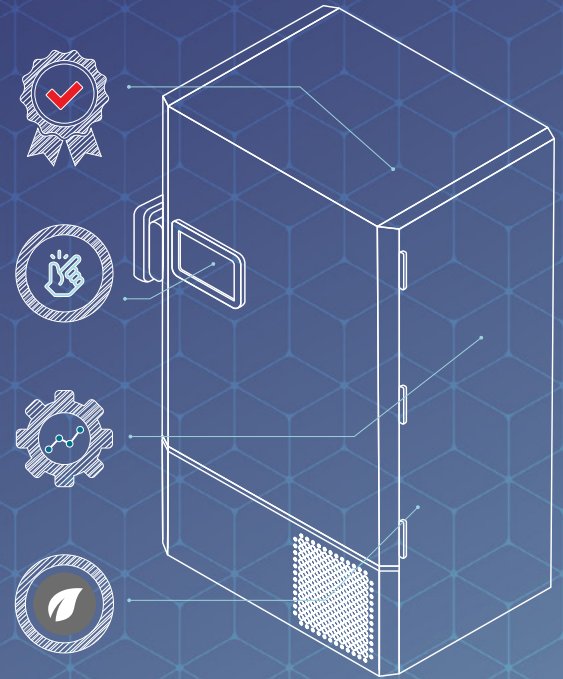


**DESIGNED**  
with your science in mind



Medical device ULT freezers

# Thermo Scientific TSX Universal Series ULT freezers

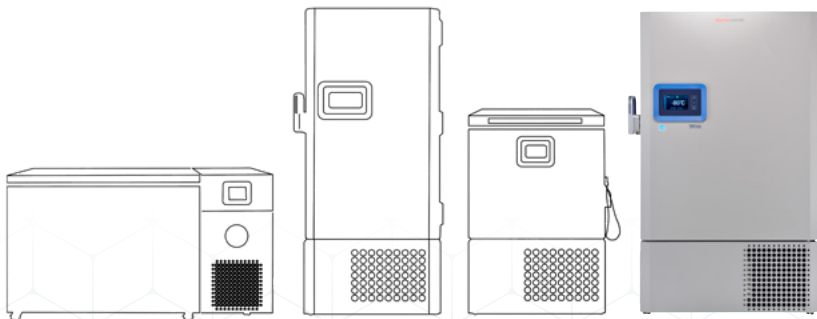
The next generation of our most  
trusted ULT platform

# Designed with your science in mind

For over 80 years, Thermo Fisher Scientific has been designing ultra-low temperature (ULT) freezers with your science in mind. Prioritizing sample security and reliability, we recognize the importance of your work, which goes beyond the realm of science and touches the lives of those who benefit from your breakthroughs.

We continue to invest in advancing our products' technological capabilities with the labs of the future in mind. Our in-house expertise is combined to help improve user experiences and enable high performance for excellent sample protection, future-proof technology with connectivity enablement, more sustainable production, and more efficient operation, supported by global services to help keep your work running.

We focus on designing from the bottom up to help advance your research.



## +80 years of innovation

### 1940

Thermo Fisher Scientific began innovating cold storage lab equipment with the introduction of the Revco™ ULT freezer.

### 2015

The Thermo Scientific™ TSX™ Series ULT freezers with V-Drive cooling technology with natural refrigerants and insulation was launched.

### 2019

Updates to the TSX Series ULT platform included implementation of our immersive user touch screen interface, connectivity platform, and performance enhancements.

### 2021

TSX Series ULT freezers were upgraded to include new sample safety features and participation in the My Green Lab ACT label to help provide transparency around the environmental impact of our ULTs.

