

**New! Thermo Scientific**  
Revco Ultra-Low Temperature Freezers

Optimum storage capacity with  
ultimate protection and energy savings



your samples  
**our obsession**

**Thermo**  
SCIENTIFIC



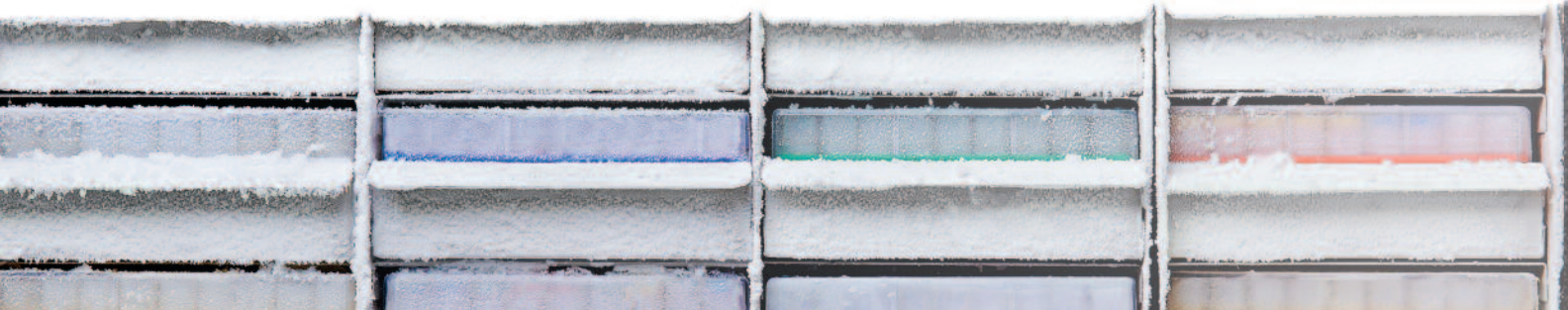
# your samples our obsession

**To the rest of the world, these are samples. To us, they are a scientist's life's work.**

A lab's mission. A company's breakthrough. We are obsessed with sample integrity.

Every one of our cold storage solutions is optimized for the best protection of critical samples.

Our Revco® ultra-low temperature freezers offer a complete range of upright and chest configurations designed for maximum sample protection.



# Thermo Scientific Revco Ultra-Low Temperature Freezers

## Introducing the 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 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	300	400	500	600	700	240	320	400	600
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 <sup>2</sup>	4,255	4,728	5,040	5,272	5,447	3,154	3,600	3,630	4,747
	vials/ m <sup>2</sup>	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	Dry Contacts – Standard , Optional PT100 Probe
Data Outputs	Log file through USB	Not Available

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

#### -10°C to -40°C Upright and Chest Freezers

Choose our DxF upright freezers or CxF chest freezers for applications requiring storage between -10°C and -40°C. Select from 13, 17, or 23 cu. ft. (368, 490, 651L) uprights or 3, 12, 17 or 20 cu. ft. (85, 360, 481, 566L) chest freezers. Models are available with optional chart recorders and backup systems.

#### -86°C Chest Freezers

Do you require a -86°C chest freezer configuration? Select from our 3, 12, 17 and 20 cu. ft. (85, 360, 481, 566L) cabinets to meet a wide variety of storage needs. Models are available with optional chart recorders and back-up systems.

# Introducing the Thermo Scientific Revco UxF Series

## 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.

*outstanding thermal performance, safety and security*

### 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.<sup>1</sup>

### 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.

\* Compared to high-performance mode.

<sup>1</sup> Based on internal performance data. Data on file. May, 2011.



## 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.



## Sample 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.<sup>1</sup>

<sup>1</sup> Based on internal data. Data on file. May, 2011.

