

Thermo Scientific TSX Series High-Performance Refrigerators and Freezers

A better environment
inside and out



Thermo Scientific™
TSX 50 cu ft
Refrigerator



Thermo Scientific™
TSX 23 cu ft
Freezer



Thermo Scientific™
TSX 23 cu ft
Pharmacy
Refrigerator



Thermo Scientific™
TSX 23 cu ft
Manual Defrost
Freezer

Lab and clinical-grade storage that adapts to you and your environment



Temperature variation can have an impact on the viability and efficacy of vaccines, medication, reagents and other temperature-sensitive materials. These variations can shorten product shelf life, degrade enzymes and reduce vaccine effectiveness. Therefore, it is important to choose a high-performance refrigerator or freezer that has been designed for the demanding standards of the laboratory and clinical environment.

The sustainable, SNAP compliant choice

Thermo Scientific™ TSX Series high-performance refrigerators and freezers are designed with features that support sample protection, sustainability objectives and the U.S. Environmental Protection Agency's Significant New Alternatives Policy (SNAP).* Our variable speed compressor technology (V-Drive) is designed to provide temperature uniformity that continually adapts to the lab or clinical environment, offering significant energy savings without compromising protection.

Whisper quiet operation

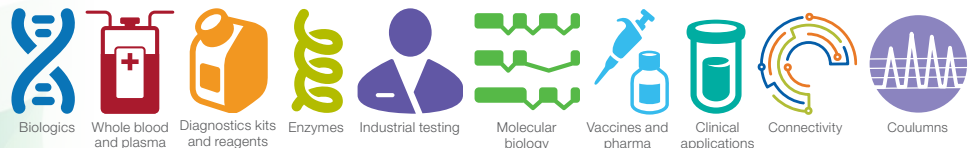
Compared to conventional refrigerant, high-performance models†, the TSX Series offers a whisper quiet operation, so you can bring the refrigerator or freezer out of the hallway and back into your lab without disrupting your audio environment.

ENERGY STAR® certified

While conventional refrigerant, high-performance refrigerators and freezers can run at very high kWh/day in energy usage, the TSX Series by comparison has been designed to reduce energy usage without compromising performance. All TSX Series products are EPA ENERGY STAR® certified.

Application-specific models

Our laboratory refrigerators feature your choice of glass or solid door with adjustable shelves. Freezers come in a choice of auto defrost -30°C or manual defrost -20°C setpoint. For blood banking applications, our plasma freezers are FDA Class I and our blood bank refrigerators are FDA Class II. Our pharmacy refrigerators feature convenient, adjustable basket drawers. And for enzyme storage, our -20°C freezers feature enzyme bins for convenient storage.



† Based on published sound specifications, data on file. October, 2016.

The drive for sample integrity and energy savings

The performance and energy savings of the new TSX Series are driven by our unique **V-drive technology**.

- While conventional, high-performance refrigerators and freezers use single speed compressors that continually cycle on and off, the TSX Series V-drive runs at variable speeds to adjust cooling performance to the conditions inside and outside of the refrigerator or freezer.
- When combined with the automated tuning control, this variable speed drive optimizes the compressors running speed to the current conditions.
- When there are frequent door openings, or samples are added to the refrigerator or freezer, the control system detects the activity and increases the drive speed to bring temperatures back to the set point quickly. This innovative technology is one of the reasons the TSX Series delivers outstanding door opening recovery (DOR) speed, and more peace of mind for busy laboratories.
- When conditions are stable, such as when the unit is running overnight or on weekends, the drive runs at a low speed, reducing energy consumption while maintaining a stable temperature for your samples.