## 2024

### Thermo Scientific™ TSX™ Universal Series ULT Freezers

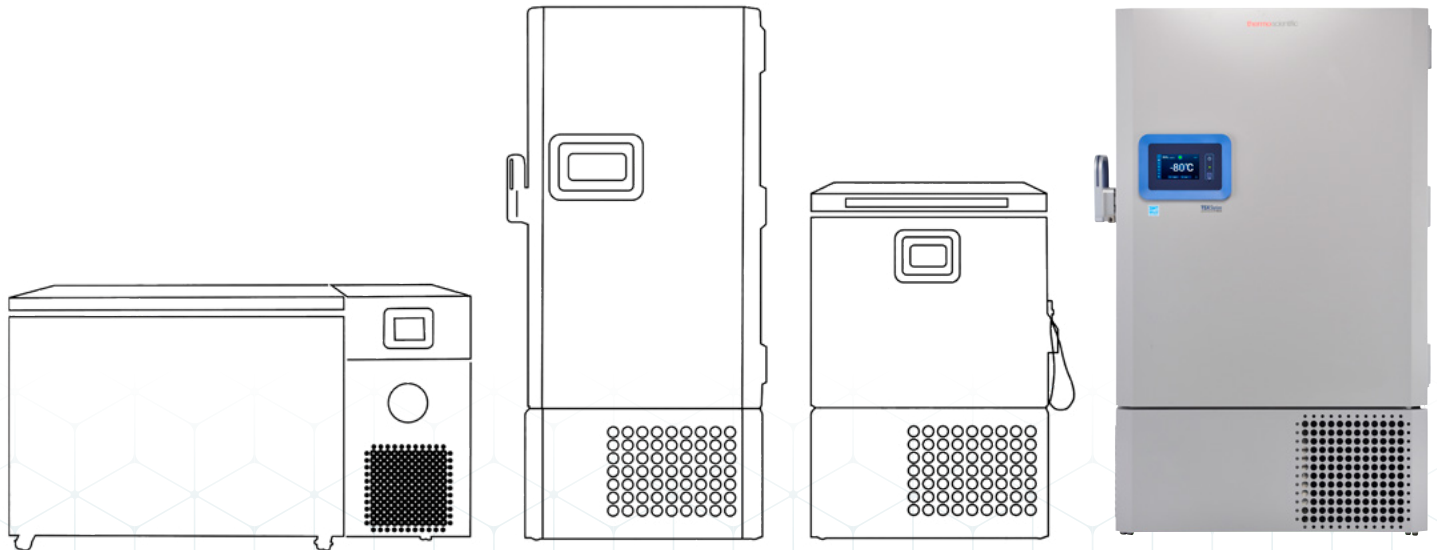
The next generation of the TSX Series ULT platform has launched.

# TSX Universal Series ULT freezers

## The next generation of our most trusted ULT platform

The new TSX Universal Series ULT freezers herald a new era in performance with Universal V-Drive technology, delivering tighter control and faster recovery times. Coupled with an expanded setpoint range, universal voltage, whisper-quiet operation, simplified software updates and much more, TSX Universal seamlessly adapts to your workflow. Advancing sustainability, they are ENERGY STAR® certified with a 33% efficiency improvement, ACT labeled, and produced in our Zero-Waste to Landfill certified facility in Asheville, North Carolina.

TSX Universal ULT: the pinnacle of reliability, sustainability, and innovation.



# Confidence in quality and reliability



We understand the pivotal role reliable and high-quality lab equipment plays in your research endeavors, that's why our ULT freezers are carefully engineered to meet the exacting demands of modern research environments.

TSX Universal Series ULTs represent our most robust design to date, incorporating insights from over 80 years of experience to enhance every aspect of the system. From sealed system and cabinet construction to software architecture and electrical components, each element of the TSX Universal ULT platform has undergone significant testing and improvements.

**Long-term reliability testing:** We have implemented a new long-term reliability testing protocol for our TSX Universal ULT freezers platform. This protocol involves rigorous and continuous testing of our ULTs in field and laboratory environments to simulate real world usage across application types.

**Every unit tested and documented:** 100% of TSX Universal ULT units undergo a comprehensive end-of-line testing process to ensure they meet our rigorous quality standards. We document the results in a factory acceptance test report and a certificate of calibration, which are provided with every unit produced.

**Industry-leading warranty:** We confidently stand behind our products, and we take pride in offering an industry-leading warranty, which sets us apart from any other ULT supplier in the market.

## Designed for reliability- Compressor, electronics, cabinet, and sealed system

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

## Tested for reliability- Multi-ambient testing

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

## Tested to help ensure quality- 100% end of line test

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



## 20-point

Reliability test, 16+ probe location performance test, and 100% end of life test.



## +5400

Combined days of continuous reliability testing in the field and laboratory environments.



## 12 years

Compressor parts and 5-year parts and labour warranty\*.