# 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

## 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

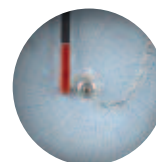


- **Power management system** protects against a wide range of voltage variation and is easily accessible through the touch-screen display

- Simplify installation with our new easy-roll 2" (5cm) locking casters

- **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





# at-a-glance

*outstanding features  
inside and out*

- **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 LN<sub>2</sub> and CO<sub>2</sub> back-up systems**  
Provide three control points of additional protection to ensure maximum sample protection
- **Easily exchange data**  
Use the USB port to download freezer temperature and event data or upload freezer settings from one freezer to another
- **No more post-it notes**  
The new, built-in white board lets you organize your notes easily
- **Long life durability**  
Rugged steel construction with a corrosion-resistant coating



**Optional stainless steel inventory racks** for complete sample maximization and protection

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

## **NEW 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



## **NEW Reinforced Shelves**

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



## **NEW Outer Door Gaskets**

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



## **NEW 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.



# 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	2 mL Tubes	Cryobank 1 mL Tubes
UxF300	14.9 cu. ft. (421 L)	7.05 sq.ft. (0.65 m <sup>2</sup> )	300	225	30,000	50,700
UxF400	19.4 cu. ft. (548 L)	8.46 sq.ft. (0.79 m <sup>2</sup> )	400	300	40,000	67,600
UxF500	24.1 cu. ft. (682 L)	9.92 sq.ft. (0.92 m <sup>2</sup> )	500	375	50,000	84,500
UxF600	28.8 cu. ft. (815 L)	11.38 sq.ft. (1.06 m <sup>2</sup> )	600	450	60,000	101,400
UxF700	33.5 cu. ft. (949 L)	12.85 sq.ft. (1.19 m <sup>2</sup> )	700	525	70,000	118,300



# Your choice of refrigeration

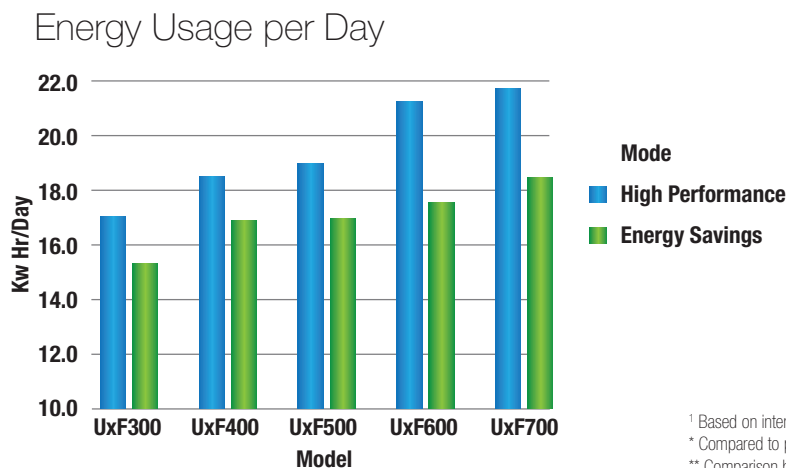
For customers who require the strictest tolerances, our high-performance mode provides the tightest temperature uniformity and peak variation.\*\* For most applications, our energy savings mode offers excellent temperature control, plus up to 15% savings on energy usage.\*\*

## High Performance<sup>1</sup>

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

## Energy Savings<sup>1</sup>

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



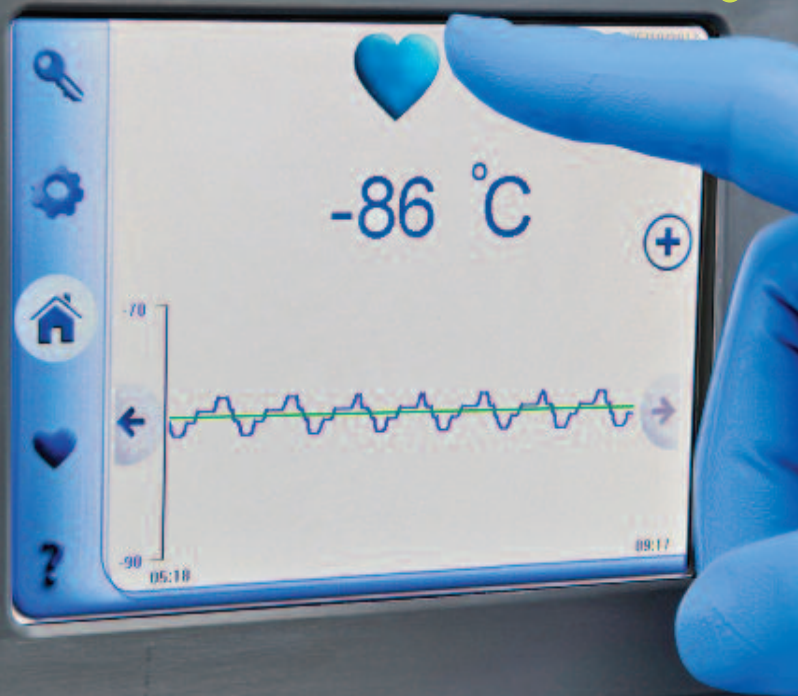
By controlling the temperature and time of the cycles, the energy savings cycle can save up to 15% while still offering tightly-controlled cabinet temperature and excellent door-opening recovery. The high-performance mode maintains the strictest cabinet temperature control.

