



New! Thermo Scientific
Revco Ultra-Low Temperature Freezers

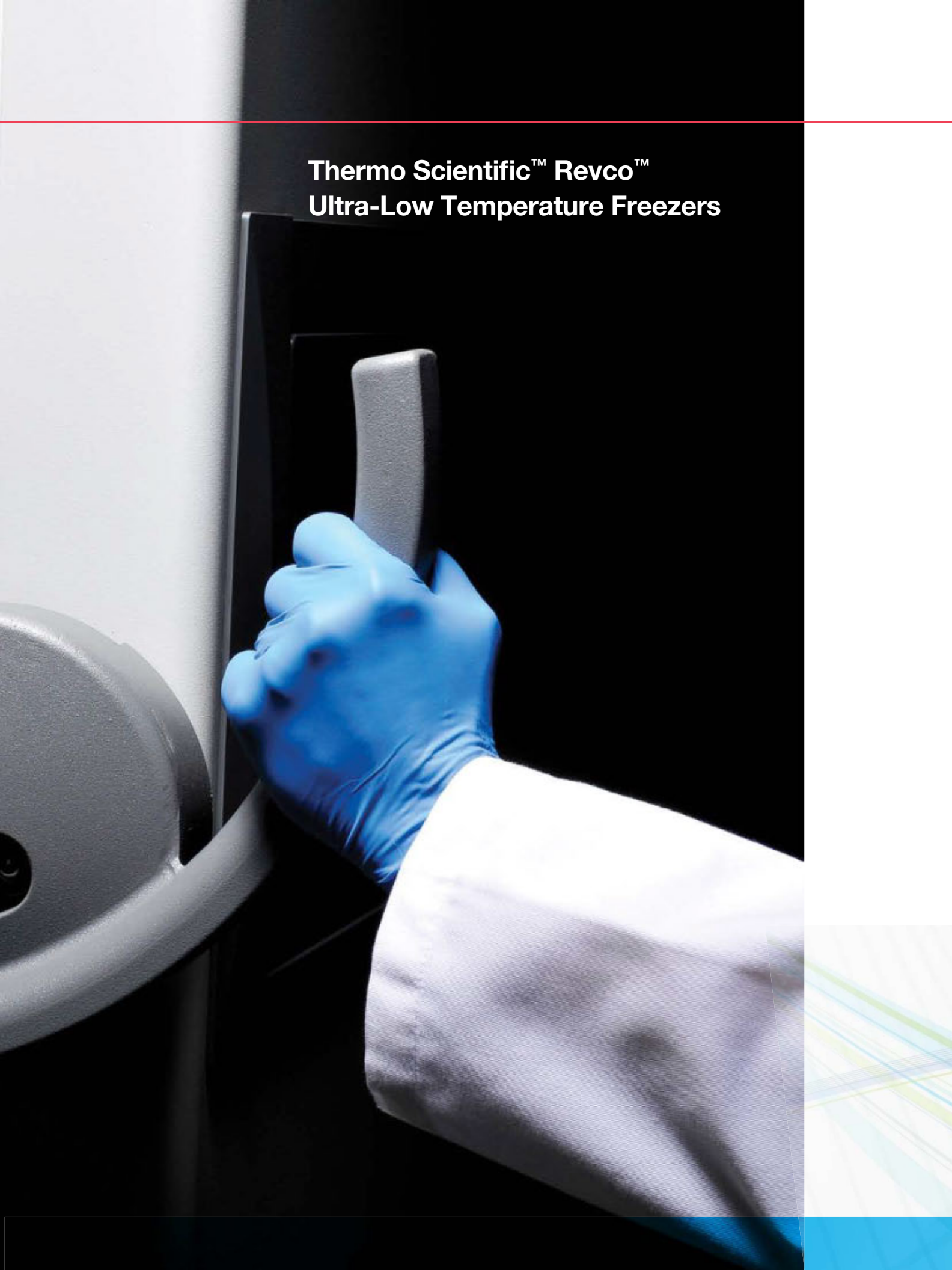
Optimum storage capacity with
ultimate protection and energy savings

your samples

our obsession

Thermo
SCIENTIFIC

**Thermo Scientific™ Revco™
Ultra-Low Temperature Freezers**



your samples our obsession



Thermo Scientific Revco UxF Series

Pages 4-15

Your samples need to stay cold. Period. That's why our Revco UxF Series freezers offer outstanding door opening recovery rates and consistent temperature uniformity. To ensure the safety of your samples, our new freezers endured the equivalent of more than 26 years of run time before making their way to the market.

Your samples are precious – and so is your lab space. With our Revco UxF Series freezers, it really is possible to fit more samples into less physical space. With five convenient sizes to choose from, we've got a freezer that will fit just right.

Sample protection should be easy. Our Revco UxF Series freezers feature an easy-to-use, touch screen panel with an innovative health monitor that lets you see what's going on inside without opening the door. Onboard data logging provides you with a downloadable record.

Protect your samples and the environment, too. From water-blown foam insulation and an environmentally-friendly mix of refrigerants, to an energy-saving mode option, our Revco UxF Series freezers protect more than just your samples.

Thermo Scientific Revco Upright and Chest Freezers

Pages 16-28

Our Revco ExF -86°C upright freezers come in four convenient sizes and feature an intuitive microprocessor controller for uncompromised sample protection.

When your application requirements call for temperatures in the -10°C to -40°C range, our **Revco DxF upright freezers** are there with the same uncompromised protection features found in our ExF Series.

Our **Revco CxF chest freezers** offer all the features and benefits of our ExF and DxF uprights – in a convenient range of chest configurations.

what to look for

in an ultra-low temperature freezer



Thermo Scientific Revco Ultra-Low Temperature Freezer

-86°C Freezer Selection Guide

1 Select the optimal capacity and design



Revco
UxF



Revco
ExF

		UxF300	UxF400	UxF500	UxF600	UxF700	ExF240	ExF320	ExF400	ExF600
Capacity	cu. ft. liters	14.9 421	19.4 548	24.1 682	28.8 815	33.5 949	13 368	17.3 490	23 651	28 793
	2" Box Capacity	boxes	300	400	500	600	700	240	320	400
Vial Capacity	2mL vials	30,000	40,000	50,000	60,000	70,000	24,000	32,000	40,000	60,000
Footprint	sq. ft.	7.05	8.46	9.92	11.38	12.85	7.61	9.00	11.02	12.64
	sq. meters	0.65	0.79	0.92	1.06	1.19	0.71	0.84	1.02	1.17
Energy*	KW/day	17	19	19	20	22	17	18	19.3	21
Vial to Footprint	vials/ft ²	4,255	4,728	5,040	5,272	5,447	3,154	3,600	3,630	4,747
	vials/ m ²	46,154	50,633	54,348	56,604	58,824	33,803	38,095	39,216	51,282
Vials to Energy	watts/100 2mL vials (box)	2.36	1.93	1.54	1.39	1.31	2.95	2.47	1.98	1.46

2 Choose advanced technologies

Performance

Display	Touch Screen LCD	Push Button LED
On-board Datalogging	Standard	Not Available
Setpoint Security	Standard	Not Available
Operating Modes	TWO MODE: High Performance or Energy Savings	ONE MODE: Standard Operation

Security

Key Lock	Standard	Standard with unique key option
Pad Lock Compatible	Standard	Standard
Key Card Access	Optional	Not Available
Setpoint Security	Standard	Not Available

Data Management

Monitoring Outputs	RS-485, 4-20mA, Dry Contacts - Standard	RS-485, 4-20mA, Dry Contacts - Standard Optional PT100 Probe
Data Outputs	Log file through USB	Not Available

* Based on internal performance data. Data on file. May 2011.

See pages 16-28 for our Revco Dx F -40°C upright and Revco Cx F -86 and -40°C chest freezers.

Thermo Scientific Revco UxF Series Ultra-Low Temperature Freezers

ultimate protection optimum capacity

There are ultra-low temperature freezers, and there are our new UxF Series freezers. Built specifically to protect the most critical of samples, our UxF Series freezers achieve outstanding thermal performance, safety and security through state-of-the-art engineering.



Performance

Our UxF Series features an outstanding BTU (British Thermal Unit) reserve. This leads to fast door opening recovery times so that sample integrity isn't compromised.¹

¹ Based on internal performance data.
Data on file. May, 2011.



Storage Capacity

Laboratories come in all shapes and sizes, often creating a dilemma for the quantity of samples requiring protection. Our UxF Series freezers meet that challenge with five sizes, featuring outstanding capacity per footprint specifications.¹

Energy-Efficiency

Save up to 15% in energy usage with our energy-savings mode* or choose our high-performance mode for applications requiring ultra-tight temperature uniformity – all through our easy-to-use, touch-screen interface.

Safety and Security

The highlight of our UxF freezers is an innovative, touch-screen control panel. Here you can control all freezer settings and user authority levels, as well as monitor the freezer's health 24/7 and access a detailed event log. Need a record? Simply download a report of the event log to a portable drive via a built-in USB port.

outstanding thermal performance, safety and security

* Compared to high-performance mode.

Thermo Scientific Revco UxF Series -86°C Freezers



Single-hand operation

Easy to use, padlock-compatible, ergonomic door handle with integrated key lock

Pressure equalization port (PEP)

allows for quick re-entries after door opening

Long life durability

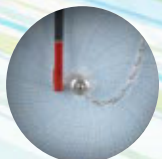
Rugged steel construction with a corrosion-resistant coating

Simplify installation

with our new easy-roll 2 inch (5cm) locking casters

Power management system protects against a wide range of voltage variation and is easily accessible through the touch-screen display

New refrigeration system with high-efficiency compressors for outstanding performance and reliability. Brazed plate heat exchanger for more efficient heat transfer. Induction brazed joints to reduce leak potential and improve reliability.