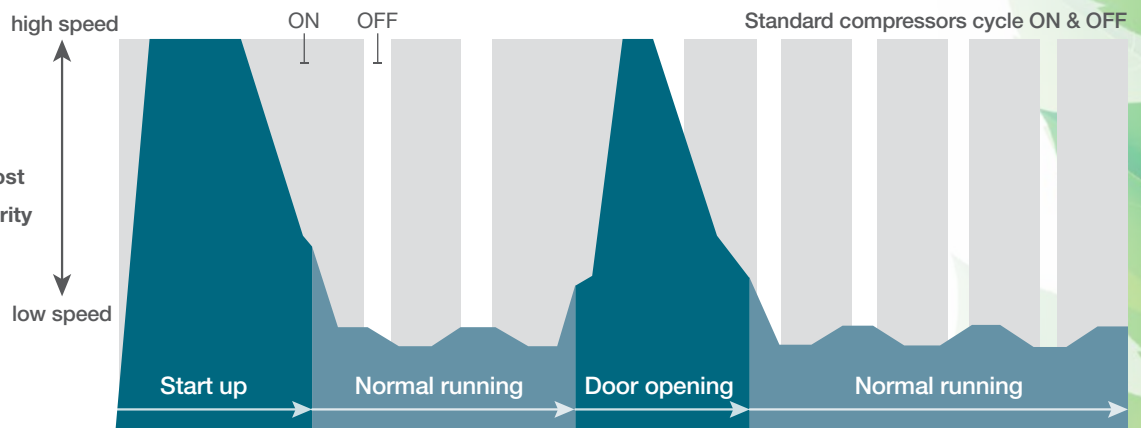
V-drive

Low energy → **Low operating cost**

Adaptive control → **Sample security**

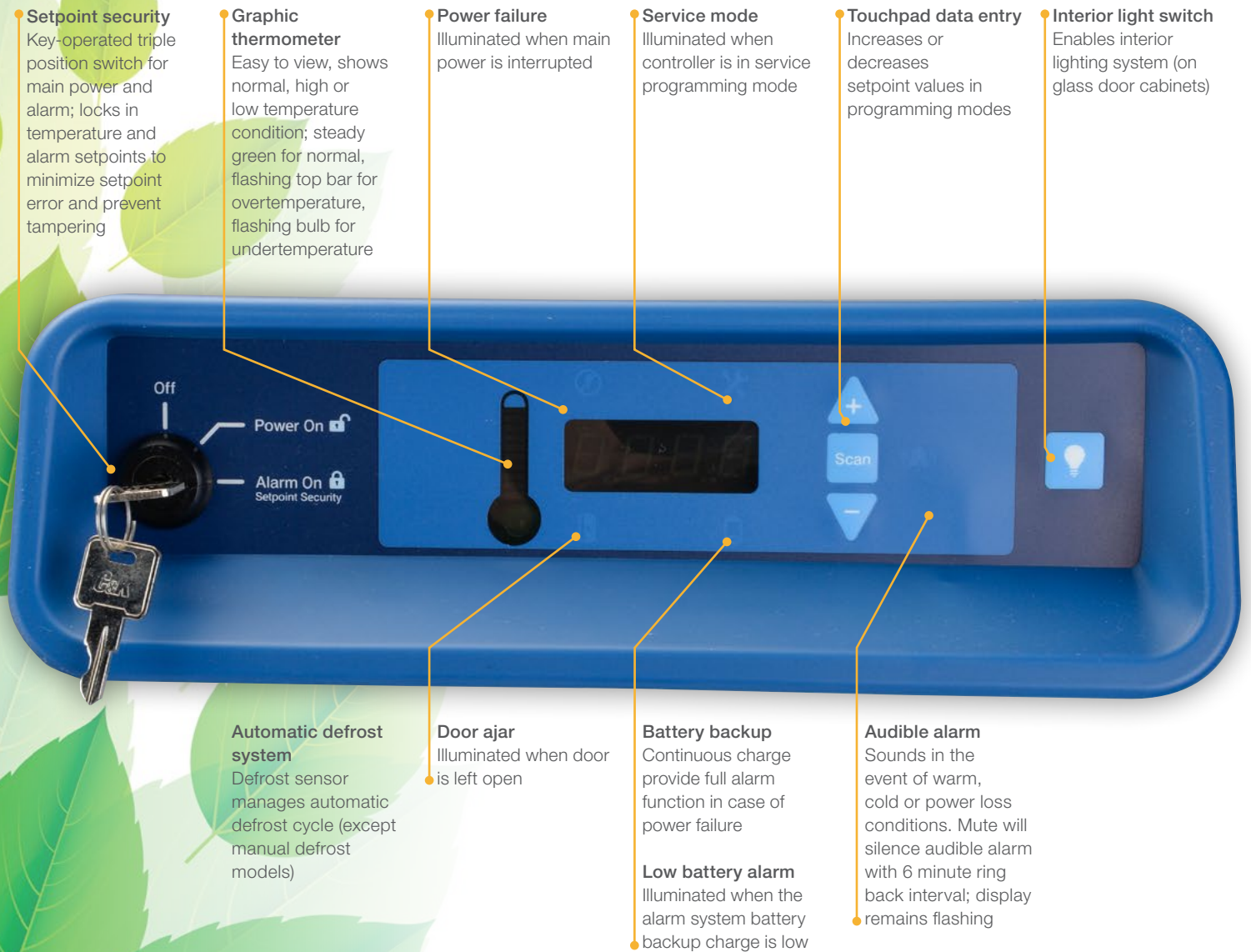
Adaptive control

Adapting to your refrigerator or freezer usage patterns, the TSX V-drive increases compressor speed to quickly restore temperature after door openings.