<sup>1</sup> Based on internal performance data. Data on file. May, 2011.

\* Compared to previous generation Revco.

\*\* 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:** CO<sub>2</sub> or LN<sub>2</sub> 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.

Date	Time	Event
05/10/2017	10:20	Freezer Temperature Fluctuation
05/10/2017	11:05	Door Opened
05/10/2017	12:47:26	Freezer Temperature Fluctuation
05/10/2017	01:47:24	Power Loss to Freezer
05/10/2017	01:48:21	Power Loss to Freezer
05/10/2017	01:48:56	Freezer Temperature Fluctuation
05/10/2017	01:14:18	System Settings
05/10/2017	01:02:09	Freezer Temperature Fluctuation
05/10/2017	01:27:30	Freezer Temperature Fluctuation
05/10/2017	01:14:01	Freezer Temperature Fluctuation

## ◀ 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



UxF300



UxF400



UxF500



UxF600



UxF700

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

Model No.	Capacity cu. ft. (liters)	Cryobox Capacity 2 in.	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)
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
<b>Standard Plugs</b>		
US125V20A	NEMA 5-20	
US230V15A	NEMA 6-15	
EU230V16A	Continental EU	
<b>Specialty Plugs</b>		
IT230V16A	Italy	
UK230V13A	Great Britain	
IN230V16A	India	
IS230V16A	Israel	
AU230V16A	Australia	
CH230V16A	China	
DK230V16A	Denmark	
AR230V16A	Argentina	
SW230V16A	Switzerland	
BR230V16A	Brazil	

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

Description	For use with ▶	UxF300	UxF400	UxF500	UxF600	UxF700
<b>LN<sub>2</sub> Backup System</b> 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
<b>CO<sub>2</sub> Backup System</b> Maintains temperature down to -67°C with CO <sub>2</sub>  Models for UxF300 are stand alone.	Factory Installed	N/A	CO4567	CO4567	CO4567	CO4567
	Field Installed	FCO300A* FCO300D* FCO300V* FCO300W*	FCO4567	FCO4567	FCO4567	FCO4567
<b>Chart Recorder (Inkless)</b> 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	FCRP400R	FCR567R	FCR567R	FCR567R
<b>Chart Recorder (Ink)</b> 6" (15.2cm), seven day inkless 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
<b>Access Key Option Card</b> access control. Includes five key cards.	Factory Installed	RAC34567	RAC34567	RAC34567	RAC34567	RAC34567
	Field Installed	FRAC34567	FRAC34567	FRAC34567	FRAC34567	FRAC34567
<b>Class I Medical Device Option</b> For diagnostic use†	Factory Tested	MEDDEV1	MEDDEV1	MEDDEV1	MEDDEV1	MEDDEV1
<b>Class II Medical Device Option</b> For blood component storage use††	Factory Tested	MEDDEV2	MEDDEV2	MEDDEV2	MEDDEV2	MEDDEV2
<b>Stainless Steel Freezer Interior</b>	Factory Tested	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.

†† Independent automated monitoring is required such as a chart recorder. Note: this medical application is considered Class II for FDA but is currently Class I for MDD.

## Accessories

Description	For use with ▶	UxF300	UxF400	UxF500	UxF600	UxF700
<b>Access Key Pack (U.S.)</b> Includes five cards; supports ISO15693 Protocol		ACU34567	ACU34567	ACU34567	ACU34567	ACU34567
<b>Access Key Pack (EU)</b> Includes five cards; supports ISO14443 Protocol		ACE34567	ACE34567	ACE34567	ACE34567	ACE34567
<b>Shelf Kit</b> Includes one shelf and clips		SK300	SK400	SK500	SK600	SK700
<b>Chart Paper Ink</b> (pack of 50)		17020	17020	17020	17020	17020
<b>Chart Paper Inkless</b> (pack of 50)		N/A	6185	6185	6185	6185
<b>Replacement Air Filter</b>		AF34567	AF34567	AF34567	AF34567	AF34567
<b>Replacement Back-Up Battery</b>		400159	400159	400159	400159	400159
<b>Alarm Delay Module</b> 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
<b>Cryo Gloves® Medium</b>		4425	4425	4425	4425	4425
<b>Cryo Gloves Large</b>		4426	4426	4426	4426	4426