Optional seven day, 6" (15.2cm) chart recorder for validation and regulatory requirements

Information at your fingertips

New touch-screen user interface provides access to vital freezer information, including event log, settings and user profiles

On-board data storage

Store up to 15 years of temperature and event data on our on-board computer

Optional LN₂ and CO₂ back-up systems

Provide three control points of additional protection to ensure maximum sample protection

No more post-it notes

The new, built-in whiteboard lets you organize your notes easily

Easily exchange data

Use the USB port to download freezer temperature and event data or upload freezer settings from one freezer to another

Washable filter

provides protection against dust on the condenser, which can cause reduced refrigeration performance and increased risk to samples

Maximize Temperature Uniformity, Space and Minimize Energy Use

- **High-tech construction** combines vacuum panel insulation with water-blown foam insulation for maximum sample-to-vial footprint storage
- **Environmentally-friendly**, CFC/HCFC-free refrigerants
- **Remote alarm contacts and 4-20mA** output compatible with external alarm and monitoring systems
- **Two rear access, 1-inch (25mm) ports** accommodate use of independent probes or instrumentation

at-a-glance

outstanding features inside and out



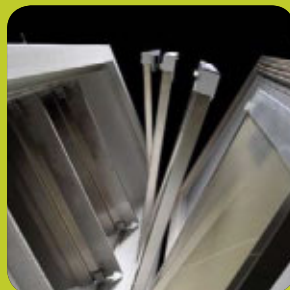
Optional stainless steel inventory racks for complete sample maximization and protection

Removable inner doors for flexibility and convenience



Inner Doors

Five polystyrene insulated inner doors help maintain cabinet temperature during openings and feature embedded rare earth magnets, eliminating the need for exposed latches or magnets.



Reinforced Shelves

Store up to 278 lbs of cargo (depending on model) on our reinforced, stainless steel shelving.



Outer Door Gaskets

4x7 heated gasket provides four touchpoints of security and seven zones of protection, maximizing cabinet temperature and minimizing frost build-up.



Hands Free Locking Option

Optional proximity card access control allows for enhanced security. On-board computer records who opened the door, when it occurred and for how long.

Thermo Scientific Revco UxF Series -86°C Freezers

more samples, less footprint

Optimum storage capacity

Our UxF Series freezers maximize sample storage capacity while minimizing the freezer's physical space inside your laboratory. Space concerns are common in laboratories throughout the world, and that's why we offer five models to accommodate both your storage and your lab requirements.

Store up to 118,300 vials in a single freezer

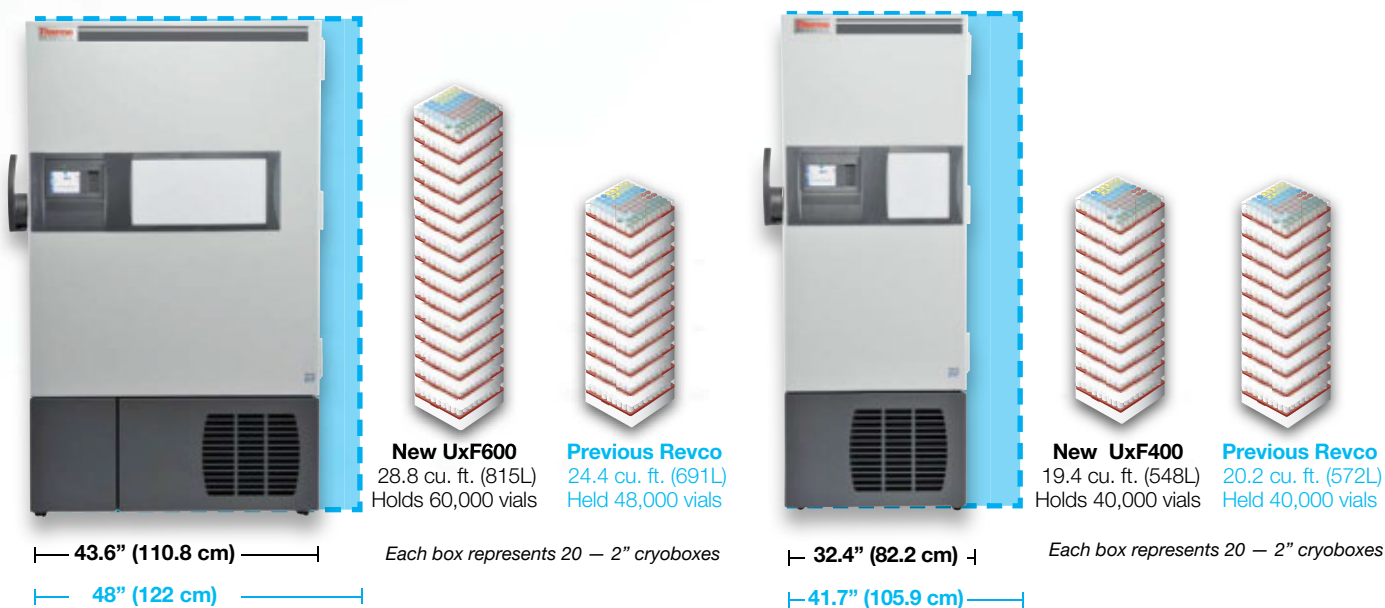
Working together with the UxF Series freezers' innovative cabinet design, our vacuum insulation panel technology increases the internal storage capacity of 2" vials over the previous generation Revco freezers. And by using Thermo Scientific Cryobank tubes in your standard 2-inch cryo box, you gain up to 76% more capacity for high-density storage! Up to 76% more storage capacity in the same footprint.*

STORE 20% MORE IN 9% LESS SPACE with the UxF600*

Store 60,000 2mL vials in a smaller freezer footprint compared to 48,000 in the previous generation Revco freezers.

SAVE 22% SPACE with the UxF400*

Store 40,000 2mL vials in a smaller freezer footprint compared to previous generation Revco freezers.



Freezer Model No.	Interior Volume	Area Footprint (nominal)	Storage Capacity			
			2" Boxes	3" Boxes	2mL Tubes	Cryobank 1mL Tubes
UxF300	14.9 cu. ft. (421L)	7.05 sq.ft. (0.65 m ²)	300	225	30,000	50,700
UxF400	19.4 cu. ft. (548L)	8.46 sq.ft. (0.79 m ²)	400	300	40,000	67,600
UxF500	24.1 cu. ft. (682L)	9.92 sq.ft. (0.92 m ²)	500	375	50,000	84,500
UxF600	28.8 cu. ft. (815L)	11.38 sq.ft. (1.06 m ²)	600	450	60,000	101,400
UxF700	33.5 cu. ft. (949L)	12.85 sq.ft. (1.19 m ²)	700	525	70,000	118,300

* Compared to previous generation Revco.

your choice of refrigeration

For customers who require the strictest tolerances, our high-performance mode provides the tightest temperature uniformity and peak variation.** For most applications, our energy savings mode offers excellent temperature control, plus up to 15% savings on energy usage.**

High Performance¹

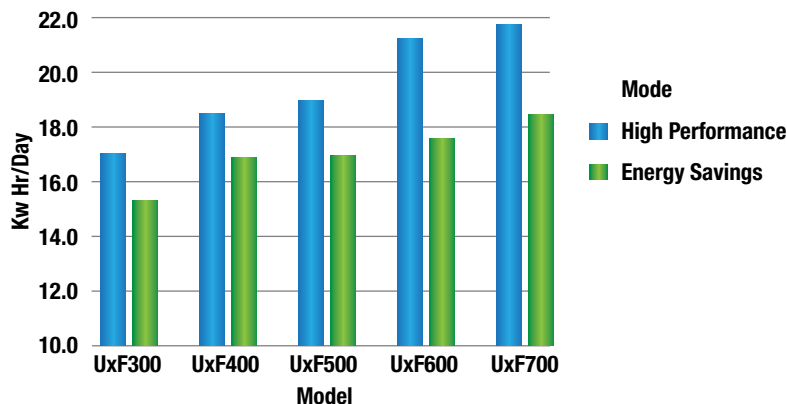
- Outstanding temperature uniformity and peak variation from setpoint
- Designed with GMP applications in mind

Energy Savings¹

- Excellent temperature uniformity
- Up to 15% energy savings over high performance mode



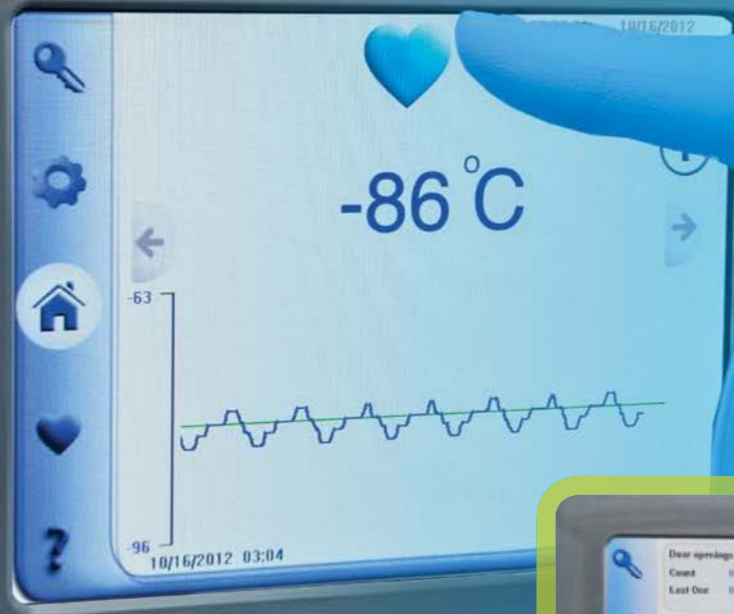
Energy Usage per Day



By controlling the temperature and time of the cycles, the energy savings cycle can save up to 15% while still offering tightly-controlled cabinet temperature and excellent door-opening recovery. The high-performance mode maintains the strictest cabinet temperature control.

