

Thermo Scientific Revco Ultra-Low Temperature Upright Freezers

Maximizing critical sample protection and storage



## **Innovative Features and Rewarding Benefits**

Features	Advantage	Benefit	Thermo Scientific Revco Model
Refrigeration System	Freezer is able to maintain cold temperature in the presence of high heat loads.	Quicker recovery after door openings, ensuring protection of critical samples.	Ultima PLUS Elite PLUS
	Consumes up to 15% less power than leading competitor.*	Cost of ownership is lower and is also friendlier to the environment.	Value PLUS
	Emits up to 15% less heat into the environment than leading competitor.*	Less heat is emitted into the lab environment, thus requiring less energy and HVAC equipment to keep the lab environment cool.	
	Noise levels are reduced by up to 40% over previous generation, decreasing interruption in the lab.	A quieter freezer allows the unit to be placed directly inside the lab, saving time.	
Microprocessor Control	Set point controls for the temperature and alarm system.	More precise settings and flexibility for temperature set points and alarm controls.	
PLUS Time Delay	Programmable feature delays restart of a bank of freezers after building power failure; allows stabilized power and a uniform re-start.	<ul> <li>Eliminates costs and down time associated with tripping a circuit breaker after a power failure.</li> <li>Reduces stress on the compressor and electrical components.</li> </ul>	
On Board Diagnostics	The system will report error codes, pointing the researcher or service technician to a probable cause.	Error indications will allow the researcher or service technician to diagnose problems faster, leading to lower down time inconvenience to the researcher and minimizing exposure to samples.	
Automatic Voltage Buck/Boost System	Buck will reduce incoming line voltage in the event the voltage is too high. Boost will provide additional voltage to incoming line voltage in the event voltage is too low.	This feature will add to the longevity of the freezer by stabilizing the voltage to the unit.	
Optional Integrated back-up System	Integrated back-up system is programmable at the user interface.	Provides user with assurance that samples will not be compromised in the event of a power outage.	
Recessed Power Switch	Power switch is recessed into the housing to keep the unit from inadvertently switching off.	Controls down time due to accidentally switching off the power supply.	
<b>Reinforced Shelves</b>	Stiffeners have been added to all stainless steel shelves for excessive loads and impacts.	Allows storage of high-load and non-standard samples, such as microplate hotels.	
Door Mounted Pressure Equalization Port (PEP)	The door mounted PEP does not take up valuable storage space and does not require maintenance (ice removal).	Periodic ice removal from PEP is not required, allowing the researcher to focus on his/her samples and not waste time maintaining the unit.	
Voltage Indicator (Power Monitor)	Voltage indicator button will provide incoming line voltage when pressed.	Provides fast and accurate information on incoming line voltage.	Ultima PLUS Elite PLUS
New Communication Outputs (Option)	4-20mA option for additional communication output devices.	Flexibility in options for connecting to remote alarm systems.	
Battery Readout	Readout is in actual voltage and not percentage of voltage in battery.	Provides user with assurance that alarms and displays will function in the event of a power outage.	

#### **Superior Thermal Performance**

In a series of controlled tests by a third party thermal evaluation laboratory, Thermo Scientific Revco Ultima PLUS ultra-low temperature freezers demonstrated high heat removal capacity and superior insulation properties while offering low energy consumption. BTU reserve (heat removal) and energy usage charts from this study are shown on the opposite page.

Summarized results and the raw data for the results are now available on the Creative Thermal Solutions Inc. maintained ftp site: ftp://creativethermal.dyndns.org/, user name: Revco, password: 2009test. These data will be available throughout 2010.



## Safeguarding Your Precious Samples with Advanced Technology and Exceptional Quality

Thermo Scientific Revco ultra-low temperature freezers combine the highest reliability and superior performance with cost-effective operation and innovative features. Our Revco<sup>®</sup> PLUS freezers feature an advanced technology platform, refrigeration, microprocessor controls and high-quality construction, delivering:

#### **Maximum Temperature Recovery**

Up to 20% more heat removal capacity than ordinary freezers, ensuring faster temperature recovery after door openings.\*

#### **Operational Efficiency**

Up to 15% less power to maintain cabinet temperature compared to other freezers.\*

#### **Comfortable Lab Environment**

Quiet, comfortable operation allows our ultra-low temperature freezers to reside directly in the lab, creating a more productive and efficient work environment.

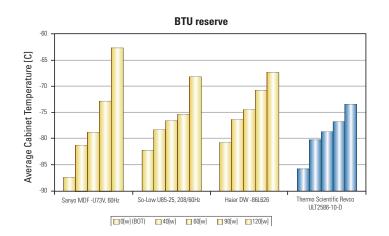
#### **Environmentally-Friendly**

Up to 15% less heat emitted into the lab environment, minimizing air conditioning costs.\*

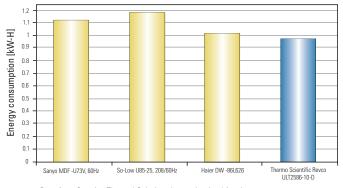
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\* Based on internal performance data



Energy usage at -80°C set point during normal cycling



Data from Creative Thermal Solutions Inc. maintained ftp site: ftp://creativethermal.dyndns.org/, user name: Revco, password: 2009test

#### Access Port:

1" (25 mm) diameter for easy access through wall

#### **Robust Cabinet Design:**

constructed of highstrength steel with a corrosion-resistant coating for long-life durability

#### **Cabinet Insulation:**

minimum 5" (127 mm) CFC-Free, foamed-in-place urethane insulation (foam cabinet models) for thermal protection and structural strength

#### **Remote Alarm Contacts:**

allows physical connection to external alarm/monitoring system providing alert capability if samples are at risk

#### Stand-Offs:

prevents freezer from being placed directly against the wall, ensuring proper air circulation to prevent over-heating

**Heavy Duty Casters:** new 2" (51 mm) locking, tandem wheel design; easy, smooth mobility

**Recorder:** optional 7-day, 6" (152 mm) circular chart for validation and regulatory requirements. Standard on certain models. Check with your salesperson for details.