## 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
<b>WC34567</b>	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)

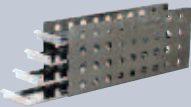

### Water Flow Rate Required:



1.0 gal. (3.8L) per minute

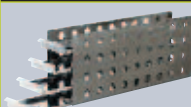


### Connection:

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
	<b>398329</b> Sliding Drawer Rack for 2" Boxes	9.5 x 5.5 x 26.3 (24 x 14 x 66.8)	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
	<b>1950518</b> Adjustable Side Access Rack for 2" Boxes	9.4 x 5.4 x 26.5 (23.9 x 13.7 x 69.9)	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
	<b>398328</b> Sliding Drawer Rack for 3" Boxes	9.5 x 5.5 x 26.3 (24 x 14 x 66.8)	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
	<b>1950519</b> Adjustable Side Access Rack for 3" Boxes	9.4 x 5.4 x 26.5 (23.9 x 13.7 x 67.3)	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


Microplate Racks	Model No. Description	Dimensions H x W x D in. (cm)	Storage	UxF300	UxF400	UxF500	UxF600	UxF700
	<b>1950639</b> Sliding Drawer Rack for Standard or Deepwell	9.5 x 5.5 x 26.3 (24 x 14 x 66.8)	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
	<b>1950522</b> 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
	<b>398322</b> 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

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

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



## Fiberboard Cryo Boxes

	<b>2" (5.1cm)</b> <b>Fiberboard Cryo Boxes</b> 5.3" x 5.3" (13.5 x 13.5cm) water repellent cardboard	Model No.	Quantity	Dividers
		5954	12	none
		820002	1	81
		820109	1	100

	<b>3" (7.6cm)</b> <b>Fiberboard Cryo Boxes</b> 5.3" x 5.3" (13.5 x 13.5cm) 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 Smart-Vue

Remote monitoring for your ultra-low temperature freezers

Trust Thermo Scientific Smart-Vue – a complete and simplified wireless monitoring solution to monitor critical samples stored inside your ultra-low temperature freezer. Smart-Vue™ monitor features audit trail traceability to assist with conformance to 21 CFR part 11 and other regulatory requirements while safeguarding critical samples.

- Intelligent plug and play simplicity
- Intuitive dashboard
- Flexible operation
- Precise monitoring
- Data traceability and security
- Numerous configuration capabilities
- Central monitoring system – scalable

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

smart.  
scalable.  
simple.



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.

# uncompromised sample protection





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

Our ExF and DxF upright freezers are designed for daily sample protection and dependability. Choose our ExF Series freezers for applications requiring  $-50^{\circ}\text{C}$  to  $-86^{\circ}\text{C}$ , or our DxF Series freezers for applications requiring a  $-10^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$  range. All models feature a state-of-the-art refrigeration system, rugged construction and easy-to-use microprocessor controls.

## Thermo Scientific Revco ExF Series -86°C Freezers



# ExF

**Eye-level, easy-to-use microprocessor control panel**

**Five interior compartment doors** to reduce cold air loss, improve temperature recovery after door openings

**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

## Thermo Scientific Revco DxF Series -40°C Freezers



# DxF

**Knee-level, easy-to-use microprocessor control panel.**

**Five interior compartment doors** to reduce cold air loss, improve temperature recovery after door closings

**Galvneel 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 CO<sub>2</sub> or LN<sub>2</sub> 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



**Easy-to-remove air filter**

**Two 1" (25mm) access ports**



**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.



# Thermo Scientific Revco ExF and DxF Series

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

Model No.	Capacity cu. ft. (liters)	2 in. Box Qty.	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)
ExF24086A	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			208-230V / 60 Hz	12/15 (NEMA 6-15)				
ExF24086V			230V / 50 Hz	12/16 (European)				
ExF32086A	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			208-230V / 60 Hz	12/15 (NEMA 6-15)				
ExF32086V			230V / 50 Hz	12/16 (European)				
ExF40086A	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			208-230V / 60 Hz	12/15 (NEMA 6-15)				
ExF40086V			230V / 50 Hz	12/16 (European)				
ExF60086D	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			230V / 50 Hz	12/15 (European)				

