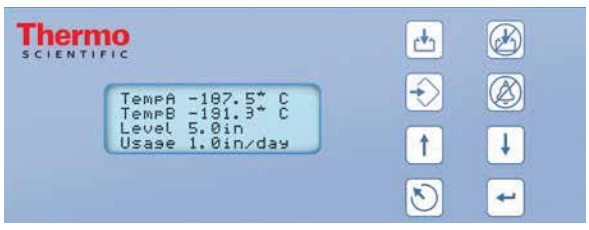
high-efficiency storage

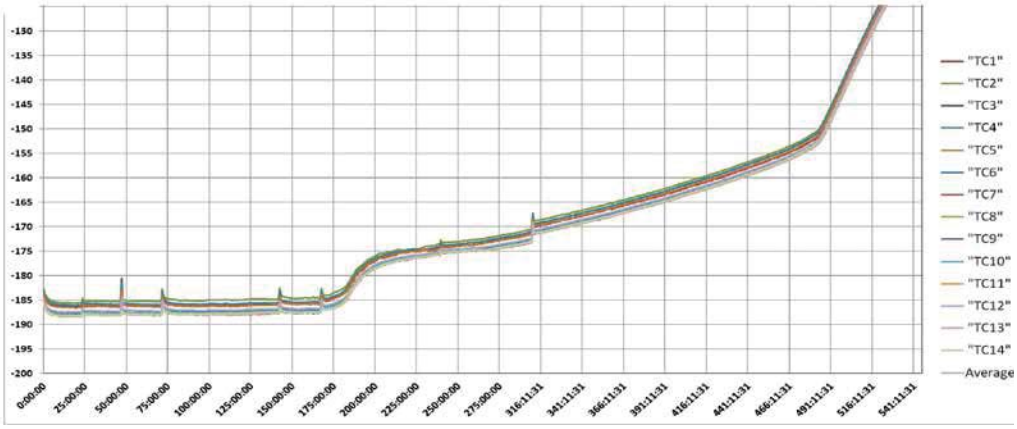
Thermo Scientific CryoExtra Cryogenic Storage

Our new CryoExtra™ 8100 series high-efficiency storage solutions provide outstanding sample protection for scientific research with uniform cryogenic temperatures throughout the vessel. Automated temperature monitoring and microprocessor-based LN_2 level control provide peace-of-mind for valuable samples. Ease-of-use is ensured with built-in steps, flat workspace, and ergonomic lids. All vessels can accommodate both vapor and liquid phase storage.

- Four capacities from 463 L to 1,770 L
- Sample capacity from 19,500 up to 93,000 1.2 – 2.0 mL vials (30,420 to 152,100 CryoBank vials)
- Minimal footprint – 1,770 L model has the same exterior footprint as the 1,745 L unit, saving valuable lab space
- Outstanding temperature uniformity
- Stable lid opening temperature
- Advanced temperature monitor and alarms
- Automated fill and level monitoring
- Push button de-fog for easy sample location
- Hot gas bypass keeps warm nitrogen gas from impacting samples during a fill cycle
- User comfort features and convenient, built-in workspace
- Lockable lid for sample protection
- Designed for global use with 100-240V and 50/60 Hz power supplies. Local power cords and plugs sets available.

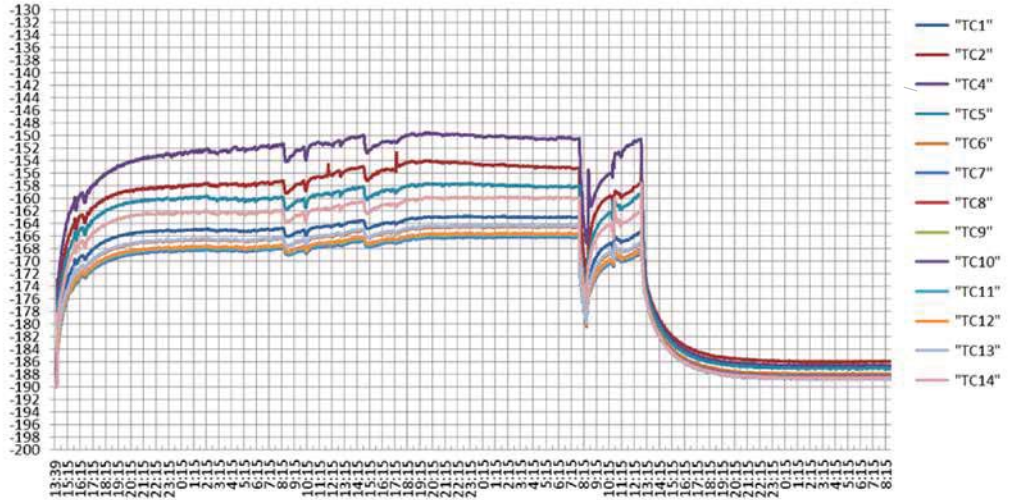


Microprocessor-based controller



No LN_2 Re-Supply Test Result (Model CE8140)