PLUS Power Management System: low voltage surge protection, voltage buck/boost capabilities



**Integrated Door Handle**: one-hand operation; built-in key lock



Easy-to-Use Microprocessor Controls: programmable temperature/alarm set points and on-board diagnostics



Washable Filter: provides protection from dust on the condenser, causing reduced refrigeration performance and increased risk to samples

## **Quality, Reliable Construction**

Delivering the highest quality you expect, our Revco PLUS freezers feature robust, high-quality construction with your choice of foam or HD insulation, flexible storage and precision controls.

Secure Inner Doors: high-impact ABS plastic with recessed handle

**Outer Door Gasket:** unique door seal with five points of sealing contact protects against heat leaks and minimizes frost build-up

Insulated Outer Door: minimum 3.5" (89 mm) high strength foamed-in-place urethane insulation

High Density Insulation (Revco PLUS HD freezers): innovative composite thin wall design creates more storage without increasing cabinet footprint

Environmentally-Friendly, CFC-Free Refrigerants: DuPont® Suva 95 in low-stage models

Stainless Steel Interior Shelves: new reinforced shelves, developed for excessive loads and impacts



The world's largest ultra-low temperature freezer utilizes HD technology and saves valuable floor space

*Our 31.4 cubic foot HD model is also space efficient featuring the highest vial to footprint ratio on the market.* 

Our Revco racks are quality-built for ultimate sample protection. Our racks are completely interchangeable with all Revco PLUS freezers.



**Door-Mounted Pressure Equalization Port (PEP):** maintenance-free PEP allows for quick re-entries after door openings and eliminates the need for ice removal (PEP is hidden from view)



**Inventory Racks:** optional stainless steel with fiberboard boxes and dividers for complete sample protection



## Thermo Scientific Revco Ultima PLUS HD - 31.4 cu. ft.

*The Largest Capacity Ultra-Low Temperature Freezer Available* 

Our 31.4 cu. ft. freezer delivers the industry's highest capacity and vial to footprint ratio – store up to 70,000 sample vials in 35 inventory racks.

#### **More Capacity, Small Footprint**

Uses HD technology and design to allow 31.4 cu. ft. (889 L) of capacity in the footprint of a 25 cubic foot unit. Features seven optional racks per shelf and five shelf positions hold up to 700 2" (50mm) boxes, 525 3" (76mm) boxes or 3,430 microplates.

#### **Ultimate Sample Protection**

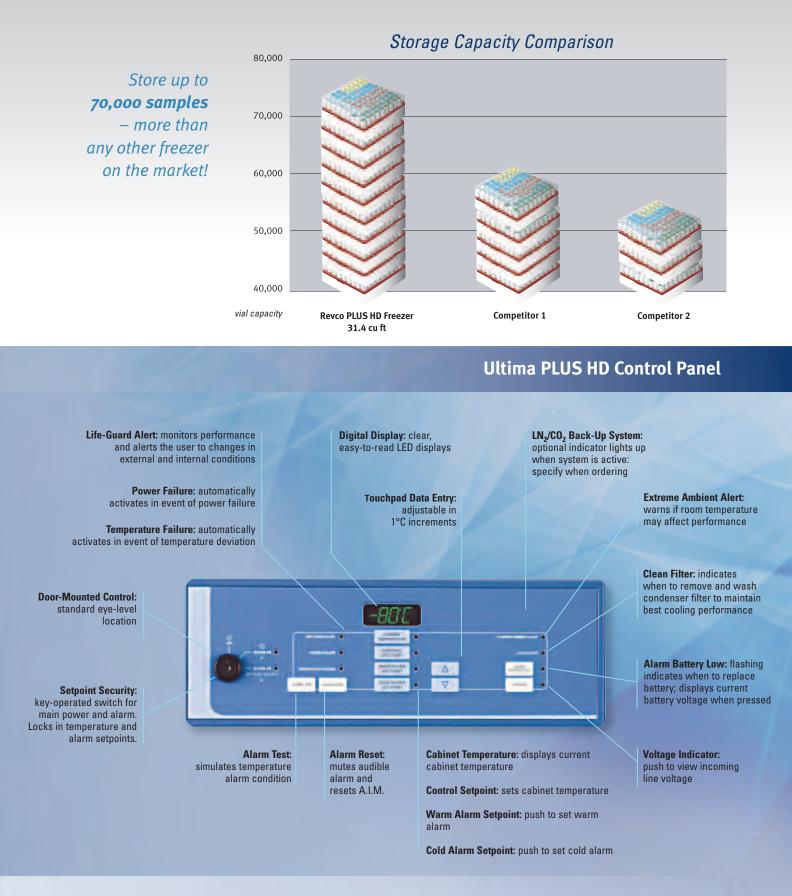
Each inner door operates independently on a continuous hinge to protect entire sample contents from ambient thermal exposure.

#### **Flexible Interior**

Five shelves, three adjustable in 1" (25 mm) increments, permit alternate inventory configuration.

#### **Sophisticated Microprocessor Controls**

Our Revco Plus HD line features sophisticated, easy-to-read microprocessor controls – delivering industry-leading performance to protect the integrity of your work.



#### **Additional Features:**

PLUS Power Management System:

- Low Voltage Surge Protection: minimizes voltage spikes; protects sensitive electronics
- Voltage Buck/Boost: protective device used to correct low or high voltage into the unit; protects and extends the life of electrical components

A.I.M. Automatic Incident Monitor: identifies temperature deviation (due to power failure or temperature failure) beyond alarm setpoint

**Battery Backup:** continuous charge provides full function to control panel in case of power failure

Chart recorder, RS232 output and 4-20 milliamp output

#### On-Board Diagnostics:

continuously monitors sensors to ensure proper performance



All Thermo Scientific Revco PLUS freezers feature programmable, easy-to-use microprocessor controls. Our control systems offer real-time visibility and precise setpoints on temperature, power and other critical measurements to continuously ensure the security of your work.

## Thermo Scientific Revco Ultima PLUS

Our Ultima PLUS freezers are suited for laboratories that require sophisticated electronic monitors and alarms for the highest level of sample protection.