¹ Based on internal performance data. Data on file. May, 2011.
^{**} Comparison between high-performance and energy savings modes.

Thermo Scientific Revco UxF Series -86°C Freezers



Health monitoring system

You can check your freezer's "health" at any time by simply touching the heart icon on the main screen. Here, you will see the freezer's temperature, alarms and freezer system status.

- **If the heart icon is blue**, your freezer is in good health and is protecting your samples.
- **In the event the heart's color changes to yellow**, something needs to be addressed. The yellow heart provides indications of system status, battery alerts, preventative maintenance reminders, ambient alerts and unacknowledged alarms.
- **A red heart indicates there is a problem.** Should this occur, you will be notified with visual and audible alarms. Conditions causing a red heart include warm and cold alarms, door open alarms and power failure.

DON'T OPEN THAT DOOR: Here's what's going on inside...

If at any time you want to see what's going on inside the freezer, you don't need to open the door (despite our excellent recovery times). The following are just a finger stroke away:

- **Alarm Status:** including active alarms and past events.
- **Door Opening Status:** How many door openings and length of time the door was open.
- **Temperature Status:** What is the actual temperature? When was it at its warmest and coldest? Need more detail? – press the thermometer to get the temperature status at 8 points in the freezer and refrigeration system.
- **Environmental Conditions:** See a summary of the ambient temperature and the incoming electrical voltage.
- **Backup System Status:** CO₂ or LN₂ is actively injecting into the freezer. "Green" means good. "Yellow" indicates caution. "Red" signifies "fill up now".

sample protection at your fingertips



Who is using this freezer?

Our freezers have multiple security levels to fit your lab requirements. No access control required – use our fully accessible mode and this freezer operates like any other. Need to restrict who can change setpoints? – use our secure mode where you can designate different types of users. General users can operate all aspects of the freezer but do not have access to change settings. Administrators can change freezer and alarm setpoints, as well as add or delete users.

What happened, when, where?

Because each one of your samples is precious, we've developed an intuitive event log as part of our touch-screen control panel. And, you can easily export your event log data via the USB port in the front of the unit to Microsoft™ Excel™. Simply insert your drive into the USB outlet and touch the download icon.

Do you have multiple freezers on site?

No problem. Simply load the data from one freezer to the next via the USB drive. This simple action takes the freezer setpoints and user database from one freezer to another.

Thermo Scientific Revco UxF Series (-50°C to -86°C)



UxF300



UxF400



UxF500



UxF600



UxF700

Model No.	Capacity		Electrical	Amps/Breaker (Plug)	Max. Shelf Weight lbs. (kg)	Interior Dimensions H x W x D in. (cm)	Exterior Dimensions H x W x D in. (cm)	Shipping Weight lbs. (kg)
	cu. ft. (liters)	2" Cryobox						
UxF30086A	14.9 (421)	300	115V / 60 Hz	16/20 (NEMA 5-20)	125 (56.8)	51.23 x 17.78 x 28.29 (130.11 x 45.16 x 71.86)	78.0 x 27.0 x 37.6 (198.1 x 68.6 x 95.5)	667 (303)
UxF30086D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
UxF30086V			230V / 50 Hz	12/15 (European)				
UxF40086A	19.4 (548)	400	115V / 60 Hz	16/20 (NEMA 5-20)	165 (73.4)	51.23 x 23.13 x 28.29 (130.11 x 58.74 x 71.86)	78.0 x 32.4 x 37.6 (198.1 x 82.2 x 95.5)	730 (332)
UxF40086D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
UxF40086V			230V / 50 Hz	12/15 (European)				
UxF50086A	24.1 (682)	500	115V / 60 Hz	16/20 (NEMA 5-20)	205 (91.7)	51.23 x 28.75 x 28.29 (130.11 x 73.03 x 71.86)	78.0 x 38.0 x 37.6* (198.1 x 96.5 x 95.5)	782 (355)
UxF50086D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
UxF50086V			230V / 50 Hz	12/15 (European)				
UxF60086A	28.8 (815)	600	115V / 60 Hz	16/20 (NEMA 5-20)	245 (110.1)	51.23 x 34.38 x 28.29 (130.11 x 87.31 x 71.86)	78.0 x 43.6 x 37.6* (198.1 x 110.8 x 95.5)	854 (388)
UxF60086D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
UxF60086V			230V / 50 Hz	12/15 (European)				
UxF70086D	33.5 (949)	700	208-230V / 60 Hz	12/15 (NEMA 6-15)	285 (128.4)	51.23 x 40.0 x 28.29 (130.11 x 101.60 x 71.86)	78.0 x 49.2 x 37.6* (198.1 x 125.1 x 95.5)	951 (432)
UxF70086V			230V / 50 Hz	12/15 (European)				

* Door opening clearance is 34.5" (86cm) for UxF500, UxF600 and UxF700.

Performance Data

Model No.	Energy Consumption (kW-hour/day)*		Peak Variation from -80°C Setpoint (°C)**	Door Opening Recovery (minutes)	Warm up time (-80°C to -50°C (minutes)***
	Energy Savings Mode	High Performance Mode			
UxF300	15.3	17	+5.5/-6.4	13	213
UxF400	16.9	18.5	+5.6/-5.3	20	225
UxF500	17	19	+3.8/-5.6	28	237
UxF600	17	21.3	+2.9/-4.9	33	240
UxF700	18.5	21.8	+2.2/-5.5	39	241

* Energy Calculation: Average data based on internal testing with freezer setpoint at -80°C and ambient temperature at 25°C

** Peak Variation From Setpoint: Average data based on internal testing with freezer setpoint at -80°C and ambient temperature at 25°C

*** Warm up time: Average data based on internal testing with freezer setpoint at -80°C and ambient temperature at 25°C

Standard Plug Option Configurations

Choose one of our specialty plugs to configure your freezer to meet local requirements:

Model No.	Plug Description	Male End
Standard Plugs		
US125V20A	NEMA 5-20	
US230V15A	NEMA 6-15	
EU230V16A	Continental EU	
Specialty Plugs		
IT230V16A	Italy	
UK230V13A	Great Britain	
IN230V16A	India	
IS230V16A	Israel	
AU230V16A	Australia	
CH230V16A	China	
DK230V16A	Denmark	
AR230V16A	Argentina	
SW230V16A	Switzerland	
BR230V16A	Brazil	

► See page 21 for twist lock plugs (must be an additional plug for Revco UxF instead of an option)

UxF SERIES

Options (Field-installed must be installed by a qualified professional)

Description	For use with ▶	UxF300	UxF400	UxF500	UxF600	UxF700
LN₂ Backup System Maintains temperature down to -80°C with liquid nitrogen Models for UxF300 are stand alone.	Factory Installed	N/A	LN4567	LN4567	LN4567	LN4567
	Field Installed	FLN300A* FLN300D* FLN300V* FLN300W*	FLN4567	FLN4567	FLN4567	FLN4567
CO₂ Backup System Maintains temperature down to -67°C with CO ₂ Models for UxF300 are stand alone.	Factory Installed	N/A	CO4567	CO4567	CO4567	CO4567
	Field Installed	FCO300A* FCO300D* FCO300V* FCO300W*	FCO4567	FCO4567	FCO4567	FCO4567
Chart Recorder (Inkless) 6" (15.2cm), seven day inkless recorder, -115 to +50°C, +5°C resolution	Factory Installed	N/A	CR4567	CR4567	CR4567	CR4567
	Field Installed	N/A	FCR400R	FCR567R	FCR567R	FCR567R
Chart Recorder (Ink) 6" (15.2cm), seven day ink recorder, 100 to +38°C, +2°C resolution	Factory Installed	N/A	CRP4567	CRP4567	CRP4567	CRP4567
	Field Installed	6383-6A* 6383-6D* 6383-6V* 6383-6W*	FCRP400R	FCRP567R	FCRP567R	FCRP567R
Access Key Option Card access control. Includes five key cards. Supports IS15693 and ISO14443 protocols	Factory Installed	RAC34567	RAC34567	RAC34567	RAC34567	RAC34567
	Field Installed	FRAC34567	FRAC34567	FRAC34567	FRAC34567	FRAC34567
Stainless Steel Freezer Interior	Factory Installed	SS34567	SS34567	SS34567	SS34567	SS34567

* A = 115V/60 Hz (NEMA 5-20 plug), D = 208-230V/60 Hz (NEMA 6-15 plug), V = 230V/50 Hz (EU plug), W = 230V/50 Hz (British plug)

† Independent automated monitoring is recommended such as a chart recorder.

