ThermoFisher SCIENTIFIC



Ultra-low temperature freezers

TSX Core Series ULT freezers

Engineered for reliability, designed for everyday use

thermo scientific

Sample protection—our shared priority

When choosing an ultra-low temperature (ULT) freezer, protecting your valuable samples is the top priority. Thermo Scientific™ TSX™ Core Series ULT freezers are designed with this in mind, offering reliable sample protection even in the busiest lab environments.

With uniform temperatures maintained throughout the cabinet—even with frequent door openings—your samples stay in optimal conditions. Powered by our Variable Drive (V-Drive) compressor technology and built for everyday lab use, the TSX Core Series helps delivers dependable performance and a streamlined user experience.

At its core, the TSX platform is built for reliability, safeguarding not only your samples but the years or decades of research they represent. With trusted temperature stability and protection, the TSX Core Series lets you focus on what truly matters, providing peace of mind that your research is safe.



Reliability at its core

Long-term reliability testing protocol

We recognize the critical role that a dependable ULT freezer plays in helping safeguard your samples and ensuring the longevity of your research. That's why we have implemented a long-term reliability testing protocol across our entire TSX Series ULT platform. This rigorous testing involves continuous evaluation of our models in both field and laboratory environments, simulating real-world usage across various applications.

Every unit is tested and documented

All TSX Core Series ULT freezers undergo a thorough end-of-line testing process to ensure they meet our stringent quality standards. The results are documented in a factory acceptance test report and accompanied by a certificate of calibration, both of which are shipped with each unit.

Exceptional warranty coverage

Thanks to the extensive long-term reliability testing we conduct, we proudly stand behind our products, offering a comprehensive warranty that reflects our dedication to quality and peace of mind.



Long-term reliability testing types

1. Core system reliability testing: Includes compressor, electronics, cabinet, and sealed system evaluations:

- High usage test
- 20 parameter test procedure
- Vibration testing

2. Multi-ambient condition testing: Includes temperature testing across various conditions:

- Tested at 15°C, 20°C, and 32°C
- Minimum 16 open air probes
- Peak variation, stability, and uniformity
- Door open recovery

End-of-line testing

3. End-of-line testing: Includes compressor, electronics, cabinet, and sealed system evaluations:

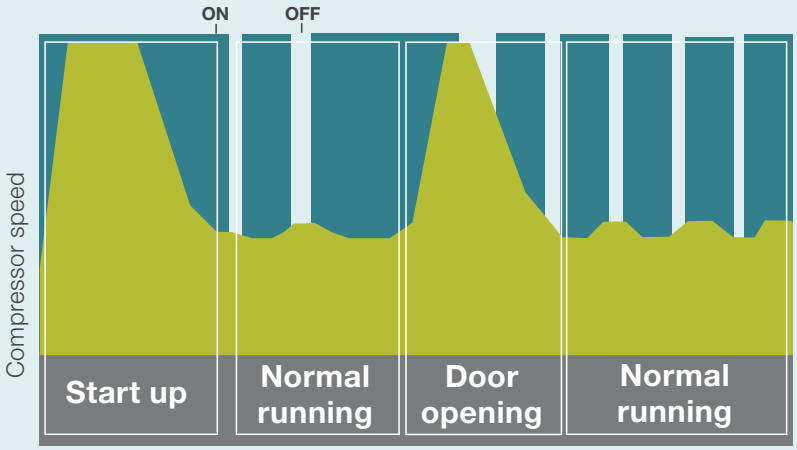
- Temperature pull down
- Monitoring compressor cycling
- Defrost temperatures
- Warm-up time
- Bottom-out temperature

*Restrictions and exclusions apply. Warranty is void if the unit is not maintained as set forth in the operation.