### **Ultima PLUS Control Panel**

Life-Guard Alert: monitors performance and alerts the user to changes in external and internal conditions

**Power Failure:** automatically activates in event of power failure

Temperature Failure: automatically activates in event of temperature deviation

Door-Mounted Control: standard eye-level location

Setpoint Security: key-operated switch for main power and alarm. Locks in temperature and alarm setpoints. **Digital Display:** clear, easy-to-read LED displays

Touchpad Data Entry: adjustable in 1°C increments LN<sub>2</sub>/CO<sub>2</sub> Back-Up System: optional indicator lights up when system is active: specify when ordering

> Extreme Ambient Alert: warns if room temperature may affect performance

**Clean Filter:** indicates when to remove and wash condenser filter to maintain best cooling performance

Alarm Battery Low: flashing indicates when to replace battery; displays current battery voltage when pressed

**Voltage Indicator:** push to view incoming line voltage

Alarm Reset: mutes audible alarm and resets A.I.M.

Alarm Test:

alarm condition

simulates temperature

**Cabinet Temperature:** displays current cabinet temperature

Control Setpoint: sets cabinet temperature

Warm Alarm Setpoint: push to set warm alarm

Cold Alarm Setpoint: push to set cold alarm

## Ultima PLUS & Elite PLUS



## Thermo Scientific Revco Elite PLUS

Our Elite PLUS freezers are suited for environments that require a moderate level of electronic monitors and alarms for sample protection.

### **Elite PLUS Control Panel**

**Power Failure:** automatically activates in event of power failure

Temperature Failure: automatically activates in event of temperature deviation **Digital Display:** clear, easy-to-read LED displays **Cabinet Temperature:** displays current cabinet temperature

Control Setpoint: sets cabinet temperature

Warm Alarm Setpoint: push to set warm alarm

Cold Alarm Setpoint: push to set cold alarm

**LN<sub>2</sub>/CO<sub>2</sub> Back-Up System:** optional indicator lights up when system is active: specify when ordering

**Clean Filter:** indicates when to remove and wash condenser filter to maintain best cooling performance

Alarm Battery Low: flashing indicates when to replace battery; displays current battery voltage when pressed

Voltage Indicator: push to view incoming line voltage

Key Operation: key-operated switch for main power and alarm activation

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Alarm Test: simulates temperature alarm condition

The average

Alarm Reset: mutes audible alarm and sets A.I.M.

Touchpad Data Entry: adjustable in 1°C increments

# Value PLUS

## Thermo Scientific Revco Value PLUS

Our Value PLUS freezers are suited for laboratories that require a fundamental level of electronic monitors and alarms without compromising sample protection.

### Value PLUS Control Panel



Control: standard knee-level location

**Key Operation:** key-operated switch for main power and alarm activation

Audible Warning: activates automatically in event of temperature deviation Power Failure: automatically activates in event of power failure

Digital Display: clear, easy-to-read LED displays **Touchpad Data Entry:** adjustable in 1°C increments; alarm setpoint in 5°C increments

**Cabinet Temperature:** displays current cabinet temperature

Control Setpoint: sets cabinet temperature

LN<sub>2</sub>/CO<sub>2</sub> Back-Up System: optional indicator lights up when system is active: specify when ordering

#### Additional Features: for Thermo Scientific Revco PLU<u>S Freezers</u>

#### PLUS Power Management System:

- Low Voltage Surge Protection: minimizes voltage spikes;
   protects sensitive electronics
- Voltage Buck/Boost: protective device used to correct low or high voltage into the unit; protects and extends the life of electrical components

A.I.M. Automatic Incident

**Monitor:** identifies temperature deviation (due to power failure or temperature failure) beyond alarm setpoint\*

Battery Backup: continuous charge provides full function to control panel in case of power failure

#### **On-Board Diagnostics:** continuously monitors sensors to ensure proper performance

#### Thermo Scientific Revco Ultima PLUS HD Upright Freezers

#### Temperature Range -50°C to -80°C

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)	
ULT2586-10HD-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)				
ULT2586-10HD-D	24 7 (202)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.6 x 34.1 x 24.8 (1284 x 867 x 629) (1971 x 1064 x 935)	770 (349)		
ULT2586-10HD-V	24.7 (702)	230V/50 Hz 1Ø	12/16 (European plug)		(1971 x 1064 x 935)	770 (343)	
ULT2586-10HD-W		230V/50 Hz 1Ø	12/13 (British plug)	1			
ULT3280-10HD-D		208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	E0 4 y 20 2 y 27 4	77 6 x 47 0 x 26 0		
ULT3280-10HD-V	31.4 (888)	230V/50 Hz 1Ø	12/16 (European plug)	- 50.4 x 39.3 x 27.4 - (1281 x 997 x 695) - (1281 x 997 x 695) - (1281 x 997 x 695)	(1971 x 1194 x 935)	830 (376)	
ULT3280-10HD-W		230V/50 Hz 1Ø	12/13 (British plug)	- (1201 x 337 x 035) (1971 x 1194 x 935)			

#### Thermo Scientific Revco Ultima PLUS Upright Freezers

#### Temperature Range -50°C to -86°C

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)
ULT1786-10-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT1786-10-D	17.2 (487)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 25	77.8 x 36.7 x 35.5	720 (326)
ULT1786-10-V	17.2 (407)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 597 x 635)	(1975 x 931 x 901)	
ULT1786-10-W		230V/50 Hz 1Ø	12/13 (British plug)			
ULT2186-10-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)	50.5 x 28.5 x 24.3 (1283 x 724 x 616) (1275 x 1056 x 920)		
ULT2186-10-D	20.2 (572)	208-230V/60 Hz 1Ø	12/15 ((NEMA 6-15 plug)		77.8 x 41.7 x 36.2	770 (349)
ULT2186-10-V	20.2 (372)	230V/50 Hz 1Ø	12/16 (European plug)		770 (349)	
ULT2186-10-W		230V/50 Hz 1Ø	12/13 (British plug)			
ULT2586-10-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT2586-10-D	24.4 (691)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 34.5 x 24.3	77.8 x 47.7 x 36.2	830 (376)
ULT2586-10-V	24.4 (091)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 876 x 616)	(1975 x 1210 x 920)	030 (370)
ULT2586-10-W		230V/50 Hz 1Ø	12/13 (British plug)			

