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TECHNOLOGY GROUP

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Find the *OMRON H3CR-A8E* at our website: *Click HERE*

Thermo Scientific Revco Ultima II Cryogenic Freezers

Long Term Biologicals Storage

Our Revco Ultima II cryogenic freezers maintain uniform temperatures of -140°C and -150°C, safely below the -130°C glass transition temperature of water. Cell viability is improved because biologically relevant, thermally driven reactions are not known to occur.



Safer, More Convenient Than LN_2

- Our cryogenic freezers include all features, control and performance attributes of the Ultima II Series freezers, plus many important advantages not available when using LN_2
- Stable cryogenic temperature of -140°C and -150°C without LN_2 as a cooling medium
- Patented, single compressor, orbital refrigeration system
- Top-to-bottom temperature uniformity dramatically improved when compared to LN_2 vapor
- Lower operating costs than LN_2 freezers of similar capacity
- 100% of interior space is usable, with stored samples maintained below critical temperature
- Ample interior volume with capacity of up to 21,600 samples in Model ULT-10140 and up to 14,400 samples in Model ULT-7150 (2 ml vials in boxes)
- Uses standard Thermo Scientific Revco inventory racks and fiberboard boxes

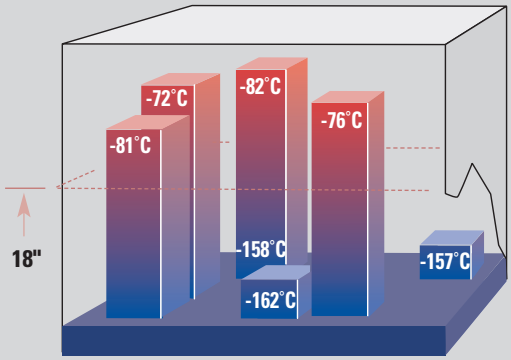
Refrigeration System

- Exclusive mixed refrigerant autocascade with a single, orbital refrigeration compressor, air-cooled
- CFC-free refrigerants
- Downfeed evaporator for most efficient refrigerant flow
- High-capacity air-cooled condenser with dual condenser fans, aerodynamically shaped fan blades
- Washable condenser filter keeps fins free of dust to maintain peak cooling efficiency; no tools required for removal

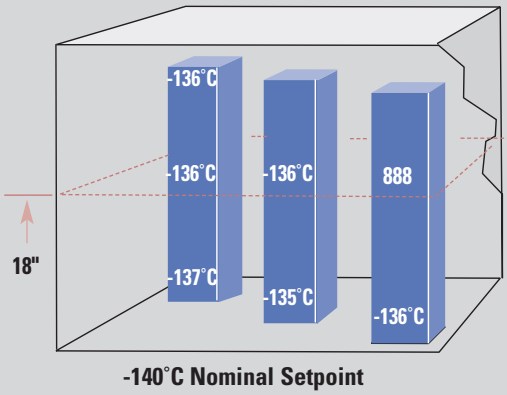
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Thermo Scientific Revco Ultima II Mechanical Refrigeration Delivers Superior Uniformity

Liquid Nitrogen Vapor Storage



Mechanically Refrigerated Cryogenic Freezer



Comparison of temperature distribution in a liquid nitrogen freezer (vapor phase) and mechanically refrigerated cryogenic freezer (i.e. Revco Ultima II Model ULT10140-9). Graph represents temperatures at relative locations within the chamber. Data suggests that 100% of the Ultima II storage space maintains uniform storage temperatures safely below -130°C, while temperature in LN_2 vapor system is dependent on storage location.

Revco Ultima II IntrLogic controls monitor all functions for safe, dependable and economical operation; shown with optional LN_2 backup system.

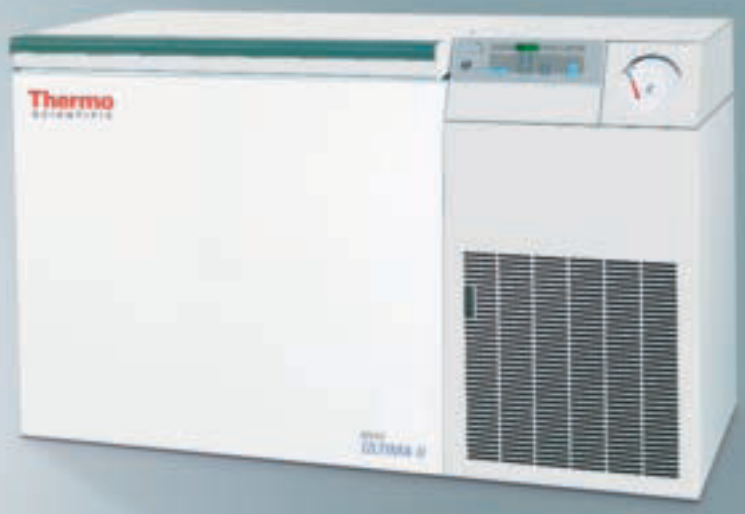


Control System

- Exclusive 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
- Independent operating temperature and high/low limit alarm functions with factory-set defaults for quick start-up, all setpoints adjustable in 1°C increments

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Thermo Scientific Revco Ultima II Cryogenic Chest Freezers



Choose from two chest models, with operating temperatures of -140°C and -150°C. Model ULT-10140-9 shown with optional temperature recorder.