Variable speed compressors (V-Drive) change speed. As shown in the above graphic, the TSX V-drive, unlike standard compressors that cycle on and off, adjusts to factors such as start-up and door openings, when a higher compressor speed is needed. During normal running time when the door is closed, the V-drive runs at a lower speed to maintain your setpoint.

Easy-to-access controls with setpoint security



DLH ready for connectivity



TSX models, except blood bank refrigerators and plasma freezers, are compatible with Thermo Scientific™ DeviceLink™ HUB enabling you to have a connected experience with your unit so you know always—and anywhere—the safety of your samples and the performance of your refrigerator or freezer. The units are also compatible with Thermo Scientific™ SMART VUE® wireless monitoring systems.

A sound environment for critical samples

You know that the constant noise created by compressors can compromise communications and create a less than ideal working environment. The new TSX Series is **up to 10X quieter than our previous generation of refrigerators and freezers.*** Our V-drive technology, combined with superior insulation, limits the sound output of the TSX Series to just **52 dB**, approximately the sound generated by a conventional refrigerator.**

Decibel scale of common sounds. Examples of noise levels in decibels

Noise source	Decibel level
Freeway traffic 15M, vacuum cleaner	70
Conversation in restaurant, office, background music	60
TSX Series	52
Library	40
Quiet rural area	30
Rustling leaves	20
Breathing	10

* Thermo Scientific TSX2304GA compared to Thermo Scientific high-performance 2304A model (non TSX).

** Data on file. October, 2016.



up to
10X
quieter

Designed for ergonomic usage

In addition to the significant reduction in sound, the TSX Series features an ergonomically designed door handle featuring soft touch grip and the microprocessor controller is angled to help prevent neck strain.



TSX Series High-Performance BioMedical Glass Door Refrigerators



Our high-performance glass door refrigerators combine advanced temperature control with high-quality cabinet construction and alarm systems. Positive, forced-air circulation is designed to maintain temperature uniformity to protect important medical and pharmaceutical-products as well as laboratory media, reagents and more.

- Heat-free defrost for maximum temperature uniformity
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Bright, LED interior lighting
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories



Thermo Scientific™
TSX 23 cu ft
refrigerator

TSX Series high-performance glass door lab refrigerators

Model no.	Temp. range (setpoint)	Capacity cu. ft. (liters)	Electrical (plug)	Doors	Shelves	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX1205GA	3–7°C (5°C)	11.5 (326)	115V, 60Hz (NEMA 5-15)	1 glass	4	auto	UL, cUL	21.8 x 20.0 x 52.4 (55.4 x 50.8 x 133.1)	30.5 x 24.0 x 73.0 (77.5 x 61.9 x 185.4)	339 (154)
TSX1205GD			208–230V, 60Hz (NEMA 6-15)							
TSX2305GA	3–7°C (5°C)	23 (650)	115V, 60Hz (NEMA 5-15)	1 glass	4	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.8 x 28.0 x 78.5 (96.0 x 71.1 x 199.4)	450 (204)
TSX2305GD			208–230V, 50/60Hz (NEMA 6-15)							
TSX3005GA	3–7°C (5°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 glass	4	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.3 x 34.0 x 78.5 (94.7 x 86.4 x 199.4)	458 (208)
TSX3005GD			208–230V, 60Hz (NEMA 6-15)							
TSX4505GA	3–7°C (5°C)	45.8 (1297)	115V, 60Hz (NEMA 5-15)	Double Sliding Glass	8	auto	UL, cUL	26.0 x 52.5 x 58.0 (66 x 133.4 x 147.3)	36.6 x 56.5 x 78.5 (93.1 x 143.5 x 199.4)	611 (277)
TSX4505GD			208–230V, 60Hz (NEMA 6-15)							
TSX5005GA	3–7°C (5°C)	51.1 (1447)	115V, 60Hz (NEMA 5-15)	2 Glass	8	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.4 x 133.4 x 147.3)	37.8 x 56.5 x 78.5 (96.0 x 143.5 x 199.4)	669 (303)
TSX5005GD			208–230V, 60Hz (NEMA 6-15)							

TSX Series High-Performance BioMedical Solid Door Lab Refrigerators



Our high-performance solid door refrigerators combine advanced temperature control with high-quality cabinet construction and alarm systems. Positive, forced-air circulation is designed to maintain temperature uniformity to protect important medical and pharmaceutical-products as well as laboratory media, reagents and more.