Built to perform, designed to protect

Performance powered by our V-Drive technology

At the heart of our TSX Series ULT freezers is our innovative V-Drive cooling technology. It enhances performance by helping ensure precise temperature control and stability, even in demanding lab environments. By minimizing temperature fluctuations and optimizing energy efficiency, demonstrated in Figure 1, the V-Drive technology not only protects your valuable samples but also supports consistent, reliable operation that meets the rigorous demands of modern laboratories.



- **Standard compressors cycle ON and OFF:** As shown in blue (ON) and white (OFF), standard compressors toggle between full power and idle, which may cause energy surges, temperature fluctuations, and increased wear
- **V-Drive utilizes variable speed operation:** Unlike standard compressors that operate in a binary full-power or nothing mode, the V-Drive (demonstrated in green) adjusts its speed variably to achieve optimal cooling capacity while maximizing energy efficiency

Figure 1: V-Drive variable speed vs. standard compressors.

Table 1: TSX Core Series ULT freezers performance data across all capacity sizes.

	TSX40086CA-ULTS	TSX50086CA-ULTS	TSX60086CA-ULTS	TSX70086CA-ULTS
Peak variation (-80°C setpoint)	-3.0/+4.0	-3.0/+2.0	-3.0/+1.5	-3.0/+1.0
Average uniformity	5.0	5.0	4.0	4
Average stability	<2.0	<0.5	<0.5	<0.5
1-minute open door* (20°C ambient running @ -75°C) minutes	21	21	20	21
Pull down (20°C to -75°C) minutes (hours)	301 (5.0)	303 (5.1)	356 (5.9)	315 (5.3)
Energy consumption -80°C setpoint kWh/day	8.5	6.9	7.70	8.5
dBA	44	44	44	44

*1-minute open door test conducted on empty cabinet. Exterior door and all inner door simultaneously opened during test.

Essential features for everyday use



User-friendly interface and simplified updates
Easy operation with self-serve updates, helping minimize downtime

Universal voltage (100-230 V, 50/60 Hz)
Compatible with global power standards for easy installation anywhere

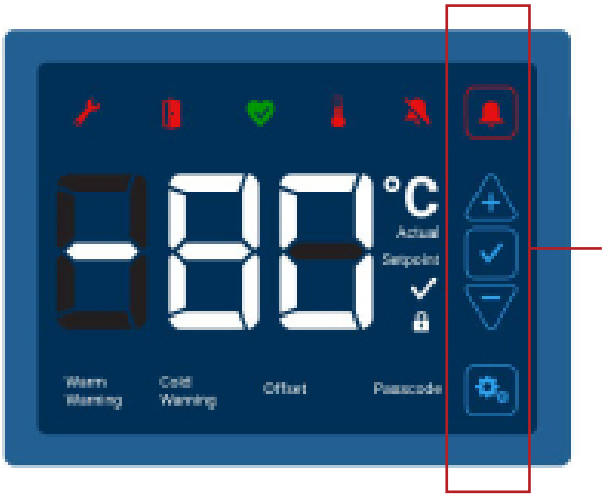
USB and interface for data transfer
Enables easy data logging, remote monitoring, and compliance

Shipped with certificates and documents*
Facilitates import, incoming inspection, and qualification needs

Whisper-quiet operation
Operates at under 44 decibels, acting as your quiet lab partner

User-friendly interface
The TSX Core ULT freezer features an intuitive control panel with 5.6 inch capacitive touch button display for quick adjustments and settings management. Key controls include:

- **Temperature warnings**: set warm and cold warning help ensure safe temperature ranges
- **Calibration offset:** adjust cabinet temperature with a simple offset value
- **Passcode protection:** secure access with a customizable 3-digit code
- **User-friendly system health indicators:** illuminated icons offer clear and quick status update



Five touch-point buttons for quicker management

*Shipped documents include: Certificate of conformance, CE declaration of conformance, certification of calibration, QC test log sheets, and QC temperature graphs.