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

# Universally better performance



Our ULT freezers are more than just a product - they are a testament to our commitment to meeting and exceeding our customers' expectations. Through extensive research and development, we have created the next-generation TSX Universal ULTs that set a new standard for performance, across all metrics.

**Enhancements to our V-Drive cooling technology:** By updating our variable speed compressors, enhancing our intelligent algorithms, and optimizing hardware with our new Universal V-Drive cooling technology, users can now benefit from universally better performance than the previous generation TSX Series ULT platform - demonstrated in Table A.

**Adaptable across workflows:** Thanks to our new and innovative Universal V-Drive technology, users will experience tighter performance with faster pull-down and recovery times. From high-use academic labs to longer-term storage facilities, you can now enjoy the convenience of using the same unit throughout your diverse workflows, streamlining processes and enhancing overall manageability.

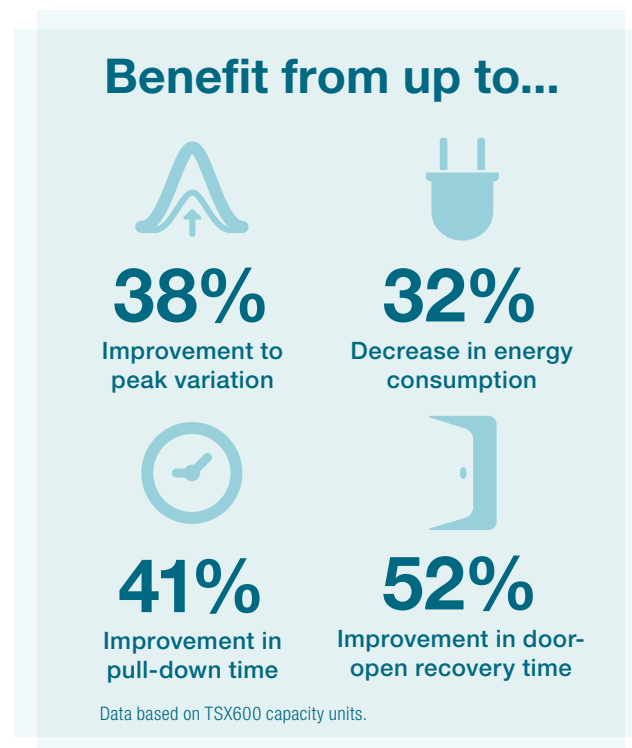


Table A: TSX Universal ULTs have universally better performance when compared to the previous generation TSX Series ULT platform.

	TSX70086LA	TSX70086A	TSX60086LA	TSX60086A	TSX50086LA	TSX50086A	TSX40086LA	TSX40086A
Model	Universal	Standard	Universal	Standard	Universal	Standard	Universal	Standard
Peak variation (-80°C setpoint)	3.5	5.8	3.4	5.5	3.3	6.9	4	6.8
Uniformity	3.3	3.9	3.2	3.4	3.1	4	3.7	4.5
Stability	0.2	1.5	0.2	1.9	0.2	2.6	0.2	2.1
1-minute open door (20° C ambient running @ -75°C minutes)	19	29	15	31	15	24	11	21
Pull down (20° C to -80° C) minutes (hours)	307 (5)	576 (10)	287 (5)	486 (8)	250 (4)	438 (7)	229 (4)	390 (7)
ENERGY STAR power consumption kW-hr/day/ft <sup>3</sup> (m <sup>3</sup> )	0.24 (8.13)	0.36 (12.1)	0.27 (7.75)	0.4 (11.5)	0.31 (7.54)	0.45 (10.8)	0.36 (7.03)	0.49 (9.5)
dBA	43.6	48.6	43.6	49.4	43.6	50	43.6	49.8

1) Data is representative of performance and not published product specifications. Technical data sheet test results should not be referenced in developing any regulatory parameters for specific customer usage.

2) Freezer performance will vary based on customer product volume, storage format, operating conditions, test methodology and performing recommended maintenance.



We leverage the power of innovation to positively contribute to a healthier world, which includes reducing the environmental impact of our products and packaging—from design to end of life. By incorporating environmental sustainability principles into each design step, we can better understand and reduce the environmental impact of our products early in the design process, helping to ultimately deliver on our commitment to achieve net-zero emissions by 2050 while helping customers advance their sustainability goals.