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

Model No.	Capacity cu. ft. (liters)	2 in. Box Qty.	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)
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.
<b>Remote Alarm with Audible Signal:</b> Extend the freezer's on-board alarms systems to remote locations in the facility.	120V / 60Hz	<b>5612-1A</b>
	230V / 50Hz	<b>5612-3V</b>
<b>Sensaphone® Telephone Dialing System:</b> Monitors up to four channels; Dials up to four numbers (not CE). Dedicated phone line is required.	120V / 60Hz	<b>400047</b>
	220V / 50Hz	<b>400182</b>
<b>Sensaphone Telephone Dialing System:</b> Monitors up to eight channels; Dials up to eight numbers (not CE). Dedicated phone line is required.	120V / 60Hz	<b>400134</b>
	220V / 50Hz	<b>400183</b>
<b>Temperature / Power Monitor:</b> External digital and audible/visual alarms monitor the temperature and power supply of the freezer. Includes temperature probe.	120V / 60Hz	<b>400048</b>
	220V / 50Hz	<b>400049</b>



Sensaphone Telephone Dialing System



Temperature / Power Monitor

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

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

## Accessories

Description	Model No.
<b>Replacement Air Filter.</b> Pack of five filters	<b>195890</b>
<b>Ink Chart Paper</b> (pack of 50)	<b>17020</b>
<b>Inkless Chart Paper</b> (pack of 50)	<b>180000</b>
<b>Replacement Back-Up Battery</b>	<b>400159</b>
<b>Red Felt Tip Chart Pen</b>	<b>245231</b>
<b>Blue Felt Tip Chart Pen</b>	<b>245232</b>
<b>Cryo Gloves Medium</b>	<b>4425</b>
<b>Cryo Gloves Large</b>	<b>4426</b>
<b>LN<sub>2</sub> Transfer Hose</b> Flexible 6' metal hose. 0.5" diameter, 45° flare with swivel ends	<b>4000401</b>
<b>Wall Clamp</b> CO <sub>2</sub> cylinder holder for securing tank to the wall in accordance with OSHA guidelines	<b>950316</b>
<b>High-Pressure Liquid CO<sub>2</sub> Hose</b> Kink-resistant, stainless steel lined, double-braided sheath. 316 stainless steel NPT F fitting. Max. working pressure 25,000 psig. 6' long	<b>991505</b>
<b>Shelf Kit for 240 box capacity freezer</b> (one shelf and clips)	<b>224134</b>
<b>Shelf Kit for 320 box capacity freezer</b> (one shelf and clips)	<b>224135</b>
<b>Shelf Kit for 400 box capacity freezer</b> (one shelf and clips)	<b>224158</b>
<b>Shelf Kit for 600 box capacity freezer</b> (one shelf and clips)	<b>224180</b>

## 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
<b>195964</b>	ExF240
<b>195965</b>	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
<b>430266</b>	115V/20A Twist Lock Plug (NEMA L5-20P)
<b>430267</b>	230V/15A Twist Lock Plug (NEMA L6-15P)