Accessories

Description	For use with ▶	UxF300	UxF400	UxF500	UxF600	UxF700
Access Key Pack (U.S.) Includes five cards; supports ISO15693 Protocol		ACU34567	ACU34567	ACU34567	ACU34567	ACU34567
Access Key Pack (EU) Includes five cards; supports ISO14443 protocol		ACE34567	ACE34567	ACE34567	ACE34567	ACE34567
Shelf Kit Includes one shelf and clips		SK300	SK400	SK500	SK600	SK700
Chart Paper Ink (pack of 50)		17020	17020	17020	17020	17020
Chart Paper Inkless (pack of 50)		N/A	6185	6185	6185	6185
Replacement Air Filter		AF34567	AF34567	AF34567	AF34567	AF34567
Replacement Back-Up Battery		400159	400159	400159	400159	400159
Alarm Delay Module Eliminates nuisance alarms due to intermittent or transitory conditions. Adjustable delay requires alarm condition to exist for user defined period before signal is released to monitoring system.		6903	6903	6903	6903	6903
Cryo Gloves™ Medium		4425	4425	4425	4425	4425
Cryo Gloves Large		4426	4426	4426	4426	4426
Seismic Restraint Kit		TF-ULT300	TF-ULT400	TF-ULT500	TF-ULT600	TF-ULT700

Water-Cooled Condenser Option

The water-cooled condenser option is available on our UxF Series as a factory-installed option. Improve your energy utilization by decreasing energy consumption by up to 5% and decreasing heat emitted into your surroundings by up to 80%. This option utilizes our cascade refrigeration design to absorb heat into the water, re-using the energy while maximizing sample protection. Like our standard freezers, those with water-cooled condenser options are UL or CE marked, depending on the voltage.

Model No.	For Use With
WC34567	All Revco UxF Series freezers

Water Requirement:

Pressure Range – less than 90 PSI 206.8 - 620.5 kpa
Temperature Range – 12.0°C (53.6°F) to 25.0°C (77.0°F)

Water Flow Rate Required:



1.0 gal. (3.8L) per minute



Connection:




1/2" NPT or 1/2" BSPT on inlet and outlet. Installation requires a qualified technician.

Thermo Scientific Revco UxF Series

Ultra-Low Temperature Upright Freezer Racks

2" Box Racks	Model No. Description	Dimensions H x W x D in. (cm)	Storage	UxF300	UxF400	UxF500	UxF600	UxF700
	398329 Sliding Drawer Rack for 2" Boxes	9.5 x 5.5 x 26.9 (24 x 14 x 68.3)	Boxes Per Rack	20	20	20	20	20
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Boxes Per Freezer	300	400	500	600	700
	1950518 Adjustable Side Access Rack for 2" Boxes	9.4 x 5.4 x 26.75 (23.9 x 13.7 x 67.9)	Boxes Per Rack	20	20	20	20	20
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Boxes Per Freezer	300	400	500	600	700

3" Box Racks	Model No. Description	Dimensions H x W x D in. (cm)	Storage	UxF300	UxF400	UxF500	UxF600	UxF700
	398328 Sliding Drawer Rack for 3" Boxes	9.5 x 5.5 x 26.9 (24 x 14 x 68.3)	Boxes Per Rack	15	15	15	15	15
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Boxes Per Freezer	225	300	375	450	525
	1950519 Adjustable Side Access Rack for 3" Boxes	9.4 x 5.4 x 26.75 (23.9 x 13.7 x 67.9)	Boxes Per Rack	15	15	15	15	15
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Boxes Per Freezer	225	300	375	450	525

Microplate Racks	Model No. Description	Dimensions H x W x D in. (cm)	Storage	UxF300	UxF400	UxF500	UxF600	UxF700
	1950639 Sliding Drawer Rack for Standard or Deepwell	9.5 x 5.5 x 26.9 (24 x 14 x 68.3)	Plates Per Rack	28	28	28	28	28
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Plates Per Freezer	420	560	700	840	980
	1950522 Side Access Rack for Standard Plates	9.4 x 5.5 x 25.5 (23.9 x 14 x 64.8)	Plates Per Rack	77	77	77	77	77
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Plates Per Freezer	1155	1540	1925	2310	2695
	398322 Side Access Rack with Locking Rod for Standard or Deepwell	9.4 x 5.5 x 25.7 (23.9 x 14 x 65.3)	Plates Per Rack	98	98	98	98	98
			Racks Per Shelf	3	4	5	6	7
			Racks Per Freezer	15	20	25	30	35
			Plates Per Shelf	294	392	490	588	686


Sliding Drawer Inserts (pack of 5)	Model No.	Description	Slots
	1950671P5	Microplate Insert	7
	1950672P5	Box Insert	5

UxF SERIES

Racking Shelf Kits Includes Sliding Drawer Racks and 2" Boxes with 100 Count Cell Dividers	Model No. ▶	UxF300	UxF400	UxF500	UxF600	UxF700
		RSK300SD5	RSK400SD5	RSK500SD5	RSK600SD5	RSK700SD5
Racks Included		3	4	5	6	7.0
Boxes Included		60	80	100	120	140

Fiberboard Cryo Boxes

	2" (5.1cm) Fiberboard Cryo Boxes 5" x 5" (12.7 cm x 12.7 cm) water repellent cardboard	Model No.	Quantity	Dividers
		5954	12	none
		820002	1	81
		820109	1	100

	3" (7.6cm) Fiberboard Cryo Boxes 5" x 5" (12.7 cm x 12.7 cm) water repellent cardboard	Model No.	Quantity	Dividers
		5956	12	none
		820003	1	81

Fiberboard Grid Dividers

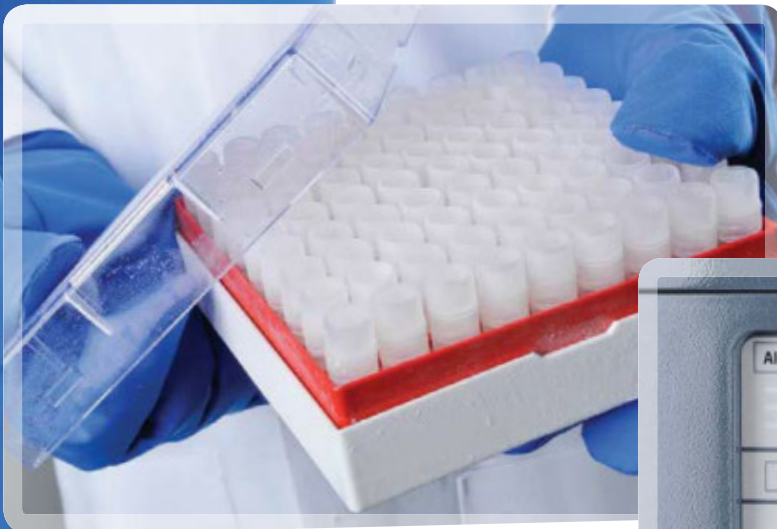
Model No.	Dimensions	Quantity	Holds
5958	10 x 10, 0.49" cell	12	12mm vials (100)
820100	10 x 10, 0.49" cell	1	12mm vials (100)
6212	9 x 9, 0.54" cell	12	13mm vials (81)
820081	9 x 9, 0.54" cell	1	13mm vials (81)
5960	8 x 8, 0.61" cell	12	14mm vials (64)
820064	8 x 8, 0.61" cell	1	14mm vials (64)
5959	7 x 7, 0.7" cell	12	16mm vials (49)
820049	7 x 7, 0.7" cell	1	16mm vials (49)
820025	5 x 5, 0.98" cell	1	25 vials
820016	4 x 4, 1.22" cell	1	16 vials

Thermo Scientific Revco ExF and DxF Series Ultra-Low Temperature Freezers

uncompromised sample protection

Our ExF and DxF upright freezers are designed for daily sample protection and dependability.

Choose our ExF Series freezers for applications requiring -50°C to -86°C , or our DxF Series freezers for applications requiring a -10°C to -40°C range. All models feature a state-of-the-art refrigeration system, rugged construction and easy-to-use microprocessor controls.





Alarms

Probe Failure	Probe Failure
High Temperature	Door Open
Low Temperature	Wrong Power

Mode

Run	Set High Alarm
Set Temperature	Set Low Alarm

-86 Temperature T

Thermo Scientific Revco ExF and DxF Series



ExF

-86°C Freezers

- **Eye-level, easy-to-use microprocessor control panel**
- **Five interior compartment doors** to reduce cold air loss, improve temperature recovery after door openings
- **Choose from painted galvaneel or stainless steel interior in four sizes:** 13, 17, 23 and 28 cu. ft. (368, 490, 651, 793L) to accommodate your specific lab space and capacity requirements

DxF

-40°C Freezers

- **Knee-level, easy-to-use microprocessor control panel**
- **Five interior compartment doors** to reduce cold air loss, improve temperature recovery after door closings
- **Galvaneel interior in three sizes:** 13, 17, and 23 cu. ft. (368, 490, 651L) to accommodate your specific lab space and capacity requirements

Both freezers are designed with these outstanding features:

Heavy gauge, cold-rolled steel exterior construction with a powder coat paint finish that resists chipping and rust

5" (127mm) foamed-in-place, polyurethane insulation

Optional CO₂ or LN₂ safety back-up system for additional protection in the event of a power or mechanical failure

