alert is necessary, the freezer can notify an assigned contact by email with the use of its Ethernet connected systems or by SMS messaging with the optional SMS modem.

EVENT MONITORING AND NETWORK NOTIFICATION SYSTEM

- Trying to figure out who accessed the freezer last? How long the door was opened? What freezer events happened when? The new freezer event monitoring system can record events for at least 15 year!
- The event monitoring and alert subsystem is always on guard to protect your samples. The system can classify alerts into yellow cautions and serious red conditions. If the door is left open for too long then a yellow alert is created. If the open door condition causes serious temperature change then the condition is escalated to a red alert.
- The controller always sounds an alarm locally but is smart enough to alert specific users by email depending on the severity of alert.
FREEZER SECURITY SYSTEM

• Who has access to your freezer and your samples? Ordinary freezers can use a key or a padlock for security but maintaining control with these mechanical items is very difficult. Keys can be lost or taken when workers leave the lab. To change the combination of a lock requires a new lock and if you have many freezers how do you keep track of all the combinations? It can be quite maddening.

• If security is enabled by the freezer administrator, the new Lexicon® II ULT with the Platinum controller maintains complete user accounts for everyone in the laboratory. Different users can have access to different freezer controller functions. For example, a technician can just gain access to samples. However, a researcher might have control over freezer temperature. Lastly, an administrator has access to input and remove user accounts and configure all freezer settings.

• In addition, the system administrator can define if freezer access must be done by a password, a security keycard, or both a password and a security keycard to open the electronic lock on the freezer keeping your samples as secure as possible! If a worker leaves the lab, the administrator can simply delete their account keeping the samples secure.
INTERACTIVE SAMPLE INVENTORY SYSTEM WITH ACCESS FROM THE FREEZER CONTROLLER – SAMPLETRACKER SAMPLE INVENTORY SYSTEM (PATENT PENDING)

- Finding your individual sample can be quite difficult in the cold frosty environment. Thus, SampleTracker is a user configurable database to keep track of your samples. This feature makes it easy to find your sample in the database and in the freezer. Search the database by one field or any number of user defined fields. Print reports for the samples you want with or without barcodes.
- Database searches can even be performed using the Lexicon® II Platinum controller. Input a user ID or scan a report with a barcode using a barcode scanner on the freezer and the Platinum controller will display the sample location right on the freezer screen. Simple! If you think you know where your sample is, enter the sample ID after retrieval to confirm the sample. If it is the right one, great! If not, the freezer screen will show you the location where to return the sample.
- The controller screen is used to check the sample you have taken out and when it is time to return the sample to storage, your samples will be verified and secured with the added security of knowing whether the laboratory is using the intended samples.

- SampleTracker is a multi-user program that provides a simple graphical interface to quickly perform all common sample handling tasks
- Use of templates allows easy lab/freezer configuration.
- No limit to the number of user defined fields.
- SampleTracker can be use independently for any brand and types of ULT freezer.
- Ability to make sample aliquots with complete graphical tracking of parents, daughter, and sub-daughter samples.
• Powerful search engine allows for customized queries

• Complete audit trail capability with 21 CFR Part 11 compliance.

• Directly interfaces to the Lexicon® II Platinum controller to perform searches and to check-out, check-in, and dispose of samples at the freezer. You can even attach photos of the samples taken at the freezer.
**ENGINEERING EXCELLENCE & STRICT PROCESS CONTROL**

- Strict evacuation protocols and process controls to ensure a clean, dry, and leak-free system
- Climate controlled assembly area to eliminate particulates and maintain a constant ambient temperature
- Computer controlled foaming machine to eliminate foaming variables
- Advanced data logging system to ensure all units are tested and analyzed properly and documented
- In-house designed and developed evacuation and charging process equipment specifically designed for the manufacture of ultra-low cascade refrigeration systems

**EXCEPTIONAL RELIABILITY**

Esco has used industry-accepted Highly Accelerated Life Testing (HALT) to stress test a large number of Lexicon Freezers at extreme conditions. The Lexicon freezers passed these extreme stress tests insuring a design that is optimized to protect your precious samples.

In accordance with ANSI/ASHRAE 72-2005 and ARI 1200-2006/2008 guidelines and as tested by a UL validated third party test lab, DNS USA, the Esco Lexicon ULT Freezer surpassed the performance of 5 major competitors with lower energy consumption, superior cabinet performance (as measured by warm-up time), and demonstrated a larger BTU refrigeration reserve capacity.