**Greener by design:** In 2022, we elevated our Design for Sustainability (DfS) approach, positioning our R&D organization to expand, accelerate, and standardize how environmental considerations are embedded into product development. Our strategy focuses on five key impact areas: less hazardous, less waste, more energy efficient, responsibly packaged, and extended life. (Demonstrated in Figure 1)



**ENERGY STAR–certified:** Built with an unwavering commitment to sustainability, the next-generation TSX Universal ULTs are ENERGY STAR certified, with our largest size using 43% less energy than the allowed amount.

**Transparency in sustainability:** We believe it should be easy to make informed purchasing decisions when looking for more sustainable products. By participating in the ACT label program, run by the non-profit organization My Green Lab, we can provide easy-to-use information about our ULTs’ environmental impact.



**33%**  
Improvement in energy efficiency over previous generation TSX Series ULT.

**100%**  
All TSX Universal ULTs beat today’s ENERGY STAR criteria by wide margins and positioned to meet tightening requirements in the future.

**100%**  
All TSX Universal Series ULTs are My Green Lab ACT labeled.

Figure 1: TSX Universal Series ULT freezers – Greener by design approach



**Less hazardous**

We use natural refrigerants and insulation with extremely low GWP & ODP levels, far lower than current regulatory requirements.



**Less waste**

Asheville, NC, is a Zero-Waste to Landfill site and our lab freezers are manufactured with 60-70% recycled steel.



**More energy efficient**

All ULTs are ENERGY STAR certified, providing substantial energy savings.



**Responsibly packaged**

We use locally sourced and 100% by-weight recycled corrugate packaging and manufacture regionally to reduce transport emissions.




**Extended life**


Our ULTs offer a 12-year industry-leading warranty, helping minimize the production, shipping, and disposal of units each year.


# Pioneering user-centric design





Expanding on the already versatile TSX series' feature suite, the TSX Universal ULT platform is designed for laboratories looking to enhance their capabilities and redefine user experience. With its improved user interface, reduced rapid re-entry times, expanded set points, improved noise output, and introduction of universal voltages, this platform is designed to help take your laboratory to the next level.


 **Universal voltage:** Operates on 100-230V, 50/60Hz, streamlining procurement and qualification strategies from early R&D to global clinical trials.

 **Setpoint expansion:** Users can now enjoy an expanded setpoint range of up to -40°C, a first for the TSX Series ULT platform.

 **Simplified updates:** Our onboard software streamlines startup and integration, making it easier to access and install the latest updates for continuous access to new features.

 **Faster re-entry:** Improved pressure relief port (PEP) enables re-entry in just 30 seconds, 57% faster than previous TSX ULTs, helping ensure uninterrupted freezer access.

 **Whisper-quiet:** Operating at under 44 decibels, the TSX Universal ULT can be placed anywhere, singly or in multiples, without causing sound pollution.

 **Certificate and documents:** TSX Universal ULTs come shipped with documentation\* for GMP or qualification environments, helping facilitate import, incoming inspection, and qualification needs.

**Medical device Class II 510(K) Exempt now available\*\*:** For the first time, our TSX Series platform will now offer medical device units, to store and preserve blood and blood products at freezing temperatures.

TSX Universal ULTs offer a variety of options that can be customized to your application needs.

## Versatile & durable storage

- 4 sizes
  - 2 inner doors / (5 door option)
  - Adjustable shelves
  - High density footprint
  - Stainless steel shelves
  - Extra large capacity
  - 7 zone gasket design
  - Vacuum insulation panels
  - Cold rolled steel cabinet
  - Onboard diagnostics
- Optional:
- 100s of rack options
  - Stainless steel interiors

## Compliance & security

- Class II medical device\*\*
  - UL 61010, CE, ISO 13485
  - ISO 5.5 Cleanroom<sup>†</sup>
  - Factory acceptance reports
  - Calibration certificates
  - Event & temperature logs
  - Settings security
  - Back-up battery
- Optional:
- IQ/OQ documents
  - Electronic locks
  - LN<sub>2</sub> & CO<sub>2</sub> back-up systems
  - Status lights