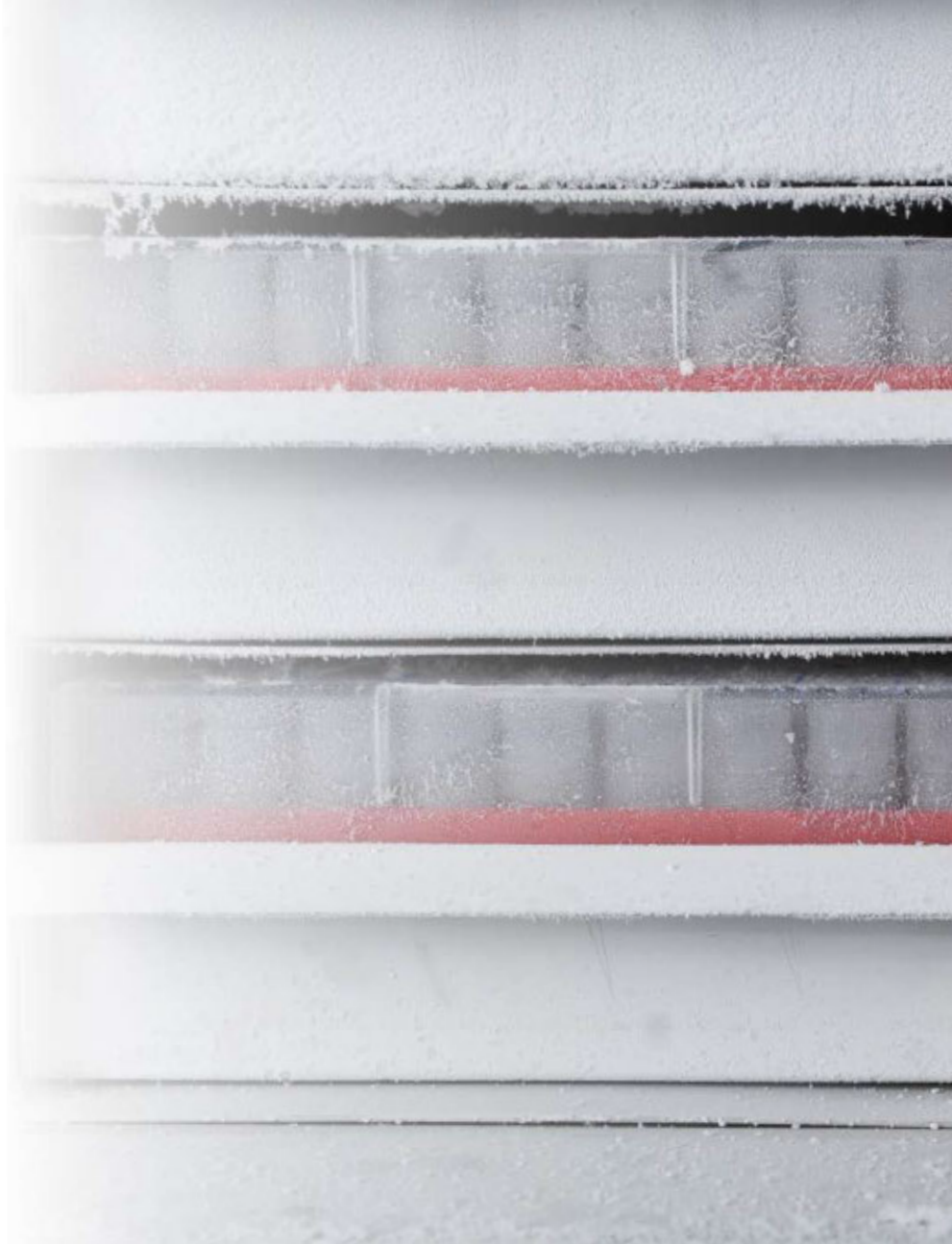
Optional, built-in chart recorder or data logger for continuous monitoring

Sturdy, solid, stainless steel shelving to support a full product load

Vacuum relief port permits easy access after door openings

Ergonomic, lockable door handle

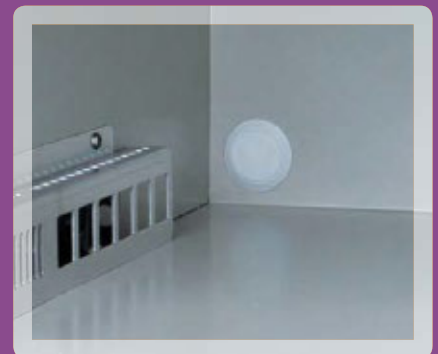
Power Management System with low voltage surge protection and buck/boost



Centralized information center, including microprocessor control and monitoring system, ensures that all controls and displays are easy to reach and read. Eye level on our -86°C freezers or knee level on the -40°C freezers.



Easy-to-remove air filter



Two 1" (25mm) access ports

Thermo Scientific Revco ExF and DxF Series

Thermo Scientific Revco ExF Series (-50°C to -86°C)

Model No.		Capacity		Electrical	Amps/Breaker	Max. Shelf Weight	Interior Dimensions	Exterior Dimensions	Shipping Weight
Painted Interior	Stainless Steel Interior	cu. ft. (liters)	2" Cryobox		(Plug)	lbs. (kg)	H x W x D in. (cm)	H x W x D in. (cm)	lbs. (kg)
ExF24086A	ExF24086SSA	13.0 (368)	240	115V / 60 Hz	16/20 (NEMA 5-20)	125 (57)	51.5 x 23.0 x 19.3 (130.8 x 58.4 x 49.0)	77.9 x 33.3 x 32.9 (197.9 x 84.6 x 83.6)	711 (323)
ExF24086D	ExF24086SSD			208-230V / 60 Hz	12/15 (NEMA 6-15)				
ExF24086V	ExF24086SSV			230V / 50 Hz	12/16 (European)				
ExF32086A	ExF32086SSA	17.3 (490)	320	115V / 60 Hz	16/20 (NEMA 5-20)	125 (57)	51.5 x 23.0 x 25.3 (130.8 x 58.4 x 64.3)	77.9 x 33.3 x 38.9 (197.9 x 84.6 x 98.8)	830 (376)
ExF32086D	ExF32086SSD			208-230V / 60 Hz	12/15 (NEMA 6-15)				
ExF32086V	ExF32086SSV			230V / 50 Hz	12/16 (European)				
ExF40086A	ExF40086SSA	23.0 (651)	400	115V / 60 Hz	16/20 (NEMA 5-20)	125 (57)	51.5 x 30.6 x 25.3 (130.8 x 77.7 x 64.3)	77.9 x 40.8 x 38.9 (197.9 x 103.6 x 98.8)	879 (399)
ExF40086D	ExF40086SSD			208-230V / 60 Hz	12/15 (NEMA 6-15)				
ExF40086V	ExF40086SSV			230V / 50 Hz	12/16 (European)				
ExF60086D	ExF60086SSD	28.0 (793)	600	208-230V / 60 Hz	12/15 (NEMA 6-15)	125 (57)	51.5 x 36.6 x 27.0 (130.8 x 93.0 x 68.6)	77.9 x 46.8 x 38.9 (197.9 x 118.9 x 98.8)	1090 (494)
ExF60086V	ExF60086SSV			230V / 50 Hz	12/15 (European)				

Thermo Scientific Revco DxF Series (-10°C to -40°C)

Model No.	Capacity		Electrical	Amps/Breaker	Max. Shelf Weight	Interior Dimensions	Exterior Dimensions	Shipping Weight
Painted Interior	cu. ft. (liters)	2" Cryobox		(Plug)	lbs. (kg)	H x W x D in. (cm)	H x W x D in. (cm)	lbs. (kg)
DxF24040A	13.0 (368)	240	115V / 60 Hz	16/20 (NEMA 5-20)	125 (57)	51.5 x 23.0 x 19.3 (130.8 x 58.4 x 49.0)	77.9 x 33.3 x 32.9 (197.9 x 84.6 x 83.6)	711 (323)
DxF24040D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
DxF24040V			230V / 50 Hz	12/16 (European)				
DxF32040A	17.3 (490)	320	115V / 60 Hz	16/20 (NEMA 5-20)	125 (57)	51.5 x 23.0 x 25.3 (130.8 x 58.4 x 64.3)	77.9 x 33.3 x 38.9 (197.9 x 84.6 x 98.8)	830 (376)
DxF32040D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
DxF32040V			230V / 50 Hz	12/16 (European)				
DxF40040A	23.0 (653)	400	115V / 60 Hz	16/20 (NEMA 5-20)	125 (57)	51.5 x 30.6 x 25.3 (130.8 x 77.7 x 64.3)	77.9 x 40.8 x 38.9 (197.9 x 103.6 x 98.8)	940 (426)
DxF40040D			208-230V / 60 Hz	12/15 (NEMA 6-15)				
DxF40040V			230V / 50 Hz	12/16 (European)				

Monitoring and Remote Alarms

Description	Voltage	Model No.
Remote Alarm with Audible Signal: Extend the freezer's on-board alarms systems to remote locations in the facility.	120V / 60Hz	5612-1A
	230V / 50Hz	5612-3V
Sensaphone™ Telephone Dialing System: Monitors up to four channels; Dials up to four numbers (not CE). Dedicated phone line is required.	120V / 60Hz	400047
	220V / 50Hz	400182
Sensaphone Telephone Dialing System: Monitors up to eight channels; Dials up to eight numbers (not CE). Dedicated phone line is required.	120V / 60Hz	400134
	220V / 50Hz	400183
Temperature / Power Monitor: External digital and audible/visual alarms monitor the temperature and power supply of the freezer. Includes temperature probe.	120V / 60Hz	400048
	220V / 50Hz	400049



Sensaphone Telephone Dialing System



Temperature / Power Monitor

Visit thermoscientific.com/smart-vue for wireless monitoring options.