*Superior performance, lower energy costs, better protection.*

**QUALITY COMPONENTS**

All freezer components were selected from many tear-down and comparison tests. Only the most reliable components were selected.

- Danfoss® compressors are reliable and have high performance.
- Danfoss® filter drier is optimized for HFC refrigerants and uses 100% 3Å molecular sieve core for high moisture drying capacity. (Moisture equates to clogs in the system!)
- Condenser is oversized by design to provide a greater capacity for cooling.
- Condenser fans generate high airflow and have quiet operation.
- Energy efficient high performance oil separator eliminates solid contaminants along with excess oil from the system and enhances the entire system’s performance.
- One seamless full wrap copper evaporator tube with no joints reduces any possibility of leaks in the field.
- Highly efficient corrosion resistant and pressure resistant heat exchanger used for maximum heat transfer.
LOW ENERGY CONSUMPTION

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Average Power Consumption (KWh/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor S</td>
<td>24.6</td>
</tr>
<tr>
<td>Competitor L</td>
<td>28.6</td>
</tr>
<tr>
<td>Competitor H</td>
<td>24.5</td>
</tr>
<tr>
<td>Competitor T</td>
<td>23.8</td>
</tr>
<tr>
<td>Competitor TS</td>
<td>19.9</td>
</tr>
<tr>
<td>Esco UUS-714C-1, 230V, 50Hz</td>
<td>13.9</td>
</tr>
</tbody>
</table>

Energy Consumption (KWh/day) at T\text{set} = -80°C

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esco UUS-714C-1-SS or UUS-714C-1 energy usage (KWh/day)</td>
<td>13.9</td>
</tr>
<tr>
<td>Estimated conventional freezer energy usage (KWh/day)</td>
<td>24.3</td>
</tr>
<tr>
<td>10-year energy cost savings over conventional freezer in USD (based on 0.10$/KWh)</td>
<td>3,790</td>
</tr>
<tr>
<td>10-year carbon footprint reduction over conventional freezer in kg CO₂ (0.58 kg CO₂/KWh)</td>
<td>17,973</td>
</tr>
</tbody>
</table>

Environment Friendly

- Only CFC-free blowing agent is used.
- Only environmentally friendly CFC-free and HCFC-free HFC refrigerants are used.
- CFC and HCFC compounds have high impact on the ozone in the Earth’s atmosphere, whereas HFC does not contain chlorine and is not harmful to the earth's atmosphere.
- Biodegradable, high-performance synthetic polyolester oil is used.
**SUPERIOR SAMPLE PROTECTION**

### FAST PULL DOWN
- Pull down time is the time required to bring down the temperature of the ULT freezer from ambient to the set temperature.
- Esco Lexicon® II has a short pull down time which signifies an efficient refrigeration system*.

### FAST TEMPERATURE RECOVERY AFTER DOOR OPENING
- Esco Lexicon® II recovers temperature in minutes following a 1 minute door opening*. Fast recovery in temperature ensures integrity of stored samples.

### EXCELLENT UNIFORMITY
- Uniformity test measures the difference between the coldest spot and warmest spot in the freezer chamber when the freezer is operating at set temperature.
- Esco Lexicon® II has excellent uniformity under normal operating conditions*. This guarantees that all samples are at the correct temperature.

### EXTENDED WARM-UP TIME DURING A POWER FAILURE
- Warm-up time measures the time taken for temperature to rise up (from -80°C to -50°C) when the power is interrupted.
- With a robust insulation system in place, Esco Lexicon® II has the best warm-up time among the freezers compared on the right*. Slower warm-up during an extended power failure buys the user time for carrying out a back-up plan.
LARGE RESERVE CAPACITY

- Reserve capacity test records the lowest temperature the freezer is able to sustain when a heat source is placed in the freezer. This resembles real life situations when hot samples are placed in the freezer. The lower the temperature the freezer can sustain, the higher chance the freezer can maintain the set temperature when warm samples are placed in the freezer.
- Esco reserve capacity surpasses that of all major brands tested below.