The insulative properties of the CE8140 are demonstrated through a no LN_2 re-supply test. The CE8140 is filled with LN_2 to the high fill set point and then, the LN_2 is removed. The temperature is then monitored using 16 sensors, monitoring how long it takes to reach two benchmark temperatures: -185ºC and -135ºC. As shown in the figure, the CE8140 was able to keep the average internal temperature below -185ºC for seven days. The tank was also able to keep the temperature below -135ºC for 21 days.



Lid Open Test Result (Model CE8140)

The lid open test is a measure of the ability of a unit to maintain temperature under an extreme lid opening event, as well as the ability to recover once the lid is re-applied. As the data shows, the CE8140 was able to maintain average temperatures for all probes at or below -150ºC over the 48 hour course of the test. Once the lid was re-applied, it took four hours for the CE8140 to reach an average temperature of -185ºC.

Maximum Capacity

Designed to maximize sample capacity with minimum footprint, CryoExtra accepts both vertical and horizontal racks. Thermo Scientific cryogenic racking solutions are designed for the vessel's storage configuration, further maximizing capacity. Our 93,000 sample capacity model has the same footprint as our 80,600 sample capacity model, saving valuable floor space.

Uniform Temperatures

Minimal top to bottom temperature variation due to vacuum insulated stainless steel vessel.

Stable Lid Open Temperature

Innovative lid and neck design ensures stable temperature even during lid openings, conserving liquid nitrogen and maintaining temperature.

Advanced Temperature Monitoring Controller

Microprocessor controller monitors temperature using thermocouples accurate to +/- 1°C. Other features: user-adjustable alarm setpoint with full alarm mute options; built-in remote alarm contacts and easy to read level indicator.

Automated Fill and Level Monitoring

Four thermistors monitor both the fill and control LN_2 levels to ensure proper levels. Self diagnostics ensure reliable sensor functioning. Monitor features: current temperature display, high temperature alarm, LN_2 level and alarms, sensor fail alarm and filling status.

Hot Gas Bypass

Keeps samples safe from warm nitrogen gas during a fill cycle, improving sample security.

Convenient Work Space

A stainless platform near the vessel opening provides a flat surface for ergonomic rack placement and speeding sample recovery. All units feature integral, folding steps and interior trap door for sub-carousel access.

Interior trap door

Thermo Scientific CryoExtra

Selection Guide

	CryoExtra 20	CryoExtra 40	CryoExtra 80	CryoExtra 94
LN_2 capacity (capacity under turntable)	463 liters (55 liters)	797 liters (133 liters)	1,745 liters (318 liters)	1,770 liters (296 liters)
Maximum System Capacity				
Vial capacity (1.2–2 mL)	19,500	40,600	80,600	93,000
Blood bag capacity (frames) 25 mL	1,528 (191)	2,632 (376)	5,376 (768)	6,144 (768)
Blood bag capacity (frames) 50 mL, Fenwal 4R9951	896 (112)	1,533 (219)	3,080 (440)	3,520 (440)
Blood bag capacity (frames) 250 mL, Fenwal 4R9953	480 (96)	900 (188)	1,860 (372)	1,860 (372)
Blood bag capacity (frames) 500 mL, Fenwal 4R9955	340 (68)	660 (132)	1,410 (282)	1,410 (282)
Blood bag capacity (frames) 500 mL, Gambro DF-200	320 (64)	468 (117)	960 (240)	1,200 (240)
Blood bag capacity (frames) 700 mL, Gambro DF-700	180 (36)	280 (70)	568 (142)	710 (142)
Rack Configuration Requirements for Maximum Capacity (Combination of Square and Mini Racks)				
Square 2 in. boxes	Holds 100 2 mL vials	Holds 100 2 mL vials	Holds 100 2 mL vials	Holds 100 2 mL vials
Racks for 100 cell boxes	12 (1950683)	26 (1950866)	60 (1950696)	60 (1950683)
Racks for 25 cell boxes	4 (1950686)	12 (1950871)	8 (1950685)	8 (1950686)
Stages per rack	15	14	13	15