ExF/DxF SERIES

Options (Field installed must be installed by a qualified professional)

Description	Model No.	
LN₂ Backup System Maintains temperature down to -80°C with liquid nitrogen.	Factory Installed	1950535
	Field Installed	1950536
CO₂ Backup System Maintains temperature down to -70°C with CO ₂	Factory Installed	1950533
	Field Installed	1950534
Ink Chart Recorder 6" (15.2cm) , seven day ink recorder, to -150°C. Includes one red felt tip pen and box of chart paper (qty. 50)	Factory Installed	201241
	Field Installed	201240
Inkless Chart Recorder 6" (15.2cm) , seven day inkless recorder, to -150°C. Includes box of chart paper (qty. 50)	Factory Installed	201249
	Field Installed	201248
Unique Key Lock	Factory Installed	195915
PT100 Sensor Optional PT100 sensor for connection to building automation systems	Factory Installed	290199
	Field Installed	290211

Accessories

Description	Model No.
Replacement Air Filter. Pack of five filters	195890
Ink Chart Paper (pack of 50)	17020
Inkless Chart Paper (pack of 50)	180000
Replacement Back-Up Battery	400159
Red Felt Tip Chart Pen	245231
Blue Felt Tip Chart Pen	245232
Cryo Gloves Medium	4425
Cryo Gloves Large	4426
LN₂ Transfer Hose Flexible 6' metal hose. 0.5" diameter, 45° flare with swivel ends	4000401
Wall Clamp CO ₂ cylinder holder for securing tank to the wall in accordance with OSHA guidelines	950316
High-Pressure Liquid CO₂ Hose Kink-resistant, stainless steel lined, double-braided sheath. 316 stainless steel NPT F fitting. Max. working pressure 25,000 psig. 6' long	991505
Shelf Kit for 240 box capacity freezer (one shelf and clips)	224195
Shelf Kit for 320 box capacity freezer (one shelf and clips)	224196
Shelf Kit for 400 box capacity freezer (one shelf and clips)	224197
Shelf Kit for 600 box capacity freezer (one shelf and clips)	224198
Seismic restraint kit for 13 cu. ft. (368L)	TF-ULT13
Seismic restraint kit for 17.3 cu. ft. (490L)	TF-ULT17
Seismic restraint kit for 23 cu. ft. (651L)	TF-ULT23
Seismic restraint kit for 28 cu. ft. (600L)	TF-ULT28

Water-Cooled Condenser Option

The water-cooled condenser option is available on our -86°C upright and chest freezers. Your work environment stays cooler because 50% less heat is emitted to your surroundings (i.e. less BTU rejection). A water regulating valve automatically controls the water flow needed to maintain the compressor discharge pressure. Cooler compressor temperatures enhance compressor stability and reliability. Like our standard freezers, those with the water-cooled condenser options are also UL listed to Canadian and United States requirements and bear the CE mark.

Model No.	For Use With
195964	ExF240
195965	ExF320, ExF400, ExF600

The following specifications apply to tower and city water sources:*

Water Pressure and Temperature

Maximum Pressure	150 psig
Maximum Temperature	29.4°C

Connections

Inlet	0.5" compression
Outlet	0.5" compression

Water Flow Rate Required (per minute)

Tower Water	3.0 gal. (11.4L)
City Water	1.0 gal. (3.8L)

Drain Required?

Tower Water	No (return line)
City Water	Yes

Installation requires a qualified technician and should include proper adjustment of the regulating valve which controls the discharge pressure.

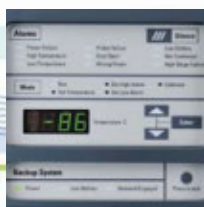
* Actual requirements may vary due to specific water pressure conditions.

Alternate Cord and Plug Options

Model No.	Plug Description
430266	115V/20A Twist Lock Plug (NEMA L5-20P)
430267	230V/15A Twist Lock Plug (NEMA L6-15P)



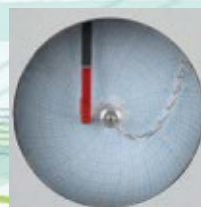
Unique Key Lock



Factory-Installed Back-Up Systems







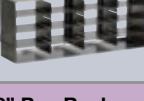



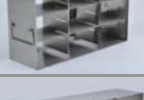

Cryo Gloves



Factory-Installed Chart Recorder

Thermo Scientific Revco ExF and DxF Series

Ultra-Low Temperature Upright Freezer Racks






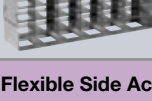


	Rack	Dimensions H x W x D cm	Storage	13CF	17.3CF	23CF	28CF
				368L	490L	951L	793L
2" Box Racks							
	398332 Sliding Drawer Rack	5.5 x 9.4 x 16.6 (14 x 23.9 x 42.2)	Boxes Per Rack	12			
			Racks Per Shelf	4			
			Racks Per Freezer	20			
			Boxes Per Freezer	240			
	398331 Sliding Drawer Rack	5.5 x 9.4 x 22.0 (14 x 23.9 x 55.9)	Boxes Per Rack		16	16	
			Racks Per Shelf		4	5	
			Racks Per Freezer		20	25	
			Boxes Per Freezer		320	400	
	1950728 Sliding Drawer Rack	5.5 x 9.4 x 26.3 (14 x 23.9 x 66.8)	Boxes Per Rack				
			Racks Per Shelf				
			Racks Per Freezer				
			Boxes Per Freezer				
	398324 Adjustable Side Access Rack	5.4 x 9.4 x 16.5 (13.7 x 23.9 x 41.9)	Boxes Per Rack	12			
			Racks Per Shelf	4			
			Racks Per Freezer	20			
			Boxes Per Freezer	240			
	398326 Adjustable Side Access Rack	5.4 x 9.4 x 22.1 (13.7 x 23.9 x 62.5)	Boxes Per Rack		16	16	
			Racks Per Shelf		4	5	
			Racks Per Freezer		20	25	
			Boxes Per Freezer		320	400	
3" Box Racks							
	920099 Sliding Drawer Rack	5.5 x 9.5 x 17.4 (14 x 24 x 44.2)	Boxes Per Rack	9			
			Racks Per Shelf	4			
			Racks Per Freezer	20			
			Boxes Per Freezer	180			
	398330 Sliding Drawer Rack	5.5 x 9.5 x 22 (14 x 24 x 55.9)	Boxes Per Rack		12	12	
			Racks Per Shelf		4	5	
			Racks Per Freezer		20	25	
			Boxes Per Freezer		240	300	
	1950729 Sliding Drawer Rack	5.5 x 9.5 x 26.3 (14 x 24 x 66.8)	Boxes Per Rack				
			Racks Per Shelf				
			Racks Per Freezer				
			Boxes Per Freezer				
	398325 Side Access Rack	5.4 x 9.4 x 16.1 (13.7 x 23.9 x 41.9)	Boxes Per Rack	9			
			Racks Per Shelf	4			
			Racks Per Freezer	20			
			Boxes Per Freezer	180			
	398327 Side Access Rack	5.4 x 9.4 x 22.1 (13.7 x 23.9 x 56.1)	Boxes Per Rack		12	12	
			Racks Per Shelf		4	5	
			Racks Per Freezer		20	25	
			Boxes Per Freezer		240	300	

Shelf Kits Box inventory kits including sliding drawer racks and 2" boxes with 100 cell dividers



Model No.	Freezer	Racks Included	Boxes Included
RSK13SD5	13 (368.1)	4	48
RSK17SD5	17.3 (489.9)	4	64
RSK23SD5	23 (651.3)	5	80
RSK28CFSD5	28.8 (815.1)	6	120

ExF/DxF SERIES

Ultra-Low Temperature Upright Freezer Racks

	Rack	Dimensions H x W x D cm	Storage	13CF	17.3CF	23CF	28CF
				368L	490L	951L	793L
Microplate Racks							
	1950637 Sliding Drawer Rack	5.5 x 9.5 x 16.6 (14 x 24 x 42.2)	Boxes Per Rack	16			
			Racks Per Shelf	4			
			Racks Per Freezer	20			
			Boxes Per Freezer	320			
	1950638 Sliding Drawer Rack	5.5 x 9.5 x 22.0 (14 x 24 x 55.9)	Boxes Per Rack		24	24	
			Racks Per Shelf		4	5	
			Racks Per Freezer		20	25	
			Boxes Per Freezer		480	600	
	1950730 Sliding Drawer Rack	5.5 x 9.5 x 26.3 (14 x 24 x 66.8)	Boxes Per Rack				28
			Racks Per Shelf				6
			Racks Per Freezer				30
			Boxes Per Freezer				840
	398334 Side Access Standard Plate Rack	5.3 x 9.4 x 14.7 (13.5 x 23.9 x 37.3)	Boxes Per Rack	44			
			Racks Per Shelf	4			
			Racks Per Freezer	20			
			Boxes Per Freezer	880			
	398333 Side Access Standard Plate Rack	5.3 x 9.4 x 22.0 (13.5 x 23.9 x 55.9)	Boxes Per Rack		66	66	66
			Racks Per Shelf		4	5	6
			Racks Per Freezer		20	25	30
			Boxes Per Freezer		1320	1650	1980
	398335 Side Access Deepwell Plate Rack	5.3 x 9.4 x 22.0 (13.5 x 23.9 x 55.9)	Boxes Per Rack		30	30	30
			Racks Per Shelf		4	5	6
			Racks Per Freezer		20	25	30
			Boxes Per Freezer		600	750	900
Flexible Side Access Microplate Racks							
	398321 Microplate/ Deepwell Rack with Locking Rods	5.5 x 9.4 x 18.4 (14 x 23.9 x 46.7)	Plates w/lids	70			
			Plates w/o lids	85			
			Deepwell Plates	25			
			Racks per Shelf	4			
			Racks Per Freezer	20			
	398323 Microplate/ Deepwell Rack with Locking Rods	5.5 x 9.4 x 22.0 (14 x 23.9 x 55.9)	Plates w/lids		84	84	
			Plates w/o lids		96	96	
			Deepwell Plates		30	30	
			Racks per Shelf		4	5	
			Racks Per Freezer		20	25	