Revco Ultima II -140°C Cryogenic Chest Freezers

Operating Temperature: -140°C						
Model No.	**Cu.Ft. (L)**	**Electrical**	**Amps/ Breaker (Plug)**	**Interior Dimensions* H x D x W inches (mm)**	**Exterior Dimensions* H x D x W inches (mm)**	**Ship Weight lb (kg)**
ULT-10140-9-D		208/230V 60Hz 1Ø	20.0/30 (P6)			
ULT-10140-9-E		208/230V 60Hz 3Ø	16.0/20 (HW[1])			
ULT-10140-9-M	10.3	380V 50Hz 3Ø	11.0/15 (HW[1])	26.5 x 19.0 x 35.25	42.75 x 29.0 x 69.0	1065
ULT-10140-9-R	(292)	200V 50Hz 3Ø	16.0/20 (HW[1])	(670 x 480 x 890)	(1090 x 740 x 1760)	(483)
ULT-10140-9-V		230V 50Hz 1Ø	20.0/30 (HW[1])			
ULT-10140-9-W		230V 50Hz 1Ø	20.0/30 (HW[1])			

Revco Ultima II -150°C Cryogenic Chest Freezers

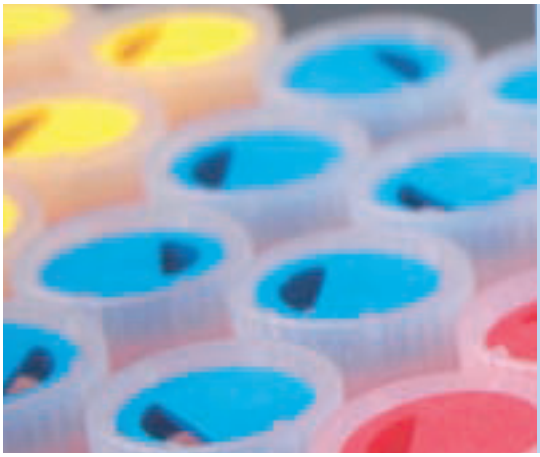
Operating Temperature: -150°C						
Model No.	**Cu.Ft. (L)**	**Electrical**	**Amps/ Breaker (Plug)**	**Interior Dimensions* H x D x W inches (mm)**	**Exterior Dimensions* H x D x W inches (mm)**	**Ship Weight lb (kg)**
ULT-7150-9-D		208/230V 60Hz 1Ø	20.0/30 (P6)			
ULT-7150-9-E		208/230V 60Hz 3Ø	16.0/20 (HW[1])			
ULT-7150-9-M	6.8	380V 50Hz 3Ø	11.0/15 (HW[1])	26.5 x 19.0 x 23.5	42.75 x 29.0 x 58.0	825
ULT-7150-9-R	(193)	200V 50Hz 3Ø	16.0/20 (HW[1])	(670 x 480 x 590)	(1090 x 740 x 1480)	(374)
ULT-7150-9-V		230V 50Hz 1Ø	20.0/30 (HW[1])			
ULT-7150-9-W		230V 50Hz 1Ø	20.0/30 (HW[1])			

**All dimensions and specifications subject to change without notice. External dimensions include allowances for cabinet door, hinges, latches, handles, and control panel protrusions. [1]No plug provided; requires hardwire connection by customer.*

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Innovative Features and Rewarding Benefits