Unique Key Lock



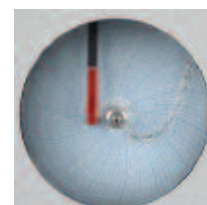
Chart Pens



Factory-Installed Back-Up Systems



Cryo Gloves



Factory-Installed Chart Recorder

# Thermo Scientific Revco ExF and DxF Series

## Thermo Scientific Revco ExF and DxF Series Ultra-Low Temperature Upright Freezer Racks

	Model No.	Description W x H x D in. (cm)	Freezer Vol. cu. ft. (liters)	Boxes/ Rack	Racks/ Shelf	Total Racks/ Freezer	Boxes/ Freezer
<b>2" Box Racks</b>							
	398332	<b>Sliding Drawer Rack for 2" Box</b> 5.5 x 9.4 x 16.6 (14 x 23.9 x 42.2)	13 (368)	12	4	20	240
	398331	<b>Sliding Drawer Rack for 2" Box</b> 5.5 x 9.4 x 22.0 (14 x 23.9 x 55.9)	17.3 (490)	16	4	20	320
			23.0 (651)	16	5	25	400
	398329	<b>Sliding Drawer Rack for 2" Box</b> 5.5 x 9.4 x 26.3 (14 x 23.9 x 66.8)	28.1 (793)	20	6	30	600
	398324	<b>Adjustable Side Access Rack for 2" Box</b> 5.4 x 9.4 x 16.5 (13.7 x 23.9 x 41.9)	13.0 (368)	12	4	20	240
	398326	<b>Adjustable Side Access Rack for 2" Box</b> 5.4 x 9.4 x 22.1 (13.7 x 23.9 x 62.5)	17.3 (490)	16	4	20	320
			23.0 (651)	16	5	25	400
<b>3" Box Racks</b>							
	920099	<b>Sliding Drawer Rack for 3" Box</b> 5.5 x 9.5 x 17.4 (14 x 24 x 44.2)	13.0 (368)	9	4	20	180
	398330	<b>Sliding Drawer Rack for 3" Box</b> 5.5 x 9.5 x 22 (14 x 24 x 55.9)	17.3 (490)	12	4	20	240
			23.0 (651)	12	5	25	300
	398328	<b>Sliding Drawer Rack for 3" Box</b> 5.5 x 9.5 x 26.3 (14 x 24 x 66.8)	28.8 (815)	15	6	30	450
	398325	<b>Side Access Rack for 3" Box</b> 5.4 x 9.4 x 16.1 (13.7 x 23.9 x 41.9)	13.0 (368)	9	4	20	180
	398327	<b>Side Access Rack for 3" Box</b> 5.4 x 9.4 x 22.1 (13.7 x 23.9 x 56.1)	17.3 (490)	12	4	20	240
			23.0 (651)	12	5	25	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
RSK600SD5	28.8 (815.1)	6	120




## Thermo Scientific Revco ExF and DxF Series Ultra-Low Temperature Upright Freezer Racks

	Model No.	Description W x H x D in. (mm)	Freezer Vol. cu. ft. (liters)	Plates	Racks/ Shelf	Total Racks/Freezer	Plates/Freezer
<b>Microplates</b>							
	398334	<b>Side Access Microplate Rack</b> 5.3 x 9.4 x 14.7 (13.5 x 23.9 x 37.3)	13.0 (368)	44	4	20	880
	398333	<b>Side Access Microplate Rack</b> 5.3 x 9.4 x 22.0 (13.5 x 23.9 x 55.9)	17.3 (490)	66	4	20	1,320
			23.0 (651)	66	5	25	1,650
			28.8 (815)	66	6	30	1,980
	398335	<b>Side Access Deepwell Rack</b> 5.3 x 9.4 x 22.0 (13.5 x 23.9 x 55.9)	17.3 (490)	30	4	20	600
			23.0 (651)	30	5	25	750
			28.8 (815)	30	6	30	900
	1950637	<b>Sliding Drawer Rack for Microplates</b> 5.5 x 9.5 x 16.6 (14 x 24 x 42.2)	13.0 (368)	16	4	20	320
	1950638	<b>Sliding Drawer Rack for Microplates</b> 5.5 x 9.5 x 22.0 (14 x 24 x 55.9)	17.3 (490)	24	4	20	480
			23.0 (651)	24	5	25	600
	1950639	<b>Sliding Drawer Rack for Microplates</b> 5.5 x 9.5 x 26.3 (14 x 24 x 66.8)	28.1 (815)	28	6	30	840
	Model No.	Description W x H x D in. (mm)	Freezer Vol. cu. ft. (liters)	Plates with Lids	Plates w/o Lids	Deepwell Plates	Racks/Shelf Racks/Freezer
<b>Flexible Side Access Microplate Racks</b>							
	398321	<b>Microplate/ Deepwell Rack with Locking Rods</b> 5.5 x 9.4 x 18.4 (14 x 23.9 x 46.7)	13.0 (368)	70	85	25	4,20
	398323	<b>Microplate/ Deepwell Rack with Locking Rods</b> 5.5 x 9.4 x 22.0 (14 x 23.9 x 55.9)	17.3 (490)	84	96	30	4,20
			23.0 (651)	84	96	30	5,25

### Fiberboard Cryo Boxes

	<b>2" (5.1cm) Fiberboard Cryo Boxes</b> 5.3" x 5.3" (13.5 x 13.5cm) water repellent cardboard	<b>Model No.</b>	<b>Quantity</b>	<b>Dividers</b>
		5954	12	none
		820002	1	81
		820109	1	100