LOW NOISE OPERATION

- According to OSHA 1910.95 Occupational Noise Exposure Regulation, the sound level of the work place has to fall below 90 dBA for an employee who works 8 hours/day.
- Total noise in a lab is highly dependent upon the equipment that emits the greatest amount of noise.
- Esco Lexicon® II ultra-low freezer has a noise level of approximately 56 dBA*. This ensures a quiet and pleasant working environment for lab users.

EASY TO SERVICE

- Embedded thermocouples in the foam for easy field troubleshooting.
- Filter driers are located at the deck for easy replacement.
- Adjustable main door hinge and latch.
- Condenser filter is conveniently located at the front of the freezer. This allows easy access for inspection, cleaning and/or changing.
- 5-year warranty on compressors, 5 years on complete system.

TESTING AND CERTIFICATION

The Esco Lexicon Ultra-Low Temperature Freezer is listed by Underwriters Laboratory (UL), to meet the requirements of both the U.S. and Canada standards for electrical/mechanical integrity.
INTELLIGENT DESIGN

EFFECTIVE COOLING TECHNOLOGY

HeatRecycler™ Technology allows efficient recycling of the heat generated by the system. This reduces power consumption and prolongs the life of the freezer.

- Two additional “heat exchangers” to channel heat energy.
- “Mullion heater” recycles excess heat from 1st stage compressor to heat up main door gasket. This prevents ice from forming on the gasket and provides easy door closing.

- 2-Stage cascade refrigeration system.
- Two fans are employed to draw consistent airflow from the front to the back of the freezer to cool the condenser.
- Two 1-hp hermetic compressors operated at a low speed for longer life.
- The compressors sit directly behind the fans and are air-cooled for better operating conditions.

SUPERIOR INSULATION SYSTEM

Maximum product protection is provided by Lexicon’s superior insulation system.

- 5” thick polyurethane foam is placed in the main cabinet and 4.5” on the door.
- Triple gasket seal protects against thermal leaks and prevents frost build-up.

QUICKOPEN™ FAST DOOR RE-OPEN SYSTEM

Esco designed Pressure Equalization Port (PEP) to relieve the vacuum that is formed inside the chamber after door opening. PEP is temperature-controlled to prevent ice formation on the port.

- Ergonomically designed door handle allows one-handed door opening.
GUIDE TO MODELS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Code</th>
<th>TYPE</th>
<th>Code</th>
<th>UNIT</th>
<th>Code</th>
<th>SIZE (L)</th>
<th>CONTROLLER</th>
<th>ELECTRICAL RATING</th>
<th>INTERNAL DOOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra-Low Temperature Freezer</td>
<td>U</td>
<td>Upright</td>
<td>U</td>
<td>Standard</td>
<td>S</td>
<td>363</td>
<td>363</td>
<td>Platinum</td>
<td>220-240 VAC, 50 Hz</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>480</td>
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<td>220-240 VAC, 60 Hz</td>
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<td></td>
<td></td>
<td>597</td>
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<td>5 Internal Door Configuration</td>
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<td></td>
<td></td>
<td></td>
<td>714</td>
<td>714</td>
<td></td>
<td>5 Internal Doors Configuration</td>
</tr>
</tbody>
</table>

HOME
- The button will take the user to the configured home screen.

LOGIN
- Pressing this icon takes the user to login screen.

MENU
- This button is disabled if user has not logged in. Once user has logged in, pressing this button takes the user to the menu screen.

HEALTH
- This icon will appear red/yellow to indicate a problem as per health conditions. Pressing this will load the Health status screen.

EVENT DATALOG
- Pressing this button, the user is shown the event log.

ALARM LOG
- This icon will flash if an alarm condition occurs. Pressing this icon will take the user to the Alarm log.

SLIDER
- This button will enable the user to view the hidden icons.
## GENERAL SPECIFICATIONS
### ULTRA-LOW TEMPERATURE FREEZERS