#### Thermo Scientific Revco Elite PLUS Upright Freezers

#### Temperature Range -50°C to -86°C

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)	
ULT1786-6-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)				
ULT1786-6-D	17.2 (487)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 28.5 x 24.3 (1283 x 597 x 635)	77.8 x 36.7 x 35.5	720 (326)	
ULT1786-6-V	17.2 (407)	230V/50 Hz 1Ø	12/16 (European plug)		(1975 x 931 x 901)		
ULT1786-6-W		230V/50 Hz 1Ø	12/13 (British plug)				
ULT2186-6-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)		77.8 x 41.7 x 36.2	770 (349)	
ULT2186-6-D	20.2 (572)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 28.5 x 24.3			
ULT2186-6-V	20.2 (372)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 724 x 616)	(1975 x 1056 x 920)		
ULT2186-6-W		230V/50 Hz 1Ø	12/13 (British plug)	1			
ULT2586-6-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)				
ULT2586-6-D	224.4 (691)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 34.5 x 24.3	77.8 x 47.7 x 36.2	920 (276)	
ULT2586-6-V	224.4 (091)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 876 x 616)	(1975 x 1210 x 920)	830 (376)	
ULT2586-6-W		230V/50 Hz 1Ø	12/13 (British plug)				

#### **Thermo Scientific Revco Value PLUS Upright Freezers**

#### Temperature Range -50°C to -86°C

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)
ULT1786-4-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT1786-4-D	17.2 (487)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 25	77.8 x 36.7 x 35.5	720 (326)
ULT1786-4-V		230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 597 x 635)	(1975 x 931 x 901)	720 (320)
ULT1786-4-W		230V/50 Hz 1Ø	12/13 (British plug)	]		
ULT2186-4-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)	50.5 x 28.5 x 24.3 77.8 x 41.7 x 36.2		
ULT2186-4-D	20.2 (572)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)		77.8 x 41.7 x 36.2	770 (349)
ULT2186-4-V	20.2 (572)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 724 x 616)	(1975 x 1056 x 920)	
ULT2186-4-W		230V/50 Hz 1Ø	12/13 (British plug)			
ULT2586-4-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT2586-4-D	24.4 (691)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 34.5 x 24.3	77.8 x 47.7 x 36.2	830 (376)
ULT2586-4-V	24.4 (091)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 876 x 616)	(1975 x 1210 x 920)	030 (370)
ULT2586-4-W		230V/50 Hz 1Ø	12/13 (British plug)			



## -40°C Freezers

## Thermo Scientific Revco -40°C freezers are built to meet the highest standards for performance and safety.

Our Ultima II freezers feature convenient eye-level microprocessor controls and comprehensive monitoring technology. Our Elite freezers feature microprocessor, alarm/monitor system and rugged construction while our Value freezers offer a cost-effective alternative without compromising sample protection.

### **Ultima II Control Panel**



#### **Control System**

- Exclusive Thermo Scientific IntrLogic microprocessor control system with touchpad data entry and digital display of all functions
- Setpoint security system with key-operated switch for main power and alarm locks in temperature and alarm setpoints
- On-board power monitoring with digital readout of incoming line voltage
- Built-in surge suppressor minimizes effect of voltage spikes from incoming electrical service

#### **Alarm System**

- A.I.M. (Automatic Incident Monitor) identifies any temperature deviation beyond alarm setpoints, with rapid flash for current event, slow flash if event was self-corrected;
   A.I.M. archives most deviated temperature
- Adjustable safety alarm with automatic, continuous charge battery backup provides full alarm function in case of power failure
- Power failure or temperature deviation triggers audible and visual warning
- Digital battery indicator displays battery capacity; flashing low battery indicator signals when to replace battery
- Touchpad alarm test function physically warms internal probe to simulate alarm condition
- RS-232 data port with system software package
- Exterior alarm contacts for connection to remote monitoring system

#### **Monitoring System**

- Lifeguard compressor protection monitors performance and automatically adjusts to internal and external conditions, extending compressor life
- Extreme ambient alert warns if room temperature may affect performance
- Voltage boost indicator signals of low source voltage below safe parameters and indicates voltage boost system is activated
- Surge suppressor indicator alerts the need to check intercept fuse
- Clean filter indicator light advises when to remove and wash condenser filter

## Ultima II & Elite



#### **Control System**

- Microprocessor control system with touchpad data entry and digital display of all functions
- Key-operated switch for main power and alarm
- Independent operating temperature and high/low limit alarm functions with factory-set defaults for quick start-up, all setpoints adjustable in 1°C increments

#### **Electrical System**

- On-board power monitoring with digital readout of incoming line voltage
- Optional free-standing surge suppressor minimizes effect of voltage spikes from incoming electrical service

#### Alarm System

- A.I.M. (Automatic Incident Monitor) identifies any temperature deviation beyond alarm setpoints, with rapid flash for current event, slow flash if event was self-corrected; A.I.M. archives most deviated temperature
- Adjustable safety alarm with automatic, continuous charge battery backup provides full alarm function in case of power failure
- Power failure or temperature deviation triggers audible and visual warning
- Digital battery indicator displays battery capacity; flashing low battery indicator advises when to replace battery
- Touchpad alarm test function physically warms internal probe to simulate alarm condition
- RS-232 data port with system software package
- Exterior alarm contacts for connection to remote monitoring system

#### **Monitoring System**

- Voltage boost indicator signals of low source voltage below safe parameters and indicates voltage boost system is activated
- Clean filter indicator light advises when to remove and wash condenser filter

## **Thermo Scientific Revco Value** -40°C Freezers

**Our Value freezers offer a cost-effective alternative** for a variety of industrial process and non-critical storage uses. They feature Thermo Scientific Legaci refrigeration with rugged cabinet construction and a reliable solid-state control for basic but dependable operation.