Service and support

When you invest in Thermo Scientific™ ULT freezers, you not only benefit from top-quality product performance, but you can also enjoy peace of mind and maximum uptime with world-class service solutions provided by Unity™ Lab Services, part of Thermo Fisher Scientific.

Your specific needs and expectations for a ULT freezer deserve a tailored approach to services. Our comprehensive service portfolio was designed to provide you with an ideal fit.

Start-up services

Starting up is the first and most important step after your equipment is assembled at its final location. Our very own certified field services network can provide peace of mind as you get started with your new equipment.

Service plans

Our service plans are designed to help improve your productivity, increase uptime, maintain peak performance, and reduce your total cost of ownership. All service plan customers enjoy proactive, annual preventive maintenance visits, unlimited, enhanced technical and digital remote support, and priority on-site response commitments.

Compliance services

Our comprehensive and cost-effective suite of qualification, temperature mapping, and calibration services can increase your lab's performance and save you time by documenting system functionality and mitigating the risk of regulatory noncompliance.

To learn more, scan the QR code to download the ULT freezers service and support flyer, where you will find appropriate service-related ordering information.

Alternatively, visit the Unity Lab Services page:
thermofisher.com/unitylabservices



Ordering information

Ordering information: Thermo Scientific TSX Core Series ULT freezers (–86°C to –50°C)

Model No.	Capacity cu. ft. (liters)	Rack capacity (2 inch boxes)	Electrical	Plug	Shelves	Door style	Interior dimensions W x D x H in (cm)	Exterior dimensions** W x D x H in (cm)
TSX40086CA-ULTS*	19.3 (547)	16 (400)	100-230 V 50/60 Hz	Country-specific (see table for options)	4 shelves (3 adjustable)	Outer (1) Inner (2)	23.1 x 28.3 x 51.2 in. (58.8 x 71.9 x 130.1)	28.3 x 37.0 x 78 in. (71.9 x 93.9 x 198.1)
TSX50086CA-ULTS*	24.1 (682)	20 (500)					28.8 x 28.3 x 51.2 in. 73.0 x 71.9 x 130.1)	34.0 x 37.0 x 78 in. (86.4 x 93.9 x 198.1***)
TSX60086CA-ULTS*	28.8 (815)	24 (600)					34.4 x 28.3 x 51.2 in. (87.3 x 71.9 x 130.1)	39.6 x 37.0 x 78 in. (100.6 x 93.9 x 198.1***)
TSX70076CA-ULTS*	33.6 (950)	28 (700)					40.1 x 28.3 x 51.2 in. (101.9 x 71.9 x 130.1)	45.2 x 37.0 x 78 in. (114.8 x 93.9 x 198.1***)

*Alternate Country of Origin models available that include US EPA ENERGY STAR® certification. Please contact your representative for more details.
**Allowance for handle and hinge, add 4.2 in (10.7 cm) to cabinet width.
***Doorway width clearance is 34.5 in (87.6 cm) for TSX50086, TSX60086, and TSX70086.

Options and accessories (field installation must be completed by a qualified professional)

Options	Factory installation	Field installation
Stainless steel freezer interior	SS34567-ULTS***	N/A
Free-standing chart 115V 60 Hz 230V 60 Hz 230V 50 Hz	N/A	6383-6A 6383-6D 6383-6V

Size dependent options	Installation	TSX40086CA-ULTS	TSX50086CA-ULTS	TSX60086CA-ULTS	TSX60086CA-ULTS
Thermo Scientific™ Revco™ five inner door configuration	Factory	5INNERDOOR-ULTS	5INNERDOOR-ULTS	5INNERDOOR-ULTS	5D400-ULTS
Shelf kit: Includes one shelf and shelf support clips	Field	SK400TSX	SK500TSX	SK600TSX	SK700TSX