<table>
<thead>
<tr>
<th>Controller</th>
<th>Electrical Rating</th>
<th>Model (363L)</th>
<th>Model (480L)</th>
<th>Model (597L)</th>
<th>Model (714L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum (Touchscreen)</td>
<td>12/13A 230V 50Hz 1Ø</td>
<td>UUS-363C-1-SS (2180029)</td>
<td>UUS-480C-1-SS (2180030)</td>
<td>UUS-597C-1-SS (2180031)</td>
<td>UUS-714C-1-SS (2180032)</td>
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<td>UUS-363C-1-5D-SS (2180087)</td>
<td>UUS-480C-1-5D-SS (2180088)</td>
<td>UUS-597C-1-5D-SS (2180089)</td>
<td>UUS-714C-1-5D-SS (2180090)</td>
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<tr>
<td></td>
<td>12/13A 230V 60Hz 1Ø</td>
<td>UUS-363C-3-SS (2180033)</td>
<td>UUS-480C-3-SS (2180034)</td>
<td>UUS-597C-3-SS (2180035)</td>
<td>UUS-714C-3-SS (2180036)</td>
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<tr>
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<td></td>
<td>UUS-363C-3-5D-SS (2180091)</td>
<td>UUS-480C-3-5D-SS (2180092)</td>
<td>UUS-597C-3-5D-SS (2180093)</td>
<td>UUS-714C-3-5D-SS (2180094)</td>
</tr>
</tbody>
</table>

- **Temperature Range**: -50 to -86˚C
- **Ambient Temperature Range**: 15 to 32˚C (59 to 90˚F)
- **Capacity**: 363 L (12.8 cu ft) 480 L (16.9 cu ft) 597 L (21.1 cu ft) 714 L (25.2 cu ft)
- **Energy Consumption**: Approx. 10.08 kWh/day Approx. 11 kWh/day Approx. 11.52 kWh/day Approx. 13.92 kWh/day
- **Heat Emission**: 0.64 kW 0.67 kW 0.71 kW 0.78 kW
- **Pull Down Time In Minutes (from amb to -80)**: 276 347 353 473
- **Temperature Recovery Time After 1 Minute Door Opening**: 24 minutes 36 minutes 36 minutes 36 minutes
- **Warmest Temperature After 1 Minute Door Opening**: (-) 77.6 ˚C (-) 76.8 ˚C (-) 74.6 ˚C (-) 75.9 ˚C
- **Average Uniformity of Cycle (-80°C)**: 6.3 ˚C 6.3 ˚C 6.8 ˚C 6.9 ˚C
- **Warm-up Time from -80°C to -50°C (Minutes)**: 262 260 261 300
- **Noise Level in dB**: 55.9 dBA 56.3 dBA 56.1 dBA 59.1 dBA
- **External Dimension (W x D x H)**: 710 X 885 X 1980 mm (28" x 34.8" x 78") 855 X 885 X 1980 mm (33.6" x 34.8" x 78") 1000 X 885 X 1980 mm (39.4" x 34.8" x 78") 1145 X 885 X 1980 mm (45.1" x 34.8" x 78")
- **True Dimensions Platinum**: 815 x 945 x 1980 mm (32" x 37.2" x 78") 950 x 945 x 1980 mm (37.4" x 37.2" x 78") 1105 x 945 x 1980 mm (45.1" x 37.2" x 78") 1250 x 945 x 1980 mm (49.2" x 37.2" x 78")
- **Internal Dimensions**: 450 x 620 x 1300 mm (17.7" x 24.4" x 51.2") 595 x 620 x 1300 mm (23.4" x 24.4" x 51.2") 740 x 620 x 1300 mm (29.1" x 24.4" x 51.2") 885 x 620 x 1300 mm (34.8" x 24.4" x 51.2")
- **Electrical Rating**: 12/13A 230V 50 Hz 1Ø 12/13A 230V 50 Hz 1Ø 12/13A 230V 50 Hz 1Ø 12/13A 230V 50 Hz 1Ø

### Notes:
- Units were factory tested under controlled environmental conditions per Esco method. Esco does not guarantee identical results in the field under differing conditions.
- Units were tested using 3 inner door configuration and without samples inside.
- Original reports are available upon request.
1. Access Port
2. Main Door
3. Control Panel
4. Main Door Handle
5. Main Door Hinge
6. Condenser Filter Door
7. Embedded Pulls
8. Inner Door
9. PEP Port
10. Optional Chart Recorder Box
11. Omega Bracket
OPTIONS AND ACCESSORIES

Chart Recorder Kit (5070512-U)
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 freezer chamber temperature. This model offers a 6" chart of temperature data.

Kit includes the 6" temperature chart recorder, 1 pack pen replacement, 1 pack 7-day paper and universal outlet.