Value Control Panel Key operated Adjustable **Push-button** main power temperature setpoint display switch setpoint **Control System Electrical System** Alarm System • Solid-state control system with • Automatic voltage boost Integrated overtemperature safety adjustable temperature setpoint compensates for low voltage alarm with battery back-up and and brownout conditions audible warning of temperature • Digital temperature display deviation • Optional free-standing surge • Push-button setpoint display

suppressor minimizes effect of

voltage spikes from incoming

electrical service

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• Exterior alarm contacts for connection to remote monitoring system

• Key-operated main power switch

### THERMO SCIENTIFIC REVCO -40C SPECIFICATIONS

### Ultima II -40°C Upright Freezers

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)
ULT-1340-9-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)		77.5 x 37.1 x 31.3	
ULT-1340-9-D	13.4 (379)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 19.5		595 (270)
ULT-1340-9-V	13.4 (373)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 597 x 495)	(1969 x 942 x 795)	555 (270)
ULT-1340-9-W	1	230V/50 Hz 1Ø	12/13 (British plug)			
ULT-1740-9-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-1740-9-D	17 2 (107)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 25.0 (1283 x 597 x 635)	77.5 x 37.1 x 36.8 (1969 x 942 x 935)	630 (286)
ULT-1740-9-V	17.2 (487)	230V/50 Hz 1Ø	12/16 (European plug)			
ULT-1740-9-W	1	230V/50 Hz 1Ø	12/13 (British plug)			
ULT-2140-9-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)		77.5 x 42.2 x 36.1	(200)
ULT-2140-9-D	20.2 (572)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 28.5 x 24.3		
ULT-2140-9-V	20.2 (572)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 724 x 617)	(1969 x 1072 x 917)	680 (309)
ULT-2140-9-W	1	230V/50 Hz 1Ø	12/13 (British plug)			
ULT-2540-9-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-2540-9-D	24.4 (691)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 34.5 x 24.3	77.5 x 48.1 x 36.1	770 (350)
ULT-2540-9-V	24.4 (091)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 876 x 617)	(1969 x 1222 x 917)	770 (550)
ULT-2540-9-W		230V/50 Hz 1Ø	12/13 (British plug)			

### Elite -40°C Upright Freezers

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)
ULT-1340-5-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-1340-5-D	13.4 (379)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 19.5	77.5 x 37.1 x 31.3	595 (270)
ULT-1340-5-V	13.4 (3/3)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 597 x 495) (1969 x 942 x 795)	(1969 x 942 x 795)	595 (270)
ULT-1340-5-W		230V/50 Hz 1Ø	12/13 (British plug)	]		
ULT-1740-5-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-1740-5-D	17.2 (487)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)		77.5 x 37.1 x 36.8	630 (286)
ULT-1740-5-V	17.2 (407)	230V/50 Hz 1Ø	12/16 (European plug)		(1969 x 942 x 935)	030 (200)
ULT-1740-5-W		230V/50 Hz 1Ø	12/13 (British plug)	]		
ULT-2140-5-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)		77.5 x 42.2 x 36.1	(200)
ULT-2140-5-D	20.2 (572)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 28.5 x 24.3		
ULT-2140-5-V	20.2 (372)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 724 x 617)	(1969 x 1072 x 917)	680 (309)
ULT-2140-5-W		230V/50 Hz 1Ø	12/13 (British plug)	]		
ULT-2540-5-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-2540-5-D	24.4 (691)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 34.5 x 24.3	77.5 x 48.1 x 36.1	770 (350)
ULT-2540-5-V	24.4 (091)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 876 x 617)	(1969 x 1222 x 917)	110 (330)
ULT-2540-5-W		230V/50 Hz 1Ø	12/13 (British plug)			

## Value Upright -40°C Freezers

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)	
ULT-1340-3-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)				
ULT-1340-3-D	13.4 (379)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 19.5	77.5 x 37.1 x 31.3	595 (270)	
ULT-1340-3-V	13.4 (375)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 597 x 495)	(1969 x 942 x 795)	595 (270)	
ULT-1340-3-W	]	230V/50 Hz 1Ø	12/13 (British plug)	]			
ULT-1740-3-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)				
ULT-1740-3-D	17 2 (107)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 25.0 (1283 x 597 x 635)	77.5 x 37.1 x 36.8 (1969 x 942 x 935)	630 (286)	
ULT-1740-3-V	17.2 (487)	230V/50 Hz 1Ø	12/16 (European plug)				
ULT-1740-3-W	]	230V/50 Hz 1Ø	12/13 (British plug)				
ULT-2140-3-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)		77.5 x 42.2 x 36.1	C00 (200)	
ULT-2140-3-D	20.2 (572)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 28.5 x 24.3			
ULT-2140-3-V	20.2 (372)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 724 x 617)	(1969 x 1072 x 917)	680 (309)	
ULT-2140-3-W	1	230V/50 Hz 1Ø	12/13 (British plug)				
ULT-2540-3-A		115V/60 Hz 1Ø	16/20 (NEMA 5-20 plug)				
ULT-2540-3-D	24.4 (691)	208-230V/60 Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 34.5 x 24.3	77.5 x 48.1 x 36.1	770 (350)	
ULT-2540-3-V	24.4 (091)	230V/50 Hz 1Ø	12/16 (European plug)	(1283 x 876 x 617)	(1969 x 1222 x 917)	770 (330)	
ULT-2540-3-W		230V/50 Hz 1Ø	12/13 (British plug)				

### Space Saving -86°C Ultra-Low Temperature Freezers

Our Thermo Scientific Revco 379 L (13.4 cu. ft.) upright freezers are precision-engineered to provide reliable, user-friendly operation and the safe, protected ultra-low temperature environment your precious samples require.



## Ultima II – for critical storage needs

Our Ultima II control features an intuitive microprocessor control system that offers 4 – 20 milliamp output option for remote temperature monitoring capabilities, as well as dry contacts for remote alarm monitoring.

- Exclusive Thermo Scientific IntrLogic microprocessor control system with touchpad data entry and digital display of all functions
- A.I.M. (Automatic Incident Monitor identifies any temperature deviation beyond alarm setpoints, with rapid flash for current event, slow flash if event was self-corrected;
   A.I.M. archives most deviated temperature
- Lifeguard compressor protection monitors performance and automatically adjusts to internal and external conditions, extending compressor life, further protecting precious samples

## Elite – high performance and safety standards

Our Elite control incorporates an easy-to-use, solid-state control system with dry contacts for remote alarm monitoring.

- Digital temperature display
- Key-operated main power switch
- Integrated overtemperature safety alarm with battery back-up and audible warning of temperature deviation

## Value -cost-effective for non-critical storage

Our Value freezers feature rugged cabinet construction and a reliable solid-state control for basic but dependable operation.