- Heat-free defrost for maximum temperature uniformity
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Bright, LED interior lighting
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories



Thermo Scientific™
TSX 50 cu ft
refrigerator

TSX Series high-performance solid door lab refrigerators

Model no.	Temp. range (setpoint)	Capacity cu. ft. (liters)	Electrical (plug)	Doors	Shelves	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX1205SA	3–7°C (5°C)	11.5 (326)	115V, 60Hz (NEMA 5-15)	1 solid	4	auto	UL, cUL	21.8 x 20.0 x 52.4 (55.4 x 50.8 x 133.1)	31.1 x 24.0 x 73.0 (71.1 x 61.9 x 185.4)	340 (154)
TSX1205SD			208-230V, 60Hz (NEMA 6-15)							340 (154)
TSX2305SA	3–7°C (5°C)	23 (650)	115V, 60Hz (NEMA 5-15)	1 solid	4	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.9 x 28.0 x 78.5 (96.2 x 71.1 x 199.4)	426 (193)
TSX2305SD			208-230V, 50/60Hz (NEMA 6-15)							405 (184)
TSX3005SA	3–7°C (5°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 solid	4	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.9 x 34.0 x 78.5 (96.2 x 86.4 x 199.4)	459 (208)
TSX3005SD			208-230V, 60Hz (NEMA 6-15)							459 (208)
TSX5005SA	3–7°C (5°C)	51.1 (1447)	115V, 60Hz (NEMA 5-15)	2 solid	8	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.4 x 133.4 x 147.3)	37.9 x 56.5 x 78.5 (96.2 x 143.5 x 199.4)	621 (282)
TSX5005SD			208-230V, 60Hz (NEMA 6-15)							621 (282)

TSX Series High Performance Chromatography Refrigerators



Our TSX high-performance chromatography refrigerators are designed for a variety of applications requiring close temperature control, full access to chromatography instrumentation, and easy set-up of instrumentation and apparatus within the chamber. The TSX Chromatography series features industry-leading safety features to ensure maximum protection.

- Heat-free defrost for maximum temperature uniformity
- Two 2" (5 cm) side wall access ports with insulated hinged covers
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Bright, LED interior lighting
- Self-closing door with 90° stop to assist with inventory loads
- Safety switch protected internal electrical outlet on all models (Duplex outlet on A and D models, single outlet on V models)
- See pages 14–21 for options and accessories



Thermo Scientific™
TSX 30 cu ft
chromatography refrigerator

TSX Series high-performance chromatography refrigerators

Model no.	Temp. range (setpoint)	Capacity cu. ft. (liters)	Electrical (plug)	Doors	Shelves	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX2305CA	3–7°C (5°C)	23 (650)	115V, 60Hz (NEMA 5-15)	1 glass	0 Full 2 Half	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.8 x 28.0 x 78.5 (96.0 x 71.1 x 199.4)	439 (199)
TSX2305CD			208-230V, 50/60Hz (NEMA 6-15)							
TSX3005CA	3–7°C (5°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 glass	0 Full 2 Half	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.3 x 34.0 x 78.5 (94.7 x 86.4 x 199.4)	442 (201)
TSX3005CD			208-230V, 60Hz (NEMA 6-15)							
TSX4505CA	3–7°C (5°C)	45.8 (1297)	115V, 60Hz (NEMA 5-15)	Double Sliding Glass	4 Full 2 Half	auto	UL, cUL	26.0 x 52.5 x 58.0 (66.0 x 133.4 x 147.3)	36.6 x 56.5 x 78.5 (93.1 x 143.5 x 199.4)	600 (272)
TSX4505CD			208-230V, 60Hz (NEMA 6-15)							
TSX5005CA	3–7°C (5°C)	51.1 (1447)	115V, 60Hz (NEMA 5-15)	2 glass	4 Full 2 Half	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.4 x 133.4 x 147.3)	37.8 x 56.5 x 78.5 (96.0 x 143.5 x 199.4)	658 (298)
TSX5005CD			208-230V, 60Hz (NEMA 6-15)							

TSX Series High-Performance Blood Bank Refrigerators



Our high-performance blood bank refrigerators are designed to meet strict requirements established by the AABB for the storage of whole blood and blood components.