Temperature Chart and Pen Replacements for 6" Chart Recorder
• 6" Temperature Chart, 7day, 60/pack (1260019-U)
• Chart Recorder Pen Replacement 6pens/pack (1260020-U)

Standard Cardboard 100-cell Divider (1180063-U)
100-cell Dividers are made of 10x10, 7/16” cells and each divider holds 100 12 mm wide vials.

Standard Cardboard 81-cell Divider (1180064-U)
81-cell Dividers are made of 9x9, 1/4” cells and each divider holds 81 13 mm wide vials.

Standard Cardboard 64-cell Divider (1180065-U)
64-cell Dividers are made of 8x8, 9/16” cells and each divider holds 64 14 mm wide vials.

Standard Cardboard 49-cell Divider (1180066-U)
49-cell Dividers are made of 7x7, 5/8” cells and each divider holds 49 16 mm wide vials.

Standard Cardboard 3-inch Box (1180062-U)
Fiberboard boxes have the dimension of 130 x 130 x 80 mm (5.25” x 5.25” x 3”). All boxes do not come with dividers. Dividers have to be ordered separately.

Standard Cardboard 2-inch Box (1180061-U)
Fiberboard boxes have the dimension of 130 x 130 x 50 mm (5.25” x 5.25” x 2”). All boxes do not come with dividers. Dividers have to be ordered separately.

Standard Cardboard 100-cell Divider (1180063-U)
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Additional Shelving Kit
UUS-363 (5070901-U), UUS-480 (5070902-U)
UUS-597 (5070903-U), UUS-714 (5070904-U)
Each Lexicon® II ULT freezer comes standard with 2 shelves, 8 clips for three inner doors and 4 shelves, 16 clips for five inner doors. Extra shelves are available and each shelf comes with 4 clips.

SMS Module System
GPRS/GSM Modem accessory for SMS Alerts on Esco Lexicon® ULT freezers. The GPRS/GSM Modem is an optional accessory and is compatible with Lexicon II with Aalto Gold and Platinum Controller.
Ultra-low Temperature Freezers

LCO₂ Back-up System (5170438-U)
LCO₂ back-up system injects liquid CO₂ on demand when cabinet temperature warms to a pre-set level. Back-up system kits include all hardware except the supply cylinder. In the event of a power failure, the system will operate on a charged battery.
- Display Temp. Range: -40 to -70°C
- Resolution: 1°C
- Audio & visual alarms

Ice Scraper (1260040-U)
Ice scraper is available for cleaning ice built up on door gasket, PEP and other places in the freezer.

Cryo Safety Gloves (1260039-U)
Mid-arm style cryo safety gloves are available for use with ultra-cold surfaces. Cryo safety gloves protect hands and arm when inserting or removing inventory.

IQ/OQ Protocol (9010101-U)
IQ/OQ protocol document is available for verifying that the equipment has been installed in accordance with installation specifications and is functioning and operating at the intended operational parameters.

Sample Tracker
Sample inventory system to track all stored laboratory samples.

Voyager® Software Kit (5250001-U)
Esco Voyager® is a PC-based software package developed for the remote monitoring, datalogging and programming / device configuration of Esco controlled environment laboratory equipment. Compatible equipment includes Laboratory Ovens and Incubators, Low Temperature Incubator, CO₂ Incubators and Ultra-Low Temperature Freezer

PROtect - Independent and Redundant Monitoring System (5250001-U)
- PROtect has no dependency on the freezer electronics so in the event of a catastrophic failure that would prevent all other systems from notifying the user, PROtect can provide the necessary alerts to protect your irreplaceable samples.
- Multiple installations in remote buildings can be monitored and multiple users can access the system simultaneously.
- The monitored cold storage device communicates to the central monitoring computer by radio frequency transmission allowing for long communication distances and extended battery life.
- Can be used to monitor up to 99 systems on a single software package or more systems/multiple locations with an optional software package.
Modifiable Clip rack for Lexicon® II with 3 inner door configuration (5170527-U)
- Can fit standard 130 x 130 x 50 mm (5.25” x 5.25” x 2”) boxes and/or standard 130 x 130 x 80 mm (5.25” x 5.25” x 3”) boxes by changing the position of the clips.
- 28 boxes can be fitted for 2” cardboard box and 20 boxes can be fitted for the 3” cardboard box.
- Made of stainless steel and has handles. Each rack includes 12 L-Clips and 18 T-Clips.
- Size: 137 x 556 x 395 mm (W x D x H)