- Digital temperature display
- Key-operated main power switch
- Integrated overtemperature safety alarm with battery back-up and audible

#### Thermo Scientific Revco 379L (13.4 cu. ft.) -86°C Freezers Specifications

#### Temperature Range -50°C to -86°C

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)
ULT-1386-9-A (Ultima II)		115V/60Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-1386-9-D (Ultima II)	13.4	208-230V/50Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 19.5	77.5 x 37.1 x 31.3	297
ULT-1386-9-V (Ultima II)	(379)	230V/50Hz 1Ø	12/16 (European plug)	(1283 x 597 x 495)	(1969 x 942 x 795)	(655)
ULT-1386-9-W (Ultima II)		230V/50Hz 1Ø	12/13 (British plug)			
ULT-1386-5-A (Elite)		115V/60Hz 1Ø	16/20 (NEMA 5-20 plug)	50.5 x 23.5 x 19.5 (1283 x 597 x 495)	77.5 x 37.1 x 31.3 (1969 x 942 x 795)	297 (655)
ULT-1386-5-D (Elite)	13.4	208-230V/50Hz 1Ø	12/15 (NEMA 6-15 plug)			
ULT-1386-5-V (Elite)	(379)	230V/50Hz 1Ø	12/16 (European plug)			
ULT-1386-5-W (Elite)		230V/50Hz 1Ø	12/13 (British plug)			
ULT-1386-3-A (Value)		115V/60Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-1386-3-D (Value)	13.4	208-230V/50Hz 1Ø	12/15 (NEMA 6-15 plug)	50.5 x 23.5 x 19.5	77.5 x 37.1 x 31.3	297
ULT-1386-3-V (Value)	(379)	230V/50Hz 1Ø	12/16 (European plug)	(1283 x 597 x 495)	(1969 x 942 x 795)	(655)
ULT-1386-3-W (Value)		230V/50Hz 1Ø	12/13 (British plug)			

## Space-Saving

Our Thermo Scientific Revco Value Series SI 311 L (11 cu. ft.) upright freezers feature exclusive thin wall SI technology

#### **SI Technology**

 Highly-efficient, innovative thin wall insulation technology allows expanded interior storage without increasing the exterior cabinet footprint

#### **Cabinet Features**

- Five inner doors constructed of high impact plastic create independent storage compartments
- Each inner door is mounted on a continuous hinge for optimal sample protection and increased service life
- Inner doors operate independently to minimize sample exposure
- Pressure Equalization Port (PEP) rapidly equalizes cabinet pressure by metering controlled amounts of atmospheric air into the storage chamber after door opening

#### **Control, Alarms and Monitoring Systems**

 Solid-state electronic controller with easy-to-read LED digital temperature display is door-mounted for quick viewing and temperature adjustment

STATE 1

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- Key-operated main power switch engages preset over-temperature alarm
- Automatic voltage boost compensates for low voltage and brown-out conditions
- Adjustable temperature control
- Exterior alarm contacts provide connections to remote monitoring system
- Optional free-standing surge suppressor minimizes effect of voltage spikes from incoming electrical service

#### Thermo Scientific Revco Value Series SI Freezers Specifications

## Temperature Range -50°C to -86°C

Model No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight Ibs (kg)
ULT-1186-3SI-A		115 V, 60 Hz 1Ø	16/20 (NEMA 5-20 plug)			
ULT-1186-3SI-D	11	208/230 V, 60 Hz 1Ø	7.5/15 (NEMA 6-15 plug)	50.5 x 18.5 x 20.0	75.5 x 26.5 x 37.0	274
ULT-1186-3SI-V	(311)	230 V, 50 Hz 1Ø	7.5/15 (European plug)	(1283 x 470 x 508)	(1918 x 673 x 940)	(605)
ULT-1186-3SI-W		230 V, 50 Hz 1Ø	7.5/15 (British plug)			

## **Thermo Scientific Racks for Revco Ultra-Low Temperature Upright Freezers**

	Cat. No.	Description W x H x D inches (mm)	Freezer Volume cu. ft. (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Racks/ Shelf	Total Racks/ Freezer	
C. C. C. C. C. C.	398332	Sliding drawer rack for 2" boxes $5.5 \times 9.4 \times 16.6$	11 (311)	12	-	3	15	
	000002	(140 x 239 x 422)	13.4 (379)	12	_	4	20	
		Sliding drawer rack for 2" boxes 5.5 x 9.4 x 22 (140 x 220 x 550)	17.2 (487)	16	-	4	20	
	398331		20.2 (572)	16	-	5	25	
The States		(140 x 239 x 559)	24.4 (691)	16	-	6	25 30	
Carly P								
	398329	<b>Sliding drawer rack for 2" boxes</b> 5.5 x 9.4 x 26.3 (140 x 239 x 668)	31.4 (889)	20	-	7	35	
		Complete 2" box inventory kit for 31. includes 35 sliding drawer racks and		with 100 ce	ell dividers			
		Shelf kit 2" box inventory kit for 31.4 cu. ft. includes 7 sliding drawer racks and 140, 2" boxes with 100 cell dividers						



	Sliding drawer rack for 3" boxes	17.2 (487)	-	12	4	20
398330		20.2 (572)	-	12	5	25
(140 x 233 x 333)	24.4 (691)	_	12	6	30	



	Sliding drawer rack for 3" boxes					
398328	5.5 x 9.4 x 26.3 (140 x 239 x 668)	31.4 (889)	-	15	7	35

Shelf kit 3" box inventory kit for 31.4 cu. ft., includes 7 sliding drawer racks and 105, 3" boxes with 100 cell dividers 398306

# Racks >> Vials



Cat. No.	Description W x H x D inches (mm)	Freezer Volume cu. ft. (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Racks/ Shelf	Total Racks/ Freezer
398324	Adjustable side access rack 5.4 x 9.4 x 16.1	11 (311)	12	9	3	15
JJ0JZ4	(137 x 239 x 409)	13.4 (379)	12	9	4	20

398320 Complete 2" box inventory kit for 13.4 cu. ft. includes 20 side access racks and 240, 2" boxes with 100 cell dividers

398315 Shelf kit 2" box inventory kit for 13.4 cu. ft. includes 4 side access racks and 48, 2" boxes with 100 cell dividers



308325	<b>Side access rack for 3" boxes</b> 5.4 × 9.4 × 16.1	11 (311)	-	9	3	15
(137 x 239 x 409)	13.4 (379)	-	9	4	20	

#### 398310 Shelf kit 3" box inventory kit for 13.4 cu. ft.

includes 4 side access racks and 36, 3" boxes with 100 cell dividers

	Adjustable side access rack	17.2 (487)	16	12	4	20
398326	•	20.2 (572)	16	12	5	25
	(137 X 239 X 301)	24.4 (691)	16	12	6	30