	<b>3" (5.1cm) Fiberboard Cryo Boxes</b> 5.3" x 5.3" (13.5 x 13.5cm) water repellent cardboard	<b>Model No.</b>	<b>Quantity</b>	<b>Dividers</b>
		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 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  $-40^{\circ}\text{C}$  or a  $-86^{\circ}\text{C}$  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

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



- Eye-level, easy-to-use microprocessor control panel; knee level on 3 cu. ft. (85L) models
- Optional  $\text{CO}_2$  or  $\text{LN}_2$  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

- 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-232 and 4-20 milliamp analog outputs for independent monitoring devices and recorders

Heavy duty casters with locking tandem wheel design for smooth mobility

**versatile.**  
**reliable.**

# Thermo Scientific Revco CxF Series

## Thermo Scientific Revco CxF Series Ultra-Low Temperature Chest Freezers (Temperature Range: -50°C to -86°C)

Model No.	Capacity cu. ft. (liters)	Cryobox Capacity 2 in.	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)
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)			

## Thermo Scientific Revco CxF Series Ultra-Low Temperature Chest Freezers (Temperature Range: -10°C to -40°C)

Model No.	Capacity cu. ft. (liters)	Cryobox Capacity 2 in.	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)
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.
<b>Remote Alarm with Audible Signal:</b> Extend the freezer's on-board alarms systems to remote locations in the facility.	120V / 60Hz	<b>5612-1A</b>
	230V / 50Hz	<b>5612-3V</b>
<b>Sensaphone Telephone Dialing System:</b> Monitors up to four channels; Dials up to four numbers (not CE). Dedicated phone line is required.	120V / 60Hz	<b>400047</b>
	220V / 50Hz	<b>400182</b>
<b>Sensaphone Telephone Dialing System:</b> Monitors up to eight channels; Dials up to eight numbers (not CE). Dedicated phone line is required.	120V / 60Hz	<b>400134</b>
	220V / 50Hz	<b>400183</b>
<b>Temperature / Power Monitor:</b> External digital and audible/visual alarms monitor the temperature and power supply of the freezer. Includes temperature probe.	120V / 60Hz	<b>400048</b>
	220V / 50Hz	<b>400049</b>

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

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

## Accessories

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

## 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

## 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.

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?

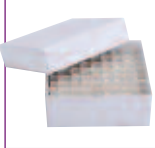

Tower Water	No (return line)
City Water	Yes

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.

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

## Thermo Scientific Cryoboxes and Dividers

	<b>2" (5.1cm) Fiberboard Cryo Boxes</b> 5.3" x 5.3" (13.5 x 13.5cm) water repellent cardboard	<b>Model No.</b>	<b>Quantity</b>	<b>Dividers</b>
		5954	12	none
		820002	1	81
		820109	1	100
	<b>3" (7.6cm) Fiberboard Cryo Boxes</b> 5.3" x 5.3" (13.5 x 13.5cm) water repellent cardboard	<b>Model No.</b>	<b>Quantity</b>	<b>Dividers</b>
		5956	12	none
		820003	1	81

# Thermo Scientific Revco CxF Series

## Thermo Scientific 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 5.5 x 16 x 5.5 (14 x 40.6 x 14)	3 (85)	7	9	63
	398186	2" Box Rack 5.5 x 26.5 x 5.5 (14 x 67.3 x 14)	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](http://www.thermoscientific.com/densestorage).



[www.thermoscientific.com/cold](http://www.thermoscientific.com/cold)

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**Australia** +61 39757 4300  
**Austria** +43 1 801 40 0  
**Belgium** +32 53 73 42 41  
**China** +86 21 6865 4588 or  
+86 10 8419 3588,  
**France** +33 2 2803 2180  
**Germany national toll free** 08001-536 376  
**Germany international** +49 6184 90 6000

**India toll free** 1800 22 8374  
**India** +91 22 6716 2200  
**Italy** +32 02 95 05 92 54  
**Japan** +81 45 453 9220  
**Netherlands** +31 76 579 55 55  
**New Zealand** +64 9 980 6700  
**Nordic/Baltic/CIS countries**  
+358 9 329 10200

**Russia** +7 812 703 42 15  
**Spain/Portugal** +34 93 223 09 18  
**Switzerland** +41 44 454 12 22  
**UK/Ireland** +44 870 609 9203  
**USA/Canada** +1 866 984 3766  
  
**Other Asian countries** +852 2885 4613  
**Countries not listed:** +49 6184 90 6000

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