Modifiable Clip rack for Lexicon® II with 5 inner door configuration (5170526-U)
- Can fit standard 130 x 130 x 50 mm (5.25” x 5.25” x 2”) boxes and/or standard 130 x 130 x 80 mm (5.25” x 5.25” x 3”) boxes by changing the position of the clips.
- 16 boxes can be fitted for 2” cardboard box and 12 boxes can be fitted for the 3” cardboard box.
- Made of stainless steel and has handles. Each rack includes 6 L-Clips and 9 T-Clips.
- Size: 137 x 556 x 240 mm (W x D x H)

3” Drawer rack for Lexicon® II with 3 inner door configuration (5170644-U)
- Can fit standard 130 x 130 x 80 mm (5.25” x 5.25” x 3”) boxes
- Has 5 shelves and contain 4 boxes per shelf. (5 x 4 configuration)
- Made of stainless steel and has handles.
- Size: 139 x 551 x 441 mm (W x D x H)

3” Drawer rack for Lexicon® II with 5 inner door configuration (5170647-U)
- Can fit standard 130 x 130 x 80 mm (5.25” x 5.25” x 3”) boxes
- Has 3 shelves and contain 4 boxes per shelf. (3 x 4 configuration)
- Made of stainless steel and has handles.
- Size: 139 x 551 x 245 mm (W x D x H)

2” Drawer rack for Lexicon® II with 3 inner door configuration (5170645-U)
- Can fit standard 130 x 130 x 50 mm (5.25” x 5.25” x 2”) boxes
- Has 7 shelves and contain 4 boxes per shelf. (7 x 4 configuration)
- Made of stainless steel and has handles.
- Size: 139 x 551 x 398 mm (W x D x H)

2” Drawer rack for Lexicon® II with 5 inner door configuration (5170646-U)
- Can fit standard 130 x 130 x 50 mm (5.25” x 5.25” x 2”) boxes
- Has 4 shelves and contain 4 boxes per shelf. (4 x 4 configuration)
- Made of stainless steel and has handles.
- Size: 139 x 551 x 228 mm (W x D x H)
# Ultra-low Temperature Freezers

## Lexicon® II

### MODELS DESCRIPTION

<table>
<thead>
<tr>
<th>MODELS</th>
<th>DESCRIPTION</th>
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<tr>
<td>UUS-363C-1 (2180029)</td>
<td>Ultra-Low temperature Freezer; Upright; 13 cu ft (363 L)</td>
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<tr>
<td>UUS-480C-1 (2180030)</td>
<td>Ultra-Low temperature Freezer; Upright; 17 cu ft (480 L)</td>
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<tr>
<td>UUS-597C-1 (2180031)</td>
<td>Ultra-Low temperature Freezer; Upright; 21 cu ft (597 L)</td>
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<tr>
<td>UUS-714C-1 (2180032)</td>
<td>Ultra-Low temperature Freezer; Upright; 25 cu ft (714 L)</td>
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<td>UUS-363C-1-5D (2180087)</td>
<td>Ultra-Low temperature Freezer; Upright; 13 cu ft (363 L)</td>
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<tr>
<td>UUS-480C-1-5D (2180088)</td>
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<td>UUS-597C-1-5D (2180089)</td>
<td>Ultra-Low temperature Freezer; Upright; 21 cu ft (597 L)</td>
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<td>UUS-714C-1-5D (2180090)</td>
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### ACCESSORIES DESCRIPTION