- 398319 Complete 2" box inventory kit for 17.2 cu. ft. includes 20 side access racks and 320, 2" boxes with 100 cell dividers
- 398318 **Complete 2" box inventory kit for 20.2 cu. ft.** includes 25 side access racks and 400, 2" boxes with 100 cell dividers
- 398317 Complete 2" box inventory kit for 24.4 cu. ft. includes 30 side access racks and 480, 2" boxes with 100 cell dividers
   398314 Shelf kit 2" box inventory kit for 17.2 cu. ft. includes 4 side access racks and 64, 2" boxes with 100 cell dividers
- 398313 Shelf kit 2" box inventory kit for 20.2 cu. ft. includes 5 side access racks and 80, 2" boxes with 100 cell dividers
  398312 Shelf kit 2" box inventory kit for 24.4 cu. ft.
  - includes 6 side access racks and 96, 2" boxes with 100 cell dividers

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	Side access rack for 3" boxes	17.2 (487)	-	12	4	20
398327		20.2 (572)	-	12	5	25
(1.		24.4 (691)	-	12	6	30

- 398309 Shelf kit 3" box inventory kit for 17.2 cu. ft. includes 4 side access racks and 48, 3" boxes with 100 cell dividers
   398308 Shelf kit 3" box inventory kit for 20.2 cu. ft. includes 5 side access racks and 60, 3" boxes with 100 cell dividers
   208207 Shelf kit 3" box inventory kit for 24.4 cm. ft.
- 398307 Shelf kit 3" box inventory kit for 24.4 cu. ft. includes 6 side access racks and 72, 3" boxes with 100 cell dividers

# Racks >> Microplates

	Cat. No.	Description W x H x D inches (mm)	Freezer Volume cu. ft. (L)	Microplates With Lids	Microplates Without Lids	Deepwell Boxes	Racks/ Shelf Racks/ Freezer
	398334	<b>44 position microplate rack</b> 5.5 x 9.4 x 16.5	11 (311)	-	-	-	3, 15
	550554	(140 x 239 x 420)	13.4 (379)	-	-	-	4, 20
A & B & B & B		66 position microplate rack	17.2 (487)	-	-	-	4, 20
	398333	5.5 x 9.4 x 22 (140 x 239 x 559)	20.2 (572)	-	-	-	5, 25
		(140 x 239 x 339)	24.4 (691)	-	-	-	6, 30
		Microplate/deepwell rack with locking rod	11 (311)	70	85	25	3, 15
	398321	5.5 x 9.4 x 18.5 (140 x 239 x 470)	13.4 (379)	70	85	25	4, 20
a							
	398323	Microplate/deepwell rack with locking rod 5.5 x 9.4 x 22 (140 x 239 x 559)	17.2 (487)	84	96	30	4, 20
			20.2 (572)	84	96	30	5, 25
			24.4 (691)	84	96	30	6, 30
a diline content conten "contes" (conte il fonos 21							
	398322	Microplate/deepwell rack with locking rod 5.5 x 9.4 x 25.7 (140 x 239 x 653)	31.4 (889)	98	119	35	7, 35
			17.2 (487)	_	_	30	5,20
iiit	398335	<b>30 position deepwell rack*</b> 5.5 x 9.4 x 22	20.2 (572)	_	_	30	5,25
STATES		(140 x 239 x 559)	24.4 (691)	_	_	30	6,30
	*Also fits	Thermo Scientific Matrix 2D barcoc		o tube racks #	3744		

## **Options and Accessories**

#### **Fiberboard Boxes**

Fiberboard boxes are packaged in lots of one dozen. All boxes are 5.25" (130mm) square.

5954	2″	high boxes (50mm)
5956	3″	high box (80mm)

#### **Fiberboard Grid Dividers**

Fiberboard grid dividers are packaged in lots of one dozen.

<b>5958</b>	10 x 10, 7/16" cell	Holds 100 – 12mm vials
5959	7 x 7, 5/8" cell	Holds 49 – 16mm vials
5960	8 x 8, 9/16" cell	Holds 64 – 14mm vials
6212	9 x 9, 1/4" cell	Holds 81 – 13mm vials

#### **Red Cell Canister**

6225 For flat freezing and storage; holds one standard 1,000 ml red cell bag, plus tubing sections in external slot.

#### **Upright Freezer Shelves**

Solid stainless steel shelves are reinforced for heavy loads. Shelves rest on removable mounting brackets that adjustable in 1" (25.4mm) vertical increments. Each shelf includes 5 clips for left, rear and center support.

6667	For 13.4 cu.ft. cabinet (379 liter)
6668	For 17.2 cu.ft. cabinet (487 liter)
6669	For 20.2 cu.ft. cabinet (572 liter)
6670	For 24.4 cu.ft. cabinet (691 liter)

Note: All shelves are adjustable except standard top shelf, fixed position.





Fiberboard Grid Dividers

Fiberboard Boxes

Deluxe Electric Remote Alarm

#### **Alarm Delay Module**

6903

The alarm delay eliminates nuisance alarms due to intermittent or transitory conditions such as lightning or brief power outages. The adjustable delay requires an alarm condition to exist continuously for a pre-determined time (adjustable) before a signal is released to a central alarm/monitoring system or telephone dialer.

#### **Deluxe Electronic Remote Alarm**

6224TA\* The Thermo Scientific Revco deluxe electronic remote alarm can be programmed to sound an alarm in the event of a temperature increase or power failure. 120V/60Hz.

- The alarm can dial up to 4 telephone numbers
- Signals of an alarm condition across any telephone system which accepts pulse dialing
- One system can monitor up to 4 individual freezers or up to 3 groups of freezers.

\*Requires dedicated phone line, not

for sale in countries which require a CE mark.

#### Thermo Scientific LabCooler Cryopreservation Modules

Modules are useful in providing nominal control over pulldown during initial freeze cycles, and maintaining temperature stability of stored samples in vials during handling.

- LabCooler and LabCooler Lite preservation modules are designed to freeze mammalian and insect cells with greater control over pulldown freezing prior to storage in an ultra-low freezer
- 6742TA LabCooler Cryopreservation Module Holds standard vials

#### **Cryo Gloves**°

Suitable for use with ultra-cold surfaces, cryo gloves protect hands and arm when inserting or removing inventory.