Fiberboard Cryo Boxes

	2" (5.1cm) Fiberboard Cryo Boxes 5" x 5" (12.7 cm x 12.7 cm) water repellent cardboard	Model No.	Quantity	Dividers
		5954	12	none
		820002	1	81
		820109	1	100
	3" (7.6cm) Fiberboard Cryo Boxes 5" x 5" (12.7 cm x 12.7 cm) water repellent cardboard	Model No.	Quantity	Dividers
		5956	12	none
		820003	1	81

Fiberboard Grid Dividers

Model No.	Dimensions	Quantity	Holds
5958	10 x 10, 0.49" cell	12	12mm vials (100)
820100	10 x 10, 0.49" cell	1	12mm vials (100)
6212	9 x 9, 0.54" cell	12	13mm vials (81)
820081	9 x 9, 0.54" cell	1	13mm vials (81)
5960	8 x 8, 0.61" cell	12	14mm vials (64)
820064	8 x 8, 0.61" cell	1	14mm vials (64)
5959	7 x 7, 0.7" cell	12	16mm vials (49)
820049	7 x 7, 0.7" cell	1	16mm vials (49)
820025	5 x 5, 0.98" cell	1	25 vials
820016	4 x 4, 1.22" cell	1	16 vials

Thermo Scientific Revco CxF Series Ultra-Low Temperature Freezers

versatile. reliable.

Versatile chest configurations. Reliable sample protection.

Our CxF Series chest freezers feature all the sample protection features of our ExF and DxF freezers in four convenient sizes. Choose a -40°C or a -86°C option, as well as a full range of racking solutions for maximum sample storage.

Heavy gauge, cold-rolled steel exterior construction with a powder coat paint finish that resists chipping and rust

5" (12.7 cm) foamed-in-place, polyurethane insulation

Optional built-in chart recorder or data logger for continuous monitoring

Ergonomic, lockable door handle

Convenient interior covers let you minimize sample exposure to outside conditions

Inner sub-lids protect bulk samples from ambient exposure during single sample retrievals

Stainless steel interior



RS-485 and 4-20 milliamp analog outputs for independent monitoring devices and recorders

Heavy duty casters with locking tandem wheel design for smooth mobility

Eye-level, easy-to-use microprocessor control panel; knee level on 3 cu. ft. (85L) models

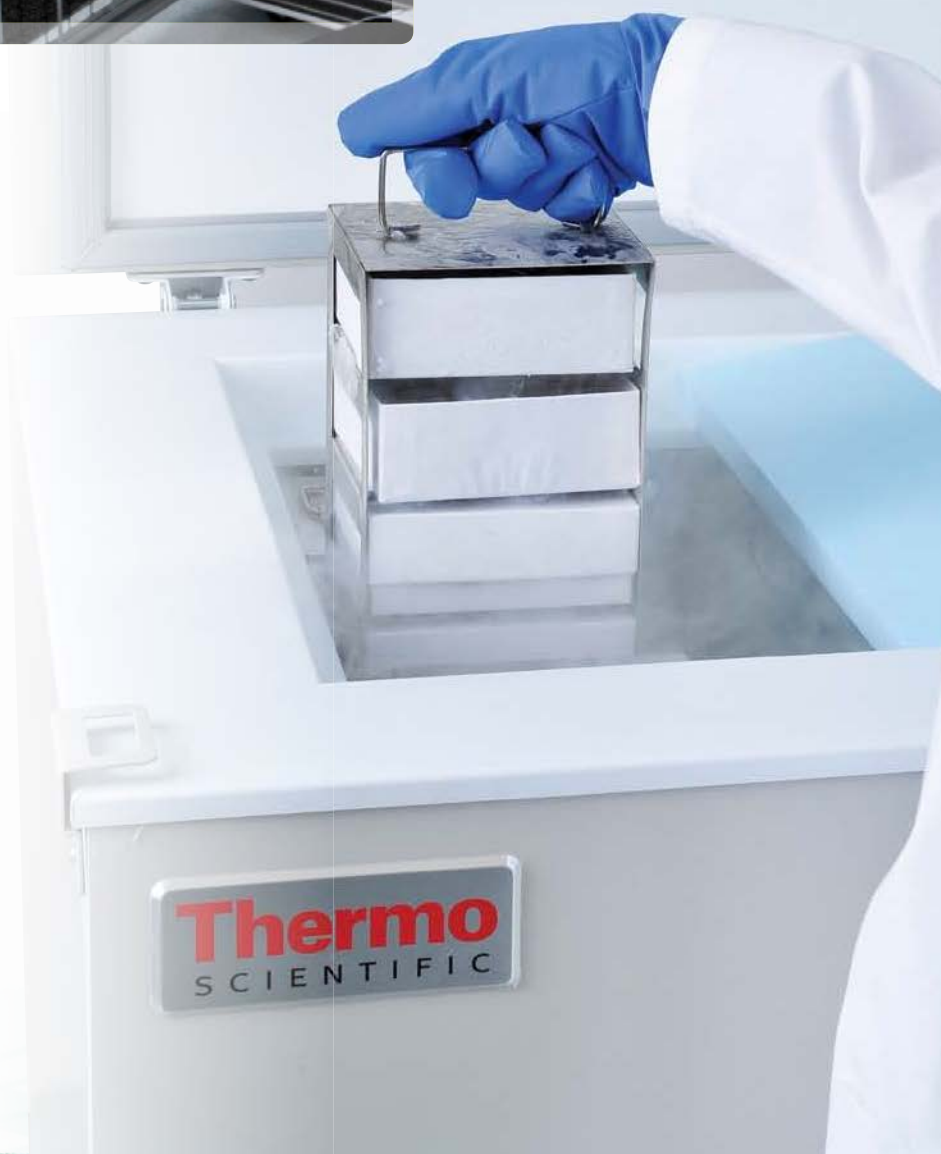
Optional CO₂ or LN₂ safety back-up system for additional protection in the event of a power or mechanical failure

Message center: 12-character alphanumeric LED displays setpoints, system status and alarm messages

Access code to ensure setpoint security



Easy-to-remove, washable air filter provides protection from dust on condenser, reducing the risk of refrigeration malfunction or risk to samples



Thermo Scientific Revco CxF Series

Revco CxF Series Ultra-Low Temperature Chest Freezers (-50°C to -86°C)

Model No.	Capacity		Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D in. (cm)	Exterior Dimensions H x W x D in. (cm)	Shipping Weight lbs. (kg)
	cu. ft. (liters)	2" Cryobox					
ULT390-10-A	3.0 (85)	63	115V / 60 Hz	10.5/20 (NEMA 5-20)	16.5 x 18.5 x 18.5 (41.9 x 47.0 x 47.0)	43.8 x 28.5 x 29.9 (111.3 x 72.4 x 75.9)	432 (196)
ULT390-10-V			230V / 50 Hz	5.4/15 (European)			
ULT1390-10-A	12.7 (360)	252	115V / 60 Hz	16/20 (NEMA 5-20)	28.0 x 42.5 x 18.5 (71.1 x 108.0 x 47.0)	40.5 x 72.0 x 33.4 (102.9 x 182.9 x 84.8)	716 (325)
ULT1390-10-D			208-230V / 60 Hz	12/15 (NEMA 6-15)			
ULT1390-10-V			230V / 50 Hz	12/15 (European)			
ULT1790-10-A	17.0 (481)	348	115V / 60 Hz	16/20 (NEMA 5-20)	28.0 x 58.8 x 18.5 (71.1 x 149.4 x 47.0)	40.5 x 87.6 x 33.8 (102.9 x 222.5 x 85.9)	821 (372)
ULT1790-10-D			208-230V / 60 Hz	12/15 (NEMA 6-15)			
ULT1790-10-V			230V / 50 Hz	12/15 (European)			
ULT2090-10-A	20.0 (566)	396	115V / 60 Hz	16/20 (NEMA 5-20)	28.0 x 66.5 x 18.5 (71.1 x 168.9 x 47.0)	40.5 x 96.0 x 33.4 (102.9 x 243.8 x 84.8)	833 (378)
ULT2090-10-D			208-230V / 60 Hz	12/15 (NEMA 6-15)			
ULT2090-10-V			230V / 50 Hz	12/15 (European)			

Revco CxF Series Ultra-Low Temperature Chest Freezers (-10°C to -40°C)