- Factory pre-set to 4°C to meet blood storage guidelines
- Heat-free defrost for maximum temperature uniformity
- Convenient, stainless steel, fully extendable and adjustable drawers
- Standard, built-in chart recorder
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Bright, LED interior lighting
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories
- FDA listed Class II Medical Device, 510K exempt



Thermo Scientific™
TSX 23 cu ft
blood bank refrigerator

TSX Series high-performance blood bank refrigerators

Model no.	Temp. range (setpoint)	Capacity cu. ft. / liters (blood bags*)	Electrical (plug)	Doors	Drawers	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX1204BA	3–7°C (4°C)	11.5 / 326 (192)	115V, 60Hz (NEMA 5-15)	1 glass	6	auto	UL, cUL	21.8 x 20.0 x 52.4 (55.4 x 50.8 x 133.1)	30.5 x 24.0 x 73.0 (77.5 x 61.9 x 185.4)	404 (183)
TSX1204BD			208-230V, 60Hz (NEMA 6-15)							404 (183)
TSX2304BA	3–7°C (4°C)	23 / 650 (385)	115V, 60Hz (NEMA 5-15)	1 glass	7	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.8 x 28.0 x 78.5 (96.0 x 71.1 x 199.4)	550 (249)
TSX2304BD			208-230V, 60Hz (NEMA 6-15)							529 (240)
TSX3004BA	3–7°C (4°C)	29.2 / 827 (426)	115V, 60Hz (NEMA 5-15)	1 glass	6	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.3 x 34.0 x 78.5 (94.7 x 86.4 x 199.4)	554 (251)
TSX3004BD			208-230V, 60Hz (NEMA 6-15)							554 (251)
TSX5004BA	3–7°C (4°C)	51.1 / 1447 (770)	115V, 60Hz (NEMA 5-15)	2 glass	14	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.4 x 133.4 x 147.3)	37.8 x 56.5 x 78.5 (96.0 x 143.5 x 199.4)	865 (392)
TSX5004BD			208-230V, 60Hz (NEMA 6-15)							865 (392)

*450 mL whole blood bags

TSX Series High-Performance Pharmacy Refrigerators



Our high-performance pharmacy refrigerators feature adjustable basket drawers and glass doors for the easy identification and access of vaccines, pharmaceuticals, chemotherapeutics and other material requiring 2 to 8°C storage.

- Heat-free defrost for maximum temperature uniformity
- Convenient, fully extendable and adjustable basket drawers
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Bright, LED interior lighting
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories



Thermo Scientific™
TSX 23 cu ft
pharmacy refrigerator

TSX Series high-performance pharmacy refrigerators

Model no.	Temp. range (setpoint)	Capacity cu. ft. (liters)	Electrical (plug)	Doors	Basket Drawers	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX1205PA	3–7°C (5°C)	11.5 (326)	115V, 60Hz (NEMA 5-15)	1 glass	5	auto	UL, cUL	21.8 x 20.0 x 52.4 (55.4 x 50.8 x 133.1)	30.5 x 24.0 x 73.0 (77.5 x 61.9 x 185.4)	388 (176)
TSX1205PD			208-230V, 60Hz (NEMA 6-15)							388 (176)
TSX2305PA	3–7°C (5°C)	23 (650)	115V, 60Hz (NEMA 5-15)	1 glass	6	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.8 x 28.0 x 78.5 (96.0 x 71.1 x 199.4)	531 (241)
TSX2305PD			208-230V, 60Hz (NEMA 6-15)							510 (231)
TSX3005PA	3–7°C (5°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 glass	6	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.3 x 34.0 x 78.5 (94.7 x 86.4 x 199.4)	541 (245)
TSX3005PD			208-230V, 60Hz (NEMA 6-15)							541 (245)
TSX5005PA	3–7°C (5°C)	51.1 (1447)	115V, 60Hz (NEMA 5-15)	2 glass	12	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.4 x 133.4 x 147.3)	37.8 x 56.5 x 78.5 (96.0 x 143.5 x 199.4)	830 (376)
TSX5005PD			208-230V, 60Hz (NEMA 6-15)							830 (376)

TSX Series High-Performance Auto Defrost –30°C Freezers



Our high-performance laboratory freezers are designed for applications requiring storage of reagents, pharmaceuticals, biological and other commonly used laboratory materials such as primers, siRNA molecules and fetal bovine serum (FBS).