- Layered material is specially selected for high insulation value with ample dexterity
- Mid-arm style is available in sizes medium or large

4425	Medium
4426	Large



#### **Data Outputs**

RS-232 data port and software is standard on Ultima grade freezers and optional on Elite PLUS, Elite and Value PLUS models.

4-20 Milliamp Output is standard on Ultima PLUS HD units and is optional on other models.

Remote alarm contacts are standard on all Thermo Scientific Revco ULT freezers.

See Selected Option and Feature Matrix for ordering information.

#### **Digital Temperature Monitor**

Simple, accurate and cost-effective digital temperature and power monitors provides both alarm/monitoring and digital temperature display in a single, self-contained unit. Standard features include easy to read LCD display, remote alarm contacts (SPDT), high and low alarm, alarm mute and chirp, visual alarm, programmable alarm delay (0-30 minutes), alarm relay delay, nicad battery backup, and a low voltage AC power supply, 120V/60Hz only.



#### **Digital Temperature Monitor Specifications**

Digital temperature menter opeenteater	Single Channel		Multi-Channel		
Cat. No.	6898	6899	6900	6901	6902
Input Channel	1	1	2	3	4
Temperature Range	-100°C to +100°C				
Display and Setpoint Resolution	1°C	0.1°C	0.1°C	0.1°C	0.1°C
Probe Lead Wire	10 foot	10 foot	20'	Teflon <sup>®</sup> , color-co	ded
Relay Delay			progr	ammable, 0-30 m	inutes
Alarm/battery Test Switch				standard	
Mounting Method	Ve	cro®		Bracket	
Case Dimensions	5″L x 4.5″	W x 1.75″D	6.2	25″L x 3.25″W x 2	″D
	130mm x	110mm x 45mm	160	)mm x 80mm x 50	mm

## Accessories

#### **Back-up Systems**

Back-up systems inject liquid  $CO_2$  or  $LN_2$  on demand when cabinet temperature warms to a pre-set level. Back-up system kits includes all hardware except the supply cylinder

- Built-in back-up systems are available on Revco PLUS, Ultima II and Elite models only
- Liquid flow is shut off automatically when the freezer door or lid is opened
- Activation setpoints are adjustable in 1°C increments, to -75°C for  $\rm CO_2$  and -150°C for  $\rm LN_2$
- The control module digital display shows actual temperature when button is pushed
- An indicator light glows when activated
- In the event of a power failure the system will operate on a charged battery.

See Selected Option and Feature Matrix for ordering information.

#### **Temperature Chart Recorders**

All 6" (150mm) circular chart, 7-day temperature recorders feature a temperature accuracy of +/- 0.25  $^{\circ}\mathrm{C}$ 

- Built-in, panel-mounted recorders are factory installed (specify when ordering)
- Free-standing recorders are customer installed

See Selected Option and Feature Matrix for ordering information.



	ULT3280-10HD/ ULT2586-10HD PLUS models	ULT2586-10 ULT2186-10 ULT1786-10 PLUS models	ULT2586-6 ULT2186-6 ULT1786-6 PLUS models	ULT2586-4 ULT2186-4 ULT1786-4 PLUS models	ULT1386-9 ULT2540-9 ULT2140-9 ULT1740-9 ULT1340-9	ULT1386-5 ULT2540-5 ULT2140-5 ULT1740-5 ULT1340-5	ULT1386-3 ULT2540-3 ULT2140-3 ULT1740-3 ULT1340-3	ULT1186-3SI
Back-up Systems								
CO <sub>2</sub> factory installed, built-in	7216 / 6594	6594	6594	6594	6594	6594	N/A	N/A
LN <sub>2</sub> factory installed, built-in	7217 / 6595	6595	6595	6595	6595	6595	N/A	N/A
$\rm CO_2$ field installed free-standing	7214* / 6593*	6593*	6593*	6593*	6593*	6593*	6593*	7218*
LN <sub>2</sub> field installed, free-standing	7215* / 6214*	6214*	6214*	6214*	6214*	6214*	6214*	7219*
Chart Recorder								
Built in, factory installed	Std	6183-6	6183-6	6183-6	6183-6	6183-6	6183-6	6183-6
Field installed, free-standing	6383-6*	6383-6*	6383-6*	6383-6*	6383-6*	6383-6*	6383-6*	6383-6*
Chart Paper (package of 50)	17020	17020	17020	17020	6185	6185	6185	6185
Data outputs (must be factory ins	stalled)							
RS-232	Std	Std	6405	N/A	Std	6405	N/A	N/A
4-20mA	Std	4706	4706	4706	4706	4706	4706	4706
Cabinet ports								
Standard 1" (25.4mm) ports	2	2	2	2	2	2	2	1

### **Selected Option and Feature Matrix**

\*Indicate voltage when ordering

Field installed back-up systems should be installed by a qualified service provider.

#### **Line Cord Plug Reference**

Models with this plug	require this receptacle	NEMA Reference Plug Receptacle		
		5-15P	5-15R	
		5-20P	5-20R	
		5-30P	5-30R	
	•	6-15P	6-15R	
	•	6-20P	6-20R	
		6-30P	6-30R	
$\textcircled{\bullet}$	Φ	European		
	•	British		

Refrigerators and freezers supplied with line cord plugs (P) require corresponding receptacles illustrated in the Line Cord Plug Reference. Catalog selection charts list each standard model with voltage, rated amperage, recommended circuit breaker size and NEMA electrical plug information.



Thermo Scientific Nalgene and Nunc cryogenic storage gives you everything you need to safely store precious specimens, organize freezer space and simplify sample retrieval. Nalgene® and Nunc<sup>™</sup> combine to provide one-stop shopping for the widest variety and highest quality of externally and internally threaded cryovials, storage boxes, lab top coolers and "Mr. Frosty" controlled rate freezing containers. For further information, visit **www.nalgene.com** or **www.nuncbrand.com** 

www.thermoscientific.com/cold

CERTIFICATION INFORMATION AND LINE CORD INFO

- Meets NEMA, UL61010-1, UL471, CUL, CE, IEC60335-2-89/Climate Class T (Tropical) criteria
- Calibration Certification Available
- Validation Testing Program Available



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