Thermo Scientific Revco	Ultima II	Elite	Value	Ultima II Cryogenic	
Operating Temperature	-86°C or -40°C	-86°C or -40°C	-86°C or -40°C	-150°C or -140°C	Benefit
Refrigeration System					
Legaci refrigeration system	•	•	•		Long life, dependability for ultra-low use
Orbital refrigeration system				•	Patented, single compressor system developed for cryogenic use
1 HP industrial grade compressor(s)	•	•	•		Refrigeration power
CFC-free refrigerants	•	•	•	•	Environmentally friendly, high performance
DuPont Suva low-stage refrigerants	•	•	•		Specially formulated for ultra-low applications
Downfeed evaporator	•	•	•	•	Smoother refrigerant flow
Washable condenser filter	•	•	•	•	Maintains peak condenser efficiency
Control Technology					
Microprocessor-based or solid-state	IntrLogic	Microprocessor	Solid-State	IntrLogic	Digital accuracy
Setpoint security	•			•	Locks in operating and alarm setpoints
Temperature and high/low setpoints	•	•		•	Adjustable in 1°C increments
Electrical System					
Automatic voltage boost	•	•	•	•	Compensates for low voltage
Digital power monitoring	•	•		•	Displays actual incoming line voltage
Surge suppressor	•	optional	optional	•	Minimizes effect of voltage spikes
Alarm System					
A.I.M. (Automatic Incident Monitor)	•	•		•	Identifies temperature deviations
Audible/visual warning	•	•	audible only	•	Automatic
Battery backup	•	•	•	•	Automatic
Battery capacity indicator	•	•		•	Displays % battery power remaining
Touchpad alarm test	•	•		•	Simulates overtemperature condition
RS-232 data port	•	optional		•	Includes software for data export to PC
Remote alarm contacts	•	•	•	•	For connection to remote monitoring system
Monitoring System					
Lifeguard compressor protection	•			•	Monitors/adjusts compressor performance
Extreme ambient alert	•			•	Warns if room temperature is too warm
Voltage boost indicator	•	•		•	Alerts to low power, boosts low voltage
Check fuse indicator	•			•	Alerts to surge suppressor event
Clean filter indicator	•	•		•	Advises when to remove and clean filter
Cabinet Construction, General					
Foamed-in-place urethane insulation	•	•	•	•	Higher "R" value
1" (25.4mm) diameter access port	•	•	•	•	Easy access through wall
Coved corner interior	•	•	•	•	Easy to clean, improved uniformity
Enhanced acoustic insulation	•	•		•	Reduces compressor sound
Heavy duty swivel casters	•	•	•	•	Cabinet mobility as required
Upright Cabinets					
Eye-level IntrLogic controller	•				Easy to read, convenient access
CryoLatch	•	•	•	n/a	One-handed operation
Low-profile design	•	•	•	n/a	Only 77.5" (1970mm) high
Pressure equalization port	•	•	•	n/a	Faster re-entry to freezer
Four shelves and five inner doors	•	•	•	n/a	Creates five interior compartments
Chest Cabinets					
Low-profile design with stay-open lid	•	•	•	•	Easier access to inventory
Insulated sub-lids	•	•	•	•	Additional protection



NALGENE® and NUNC™ cryogenic storage give you everything you need to safely store precious specimens, organize freezer space and simplify sample retrieval.

NALGENE and NUNC 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 regarding these products - visit www.nalgene.com or www.nuncbrand.com

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Electrical Information

Thermo Scientific Revco freezers are designed to meet UL, CUL and CE criteria for safety and performance. All connections must comply with local electrical codes.

- Selection charts for each standard model list voltage, rated amperage, recommended circuit breaker size and NEMA (National Electrical Manufacturers' Association, USA) electrical plug information
- Freezers are supplied with line cord plugs (P) which require corresponding receptacles illustrated on the line cord plug reference chart (right)
- Site preparation requires availability of the proper receptacle; a dedicated circuit is recommended
- Some freezers require a hardwire connection to a dedicated circuit. This connection is the responsibility of the customer and must be made by a qualified electrician
- Special voltage selections may be available at extra cost and must be specified when ordering
- For questions regarding site preparation, installation and electrical connection, contact your sales representative

Certification of Calibration

Control, alarm and temperature recording systems are systematically calibrated at the factory for accurate performance. An optional certificate of calibration to an NIST (National Institute of Standards and Technology, formerly National Bureau of Standards) traceable instrument includes a model number and serial number certificate (single point calibration). Multiple point calibration is also available. Calibration certificates must be requested when ordering.

Validation Testing Program

Validation testing services in advance of shipment can accelerate in-house FDA Installation Qualification (IQ) and Operation Qualification (OQ) programs. Validation services include documentation and performance reports, compressor and sub-system component specifications, microprocessor flow diagrams, software specifications, and more.

Line Cord Plug Reference

Models with this code	have this plug	require this receptacle	NEMA Reference	
			Plug	Receptacle
P1			5-15P	5-15R
P2			5-20P	5-20R
P3			5-30P	5-30R
P4			6-15P	6-15R
P5			6-20P	6-20R
P6			6-30P	6-30R
P7 European				
P8 British				

North America: North America: USA/Canada +1 866 984 3766
Europe: Austria +43 1 801 40 0, Belgium +32 2 482 30 30, Finland +358 9 329 100, France +33 2 2803 2000, Germany national toll free 08001-536 376, Germany international +49 6184 90 6940, Italy +39 02 95059 1, Netherlands +31 76 571 4440, Russia/CIS +7 (812) 703 42 15, Spain/Portugal +34 93 223 09 18, Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203
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