Specifications (Non Medical Device)*

Model*	Model No.	Vial Capacity 1.2-2.0 mL (CryoBank)	Electrical	Plug Type	Usable Interior Height in. (cm)	Exterior Dimensions H x W x D in. (cm)	Neck Diameter in. (mm)	Inner Diameter in. (mm)	Weight (full)	Regulatory Listings	LN_2 and Utility Connection
CryoExtra 20	**CE8120**	19,500 (30,420[1])	100-230V 50/60 Hz	NEMA 5-15	34.5 (87.7)	65 x 32 x 32 (165.1 x 81.3 x 81.3)	12.5 (317)	28.2 (731)	1340 lbs/ 608 kg	cULus and CE	All models require 22 psi (1.5 bar) low pressure supply tank and are supplied with (1) 0.5 in. 45° flare stainless steel flexible transfer hose
CryoExtra 40	**CE8140**	40,600 (61,516[1])		NEMA 5-15	30.8 (78.2)	63.25 x 42 x 42 (160.7 x 106.6 x 106.6)	17.5 (445)	38.7 (983)	2140 lbs/ 971 kg		
CryoExtra 80	**CE8180**	80,600 (131,820[1])		NEMA 5-15	29.2 (74.2)	68.19 x 60 x 60 (173.3 x 152.4 x 152.4)	25 (635)	54.75 (1391)	4830 lbs/ 2191 kg		
CryoExtra 94	**CE8194**	93,000 (152,100[1])		NEMA 5-15	34.2 86.9)	73.19 x 60 x 60 (173.3 x 152.4 x 152.4)	25 (635)	54.75 (1391)	4875 lbs/ 2211 kg		

[1] Using Nunc Dense storage boxes (196-cell) and 1 mL CryoBank tubes.

Specifications (Medical Device)**

Model*	Model No.	Vial Capacity 1.2-2.0 mL (CryoBank)	Electrical	Plug Type	Usable Interior Height in. (cm)	Exterior Dimensions H x W x D in. (cm)	Neck Diameter in. (mm)	Inner Diameter in. (mm)	Weight (full)	Regulatory Listings	LN_2 and Utility Connection
CryoExtra 20 MDD	**CE8120M**	19,500 (30,420[1])	100-230V 50/60 Hz	EU	34.5 (87.7)	65 x 32 x 32 (165.1 x 81.3 x 81.3)	12.5 (317)	28.2 (731)	1340 lbs/ 608 kg	cULus, CE and MDDIIa	All models require 22 psi (1.5 bar) low pressure supply tank and are supplied with (1) 0.5 in. 45° flare stainless steel flexible transfer hose
CryoExtra 40 MDD	**CE8140M**	40,600 (61,516[1])		EU	30.8 (78.2)	63.25 x 42 x 42 (160.7 x 106.6 x 106.6)	17.5 (445)	38.7 (983)	2140 lbs/ 971 kg		
CryoExtra 80 MDD	**CE8180M**	80,600 (131,820[1])		EU	29.2 (74.2)	68.19 x 60 x 60 (173.3 x 152.4 x 152.4)	25 (635)	54.75 (1391)	4830 lbs/ 2191 kg		
CryoExtra 94 MDD	**CE8194M**	93,000 (152,100[1])		EU	34.2 (86.9)	73.19 x 60 x 60 (173.3 x 152.4 x 152.4)	25 (635)	54.75 (1391)	4875 lbs/ 2211 kg		

* Non MDD units are not available in EU.

** Class IIa medical device for diagnostic use; independent automated monitoring is recommended such as a chart recorder or electronic monitor. Not available in North America.

[1] Using Nunc Dense storage boxes (196-cell) and 1 mL CryoBank tubes.