Power cords****	Factory installation	Field installation
Argentina 230 V /16A	AR230V16A	AR230V16ACS
Australia 230 V/ 16A	AU230V16A	AU230V16ACS
Brazil 230 V/ 16A	BR230V16A	BR230V16ACS
China 230 V/ 16A	CH230V16A	CH230V16ACS
Continental EU 230 V/ 16A	EU230V16A	EU230V16ACS
Denmark 230 V/ 16A	DK230V16A	DK230V16ACS
India 230 V/ 16A	IN230V16A	IN230V16ACS
Israel 230 V/ 16A	IS230V16A	IS230V16ACS
Italy 230 V/ 16A	IT230V16A	IT230V16ACS
Switzerland 230 V/ 16A	SW230V16A	SW230V16ACS
United Kingdom 230 V/ 13A	UK230V13A	UK230V13ACS
US Plug (default); NEMA 5-15	US125V15A	US125V15ACS
US Plug; NEMA 5–20	US125V20A	US125V20ACS
US Plug; NEMA 6–15	US230V15A	US230V15ACS
US Twist Lock 115 V/ 60 Hz	US125V20ATL	TL125V20A
US Twist Lock 208–230 V/ 60 Hz	US230V15ATL	TL230V15A

Accessories (optional)	Cat. No.
Replacement back-up battery	400159
Cryo gloves, medium	4425
Cryo gloves, large	4426

Size dependent options	TSX40086CA	TSX50086CA	TSX60086CA	TSX70086CA
Seismic restraint kit	TF-ULT400	TF-ULT500	TF-ULT600	TF-ULT700
Replacement air filter	AF34567LE	AF34567LE	AF34567LE	AF34567LE

Racks for boxes and microplates

Racks for 2" (5.08 cm) boxes				Model No.			
Cat. No.	Description	Dimensions W x D x H in. (cm)	Storage	TSX40086CA	TSX50086CA	TSX60086CA	TSX70086CA
920090 	Sliding drawer rack	5.5 x 26.9 x 11.9 (14 x 68.3 x 30.2)	Boxes per rack	25	25	25	25
			Racks per shelf	4	5	6	7
			Racks per freezer	16	20	24	28
			Boxes per freezer	400	500	600	700
1950520 	Adjustable side access rack	5.4 x 26.75 x 11.6 (13.7 x 67.9 x 29.5)	Boxes per rack	25	25	25	25
			Racks per shelf	4	5	6	7
			Racks per freezer	16	20	24	28
			Boxes per freezer	400	500	600	700

Racks for 3" (7.62 cm) boxes				Model No.			
Cat. No.	Description	Dimensions W x D x H in. (cm)	Storage	TSX40086CA	TSX50086CA	TSX60086CA	TSX70086CA
920091	Sliding drawer rack	5.5 x 26.9 x 11.9 (14 x 68.3 x 30.2)	Boxes per rack	15	15	15	15
			Racks per shelf	4	5	6	7
			Racks per freezer	16	20	24	28
			Boxes per freezer	240	300	360	420

Racking shelf kits		Model No.			
Description	Storage	TSX40086CA	TSX50086CA	TSX60086CA	TSX70086CA
Sliding drawer racks and 2” boxes with 100 count cell dividers (fits one shelf)	Cat. No.	RSK400SD4	RSK500SD4	RSK600SD4	RSK700SD4
	Racks included	4	5	6	7
	Boxes included	100	125	150	175

Racks for microplates				Model No.			
Cat No.	Description	Dimensions H x W x D in. (cm)	Storage	TSX40086CA	TSX50086CA	TSX60086CA	TSX70086CA
1950592	Side access rack with locking rod for standard or deepwell	5.5 x 25.7 x 11.9 (14 x 65.3 x 30.2)	Plates per rack	147	147	147	147
			Racks per shelf	4	5	6	7
			Racks per freezer	16	20	24	28
			Plates per freezer	2,352	2,940	3,528	4,116

Scan the QR code to check out the accessories catalog.

Learn more at **thermofisher.com/tsxcore**

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