Model No.	Capacity		Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D in. (cm)	Exterior Dimensions H x W x D in. (cm)	Shipping Weight lbs. (kg)
	cu. ft. (liters)	2" Cryobox					
ULT350-10-A	3.0 (85)	63	115V / 60 Hz	5/15 (NEMA 5-20)	16.5 x 18.5 x 18.5 (41.9 x 47.0 x 47.0)	43.8 x 28.5 x 29.9 (111.3 x 72.4 x 75.9)	395 (179)
ULT350-10-V			230V / 50 Hz	3/15 (European)			
ULT1350-10-A	12.7 (360)	252	115V / 60 Hz	6.5/15 (NEMA 5-20)	28.0 x 42.5 x 18.5 (71.1 x 108.0 x 47.0)	40.5 x 72.0 x 33.4 (102.9 x 182.9 x 84.8)	659 (299)
ULT1350-10-D			208-230V / 60 Hz	6.5/15 (NEMA 6-15)			
ULT1350-10-V			230V / 50 Hz	6.5/15 (European)			
ULT1750-10-A	17.0 (481)	348	115V / 60 Hz	6.5/15 (NEMA 5-20)	28.0 x 58.8 x 18.5 (71.1 x 149.4 x 47.0)	40.5 x 87.6 x 33.8 (102.9 x 222.5 x 85.9)	764 (347)
ULT1750-10-D			208-230V / 60 Hz	6.5/15 (NEMA 6-15)			
ULT1750-10-V			230V / 50 Hz	6.5/15 (European)			
ULT2050-10-A	20.0 (566)	396	115V / 60 Hz	6.5/15 (NEMA 5-20)	28.0 x 66.5 x 18.5 (71.1 x 168.9 x 47.0)	40.5 x 96.0 x 33.4 (102.9 x 243.8 x 84.8)	776 (352)
ULT2050-10-D			208-230V / 60 Hz	6.5/15 (NEMA 6-15)			
ULT2050-10-V			230V / 50 Hz	6.5/15 (European)			

Monitoring and Remote Alarms

Description	Voltage	Model No.
Remote Alarm with Audible Signal: Extend the freezer's on-board alarms systems to remote locations in the facility.	120V / 60Hz	5612-1A
	230V / 50Hz	5612-3V
Sensaphone Telephone Dialing System: Monitors up to four channels; Dials up to four numbers (not CE). Dedicated phone line is required.	120V / 60Hz	400047
	220V / 50Hz	400182
Sensaphone Telephone Dialing System: Monitors up to eight channels; Dials up to eight numbers (not CE). Dedicated phone line is required.	120V / 60Hz	400134
	220V / 50Hz	400183
Temperature / Power Monitor: External digital and audible/visual alarms monitor the temperature and power supply of the freezer. Includes temperature probe.	120V / 60Hz	400048
	220V / 50Hz	400049

Visit thermoscientific.com/smart-vue for wireless monitoring options.

Cx F SERIES

Options (Field-installed must be installed by a qualified professional)

Description		ULT390	Other
		ULT350	Models
LN₂ Backup System Maintains temperature down to -80°C with liquid nitrogen	Factory Installed	1950535	
	Field Installed	1950536	
CO₂ Backup System Maintains temperature down to -70°C with CO ₂	Factory Installed	1950533	
	Field Installed	1950534	
Chart Recorder 6" (15.2cm), seven day ink recorder, to -150°C includes 50 chart papers	Factory Installed	398224	398226
	Field Installed	398225	398223
Data Outputs (Factory Installed Only)	RS-232 (0-1V)	398213	
	RS-485 (0-1V)	398214	
	RS-485 (0-5V)	398215	

Accessories

Description	ULT390	Other
	ULT350	Models
Replacement Air Filter (pack of five)	195947	195948
Ink Chart Paper (pack of 50)	17020	
Inkless Chart Paper (pack of 50)	180000	
Replacement Back-Up Battery	400159	
Red Felt Tip Chart Pen	245231	
Blue Felt Tip Chart Pen	245232	
LN₂ Transfer Hose Flexible 6' metal hose. 0.5" diameter, 45° flare with swivel ends	4000401	
Wall Clamp CO ₂ cylinder holder for securing tank to the wall in accordance with OSHA guidelines	950316	
High-Pressure Liquid CO₂ Hose Kink-resistant, stainless steel lined, double-braided sheath. 316 stainless steel NPT F fitting. Max. working pressure 25,000 psig. 6' long	991505	
Cryo Gloves Medium	4425	
Cryo Gloves Large	4426	

Water-Cooled Condenser Option

The water-cooled condenser option is available on our -86°C upright and chest freezers. Your work environment stays cooler because 50% less heat is emitted to your surroundings (i.e. less BTU rejection). A water regulating valve automatically controls the water flow needed to maintain the compressor discharge pressure. Cooler compressor temperatures enhance compressor stability and reliability. Like our standard freezers, those with the water-cooled condenser options are also UL listed to Canadian and United States requirements and bear the CE mark.

Model No.	For Use With
195967	All chest freezers except 3 cu. ft. (85L)

The following specifications apply to tower and city water sources:*

Water Pressure and Temperature

Maximum Pressure	150 psig
Maximum Temperature	29.4°C

Connections

Inlet	0.5" compression
Outlet	0.5" compression

Water Flow Rate Required (per minute)

Tower Water	3.0 gal. (11.4L)
City Water	1.0 gal. (3.8L)

Drain Required?

Tower Water	No (return line)
City Water	Yes

Installation requires a qualified technician and should include proper adjustment of the regulating valve which controls the discharge pressure.

* Actual requirements may vary due to specific water pressure conditions.

Fiberboard Cryo Boxes



2" (5.1cm)
Fiberboard Cryo Boxes
5" x 5" (12.7 cm x 12.7 cm)
water repellent cardboard

Model No.	Quantity	Dividers
5954	12	none
820002	1	81
820109	1	100



3" (7.6cm)
Fiberboard Cryo Boxes
5" x 5" (12.7 cm x 12.7 cm)
water repellent cardboard







Model No.	Quantity	Dividers
5956	12	none
820003	1	81

Fiberboard Grid Dividers

Model No.	Dimensions	Quantity	Holds
5958	10 x 10, 0.49" cell	12	12mm vials (100)
820100	10 x 10, 0.49" cell	1	12mm vials (100)
6212	9 x 9, 0.54" cell	12	13mm vials (81)
820081	9 x 9, 0.54" cell	1	13mm vials (81)
5960	8 x 8, 0.61" cell	12	14mm vials (64)
820064	8 x 8, 0.61" cell	1	14mm vials (64)
5959	7 x 7, 0.7" cell	12	16mm vials (49)
820049	7 x 7, 0.7" cell	1	16mm vials (49)
820025	5 x 5, 0.98" cell	1	25 vials
820016	4 x 4, 1.22" cell	1	16 vials

Thermo Scientific Revco CxF Series

Revco CxF Series Ultra-Low Temperature Chest Freezer Racks

	Model No.	Description W x H x D in. (cm)	Freezer Vol. cu. ft. (liters)	Boxes Per Rack (Plates)	Racks/Freezer (Plates)	Boxes/Freezer (Plates)
	398184	2" Box Rack with locking rod 5.5 x 15.2 x 5.5 (14 x 38.6 x 14)	3 (85)	7	9	63
	398186	2" Box Rack with locking rod 5.5 x 26.5 x 5.6 (14 x 67.3 x 14.2)	12.7 (360)	12	21	252
			17 (481)	12	29	348
			20 (566)	12	33	396
	398185	3" Box Rack 5.5 x 16 x 5.5 (14 x 40.6 x 14)	3 (85)	5	9	45
	398187	3" Box Rack 5.5 x 26.5 x 5.5 (14 x 67.3 x 14)	12.7 (360)	8	21	168
			17 (481)	8	29	232
			20 (566)	8	33	264
	398188	27 Position Microplate Rack 5.3 x 25.8 x 3.5 (13.5 x 65.5 x 8.9)	12.7 (360)	(27)	(33)	(891)
			17 (481)	(27)	(48)	(1,296)
			20 (566)	(27)	(51)	(1,377)
	114048	Wire Basket with Rollers* 11.8 x 12.3 x 16.5 (30 x 31.2 x 42)	12.7 (360)	N/A	5	N/A
			20 (566)	N/A	9	N/A
	189001	Wire Basket Rail Set	12.7 (360)	N/A	N/A	N/A
	189000	Wire Basket Rail Set	12.7 (566)	N/A	N/A	N/A

* Basket rail set is required



keep track

of your samples with Thermo Scientific Nunc Cryobank

Thermo Scientific™ Nunc™ Cryobank™ systems are a natural companion to our Revco ultra-low temperature freezers. Both have been designed to maximize sample protection as well as sample space. The vials' 2D barcode is easily read by instruments, offering safe sample identification and reading of entire racks in one process. In addition, our Cryobank systems provide the highest density cryo vial available: you can actually store up to 118,300 vials inside our 33.5 cu. ft. (949L) Revco UxF 700 freezer. Plus Thermo Scientific Nunc tubes conveniently click into their storage compartments with ease and can be handled without the risk of an accidental drop – yet one more reason why your samples deserve the outstanding quality and protection of Nunc storage products. For more information, visit www.thermoscientific.com/densestorage.

Thermo Scientific™ Smart-Vue™ obsessive is smart.

The Smart-Vue wireless monitoring solution safeguards the integrity of precious samples by continuously monitoring critical parameters of laboratory equipment and securely logging data to give you peace-of-mind. This wireless solution features audit trail traceability to assist with conformance to 21 CFR part 11, and other regulatory requirements. For more information, visit www.thermoscientific.com/smart-vue

Smart

Continuous, real-time monitoring of critical parameters – alerting you remotely when sample integrity is threatened

Scalable

Flexibility to grow with your expanding laboratory needs

Simple

Easy to install, use and maintain

**For more information, contact your sales representative.
Smart-Vue is not available in all Radio Frequency (RF) regions.**

Note: Smart-Vue wireless monitoring kits are designed for first time users monitoring critical temperature parameters in ultra-low temperature freezers. Smart-Vue modules and sensors are available for temperature, RH, CO₂ concentration, differential pressure, 4-20mA output, ambient conditions and alarm/relay dry contacts. Solutions vary by RF regions worldwide and are compatible with multiple types of laboratory equipment. Please ask your sales representative to evaluate a Smart-Vue wireless monitoring solution that best meets your specific needs.



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