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<thead>
<tr>
<th>ACCESSORIES</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>5070512-U</td>
<td>Recorder Kit (Chart recorder, 7-day chart paper, pens, universal outlet)</td>
</tr>
<tr>
<td>5070901-U</td>
<td>Additional Shelving Kit for 363 L</td>
</tr>
<tr>
<td>5070902-U</td>
<td>Additional Shelving Kit for 480 L</td>
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<tr>
<td>5070903-U</td>
<td>Additional Shelving Kit for 597 L</td>
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<tr>
<td>5070904-U</td>
<td>Additional Shelving Kit for 714 L</td>
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<tr>
<td>1180061-U</td>
<td>Standard Cardboard 2-inch Box</td>
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<tr>
<td>1180062-U</td>
<td>Standard Cardboard 3-inch Box</td>
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<tr>
<td>1180063-U</td>
<td>Standard Cardboard 100-Cell Divider</td>
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<tr>
<td>1180064-U</td>
<td>Standard Cardboard 81-Cell Divider</td>
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<tr>
<td>1180065-U</td>
<td>Standard Cardboard 64-Cell Divider</td>
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<tr>
<td>1180066-U</td>
<td>Standard Cardboard 49-Cell Divider</td>
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<tr>
<td>5170527-U</td>
<td>Modular Clip Rack with 3 inner door configuration</td>
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<tr>
<td>5170526-U</td>
<td>Modular Clip Rack with 5 inner door configuration</td>
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<tr>
<td>5170644-U</td>
<td>3” Drawer Rack with 3 inner door configuration</td>
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<tr>
<td>5170647-U</td>
<td>3” Drawer Rack with 5 inner door configuration</td>
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<td>5170645-U</td>
<td>2” Drawer Rack with 3 inner door configuration</td>
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<td>5170646-U</td>
<td>2” Drawer Rack with 5 inner door configuration</td>
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<tr>
<td>5170438-U</td>
<td>LCO₂, back-up system</td>
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<tr>
<td>1260040-U</td>
<td>Ice Scraper</td>
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<tr>
<td>1260039-U</td>
<td>Cryo Safety Gloves</td>
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<tr>
<td>9010101-U</td>
<td>IQ/OQ Documentation</td>
</tr>
<tr>
<td>5250001-U</td>
<td>Voyager® Software Kit with iRMAP (Intelligent Remote Monitoring Application Protocol)</td>
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<tr>
<td>1260019-U</td>
<td>6” Temperature Chart, 7-day, 60/pack</td>
</tr>
<tr>
<td>1260020-U</td>
<td>Chart Recorder Pen Replacement 6 pens/pack</td>
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<tr>
<td>8020001</td>
<td>SampleTracker</td>
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<td>(see PROtect brochure)</td>
<td>PROtect</td>
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<tr>
<td>1120240-U</td>
<td>SMS Module System</td>
</tr>
</tbody>
</table>
VOYAGER® SOFTWARE - CENTRAL CONTROL AND MONITORING SYSTEM

Extra Protection for Your Sample

- Lexicon® II freezers with the controller can communicate with Voyager® via RS485 connection.
- All information is kept securely inside the facility firewall. Once connected, Voyager® can notify users from a central location of any freezer alert or condition that can threaten sample safety or integrity.
- Voyager® can communicate with the available intelligent Remote Monitoring Application Protocol service (iRMAP).

INTELLIGENT REMOTE MONITORING APPLICATION PROTOCOL (IRMAP) SERVICE

- With iRMAP optional service, Esco will remotely monitor your Esco freezers in case of issues that might threaten your samples, Esco will call the supplied customer contact to provide assistance.
- iRMAP allows Esco to guard your samples 24 hours a day/7 days a week. Esco can even provide proactive service response if the predictive failure monitoring system finds a fault in your Esco freezer.
- If the user elects to transmit data outside of their facility, then Voyager® will encrypt the data twice and allow the freezer data to be monitored by iRMAP services at the Esco monitoring headquarters.
PROtect - INDEPENDENT AND REDUNDANT MONITORING SYSTEM

- PROtect has no dependency on the freezer electronics so, in the event of a catastrophic failure that would prevent all other systems from notifying the user, PROtect can provide the necessary alerts to protect your irreplaceable samples.
- Multiple installations in remote buildings can be monitored and multiple users can access the system simultaneously.
- The monitored cold storage device communicates to the central monitoring computer by radio frequency transmission allowing long communication distances and extended battery life.
- Can be used in ULT freezers (-86°C), cryogenic applications (-196°C), and standard lab refrigerators (4°C) and freezers (-30 to -40°C).
- Can be used to monitor up to 99 systems on a single software package or more systems/multiple locations with an optional software package.
The Esco Group of Companies is a global life sciences tools provider with sales in over 100 countries. The group is active in lab equipment, pharma equipment and medical devices. Manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, service and marketing subsidiaries are located in 12 major markets including the US, UK, Singapore, Japan, China and India. Regional distribution centers are located in the US, UK, and Singapore.