## Ergonomics & convenience

- Customizable display
- Eye level, high contrast large text display
- Automatic pressure relief
- Frost management system
- Multiple access ports
- Easy roll casters
- Easy to clean surfaces
- Full 7" capacitive touch screen

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

\*\* Registered as a medical device in the US only. Verification of medical devices in the U.S. can be found on: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfr/rl.cfm>

<sup>†</sup> Test according to ISO 14644-14 and designated as ISO Class 5.5; operational; 0.1 µm, 0.2 µm, 0.3 µm, 0.5 µm, 1.0 µm

# Ordering information

## TSX Universal Series ULT freezers (-86°C to -40°C) - ordering information

Model number	Capacity cu. ft. (liters)	Rack capacity (2 inch boxes)	Electrical	Plug	Shelves	Door style	Interior dimensions H x W x D in (cm)	Exterior dimensions H x W x D in (cm)
TSX40086LA	19.4 (549)	16 (400)	100-230V 50/60 Hz	Country-specific (see table for options)	4 shelves (3 Adjustable)	Outer (1) Inner (2)	28.3 x 23.1 x 51.2 in. (71.9 x 58.8 x 130.1)	37.6 x 28.3 x 78 in. (95.5 x 71.9 x 198.1)
TSX50086LA	24.1 (682)	20 (500)					28.3 x 28.8 x 51.2 in. (71.9 x 73.0 x 130.1)	37.6 x 34.0 x 78 in. (95.5 x 86.4 x 198.1)
TSX60086LA	28.8 (816)	24 (600)					28.3 x 34.4 x 51.2 in. (71.9 x 87.3 x 130.1)	37.6 x 39.6 x 78 in. (95.5 x 100.6 x 198.1)
TSX70086LA	33.5 (949)	28 (700)					28.3 x 40.1 x 51.2 in. (71.9 x 101.9 x 130.1)	37.6 x 45.2 x 78 in. (95.5 x 114.8 x 198.1)

Power cords	Factory installation	Field installation
Standard US Plug; NEMA 5-20	US125V20A	US125V20ACS
Standard US Plug; NEMA 6-15	US230V15A	US230V15ACS
United States Twist Lock 115V/60Hz	US125V20ATL	TL125V20A
United States Twist Lock 208-230V/60Hz	US230V15ATL	TL230V15A



### Service and support

Unity Lab Services provides comprehensive service solutions to support your ULTs— everything from start-up to maintenance and repair to stay compliant. Keep focused on what matters. We've got your back.

Learn more: [thermofisher.com/unitylabservices](https://thermofisher.com/unitylabservices)

### Start-up services

Service	Region	Cat. No.
Start-up	US and Europe	STARTULT

### Service plans

Service plans	Factory warranty period	Post-warranty period	
Region	Total Care warranty	Tech Direct service plan	Total Care service plan
US	TCSWULT	TDSPULT	TCSPULT
Europe	TCWTYULT	TEDULT	TLCULT

### Compliance services

Service	Region	Specification	Model coverage	Cat. No.
IQ/OQ + TM	US and Europe	TSX ULTs	TSX-series (post 2018), Advanced 89000-series, HLE, RLE, TLE	IOPQPCKE89003810
IQ/OQ	US and Europe	TSX ULTs	TSX-series (post 2018), Advanced 89000-series, HLE, RLE, TLE	IQQPCKE89003810

Service	Region	Accreditation	Cat. No.
Calibration	US	ISO/IEC 17025	CALPRCOLD
Calibration	US	ISO 9001	CALBCCOLD



## TSX Universal Series ULT freezers

# DESIGNED

with your science in mind



Reliability assured



User-centric design



Enhanced performance



Greener by design



Learn more at [thermofisher.com/TSXUniversal](https://thermofisher.com/TSXUniversal)

thermo scientific

The Ultra Low Temperature (ULT) Freezers TSX Series (Model/s with 'L', for example TSX40086LA) are intended for long term storage and preservation of blood and blood products at temperatures between -40°C to -86°C. The ULT Freezers are intended to be used by trained personnel in a professional laboratory environment. © 2024 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified. MY GREEN LAB® and ACT are registered and unregistered trademarks of My Green Lab, Corp., a California 501c3 non-profit corporation. ENERGY STAR is a trademark of the US Environmental Protection Agency. EXT6499 324