CryoExtra Rack Selection

Model No. & Description	Dimensions H x W x D in. (cm)	Storage	CryoExtra 20	CryoExtra 40	CryoExtra 80	CryoExtra 94
Square Racks						
 **1950683** Rack includes cardboard boxes and dividers for 1.5/2 mL vials	32.5 x 5.5 x 5.63 (82.6 x 14 x 14.3)	Racks per vessel	12	N/A	N/A	60
		Boxes per rack	15	N/A	N/A	15
		Vials per box	100	N/A	N/A	100
		Vials per vessel	18,000	N/A	N/A	90,000
 **1950696** Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials	28.4 x 5.5 x 5.63 (72.1 x 14 x 14.3)	Racks per vessel	12	26	60	60
		Boxes per rack	13	13	13	13
		Vials per box	100	100	100	100
		Vials per vessel	15,600	33,800	78,000	78,000
 **4000007** Rack includes stainless steel boxes and cardboard dividers for 1.5/2 mL vials	27.4 x 5.5 x 5.63 (69.6 x 14 x 14.3)	Racks Per vessel	12	26	60	60
		Boxes per rack	13	13	13	13
		Vials per box	13	13	13	13
		Vials per vessel	15,600	33,800	78,000	78,000
 **1950866** Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials	30.6 x 5.5 x 5.63 (77.7 x 14 x 14.3)	Racks per vessel	12	26	N/A	60
		Boxes per rack	14	14	N/A	14
		Vials per box	100	100	N/A	100
		Vials per vessel	16,800	36,400	N/A	84,000
 **4000008** Rack includes cardboard boxes and cardboard dividers for 4 mL vials	25.4 x 5.5 x 5.63 (64.5 x 14 x 14.3)	Racks per vessel	12	26	60	60
		Boxes per rack	8	8	8	8
		Vials per box	100	100	100	100
		Vials per vessel	9,600	20,800	48,000	48,000
 **4000009** Rack includes stainless steel boxes and cardboard dividers for 4 mL vials	25.4 x 5.5 x 5.63 (64.5 x 14 x 14.3)	Racks per vessel	12	26	60	60
		Boxes per rack	8	8	8	8
		Vials per box	100	100	100	100
		Vials per vessel	9,600	20,800	48,000	48,000
 **4000010** Rack includes cardboard boxes and cardboard dividers for 5 mL vials	26.6 x 5.5 x 5.63 (67.6 x 14 x 14.3)	Racks per vessel	12	26	60	60
		Boxes per rack	7	7	7	7
		Vials per box	100	100	100	100
		Vials per vessel	8,400	18,200	42,000	42,000
Specialty Racks						
 **4000379** SUC-1 rack for cane storage (includes canisters #4000176)	23.9 x 5.5 x 5.63 (60.7 x 14 x 16)	Racks per vessel	12	26	60	60
		Canisters per rack	8	8	8	8
		Canes per canister	25	25	25	25
		Canes per vessel	2,400	5,200	12,000	12,000

* Each canister will hold 25 canes without cryo sleeves or 16 canes with cryosleeves

Boxes and Dividers

Model No.	Description
Boxes	
4000014	Cardboard box with 100-cell divider for use with 1.5/2 mL vials (does have drain hole)
4000015	Cardboard box with 100-cell divider for use with 4/5 mL vials (does have drain hole)
820010	Polycarbonate box with 100-cell divider for use with 1.5/2 mL vials with internal threaded caps (does have drain hole)
820011	Polycarbonate box with 81-cell divider for use with 1.5/2 mL vials (does have drain hole)
820013	Polycarbonate box with 81-cell divider for use with 4 mL vials (does have drain hole)
4000238	Stainless steel box for 1.5/2 mL vials (does not include 100-cell divider)
4000239	Stainless steel box for 4 mL vials (does not include 100-cell divider)
Cell Dividers	
4000013	100-cell divider for use in the 4000014, 4000015, 4000238, and 4000239 boxes

CryoExtra Rack Selection

Model No. & Description	Dimensions H x W x D in. (cm)	Storage	CryoExtra 20	CryoExtra 40	CryoExtra 80	CryoExtra 94
Vertical Racks						
 **4000012** Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials	27.6 x 2.3 x 5.7 (70.1 x 5.8 x 14.5)	Racks per vessel	36	70	156	156
		Boxes per rack	5	5	5	5
		Vials per box	100	100	100	100
		Vials per vessel	18,000	35,000	78,000	78,000
 **1950694** Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials	32.8 x 2.3 x 5.7 (83.3 x 5.8 x 14.5)	Racks per vessel	36	N/A	N/A	156
		Boxes per rack	6	N/A	N/A	6
		Vials per box	100	N/A	N/A	100
		Vials per vessel	21,600	N/A	N/A	93,600