- Forced-air circulation for temperature uniformity and fast temperature recovery
- Non-invasive defrost with time and temperature guided cycle
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories



Thermo Scientific™
TSX 50 cu ft
freezer



Thermo Scientific™
TSX 12 cu ft
freezer

TSX Series high-performance auto defrost –30°C freezers

Model no.	Temp. range (setpoint)	Capacity cu. ft. (liters)	Electrical (plug)	Doors	Shelves	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX1230FA	-35° to -15°C (-30°C)	11.5 (326)	115V, 60Hz (NEMA 5-15)	1 solid	4	auto	UL, cUL	21.8 x 20.0 x 52.4 (55.4 x 50.8 x 133.1)	31.1 x 24.0 x 73.0 (79.0 x 61.9 x 185.4)	335 (152)
TSX1230FD			208-230V, 60Hz (NEMA 6-15)							335 (152)
TSX2330FA	-35° to -15°C (-30°C)	23.3 (659)	115V, 60Hz (NEMA 5-15)	1 solid	4	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.9 x 28.0 x 78.5 (96.2 x 71.1 x 199.4)	423 (192)
TSX2330FD			208-230V, 60Hz (NEMA 6-15)							402 (182)
TSX3030FA	-35° to -15°C (-30°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 solid	4	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.9 x 34.0 x 78.5 (96.2 x 86.4 x 199.4)	439 (199)
TSX3030FD			208-230V, 60Hz (NEMA 6-15)							439 (199)
TSX5030FA	-35° to -15°C (-30°C)	51.1 (1447)	115V, 60Hz (NEMA 5-15)	2 solid	8	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.3 x 133.4 x 147.3)	37.9 x 56.5 x 78.5 (96.2 x 143.5 x 199.4)	621 (282)
TSX5030FD			208-230V, 60Hz (NEMA 6-15)							621 (282)

TSX Series High-Performance Manual Defrost -20°C Freezers



Our manual defrost, high-performance freezers are designed for applications in which even slight intermittent coil warming during auto defrost cannot be tolerated.

- Cold wall convection cooling with temperature uniformity
- Enzyme freezers feature enzyme bins
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Four 2" casters for easy mobility; the front two are lockable
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories



Thermo Scientific™
TSX 23 cu ft
freezer

TSX Series high-performance manual defrost -20°C freezers

Model no.	Temp. range (setpoint)	Capacity cu. ft. (liters)	Electrical (plug)	Doors	Shelves (bins)	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX2320FA	-25°C to -15°C (-20°C)	23.3 (659)	115V, 60Hz (NEMA 5-15)	1 solid	4 (0)	Manual	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	38.9 x 28.0 x 78.5 (99.0 x 71.1 x 199.4)	459 (208)
TSX2320FD	-25°C to -15°C (-20°C)	23.3 (659)	208-230V, 60Hz (NEMA 6-15)	1 solid	4 (0)	Manual	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	38.9 x 28.0 x 78.5 (99.0 x 71.1 x 199.4)	438 (199)
TSX3020FA	-25°C to -15°C (-20°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 solid	4 (0)	Manual	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	38.9 x 34.0 x 78.5 (99.0 x 86.4 x 199.4)	483 (219)
TSX3020FD	-25°C to -15°C (-20°C)	29.2 (827)	208-230V, 60Hz (NEMA 6-15)	1 solid	4 (0)	Manual	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	38.9 x 34.0 x 78.5 (99.0 x 86.4 x 199.4)	483 (219)

TSX Series high-performance manual defrost -20°C enzyme freezers

TSX2320EA	-25°C to -15°C (-20°C)	23.3 (659)	115V, 60Hz (NEMA 5-15)	1 solid	9 (45)	Manual	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	38.9 x 28.0 x 78.5 (99.0 x 71.1 x 199.4)	514 (233)
TSX2320ED	-25°C to -15°C (-20°C)	23.3 (659)	208-230V, 60Hz (NEMA 6-15)	1 solid	9 (45)	Manual	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	38.9 x 28.0 x 78.5 (99.0 x 71.1 x 199.4)	493 (224)
TSX3020EA	-25°C to -15°C (-20°C)	29.2 (827)	115V, 60Hz (NEMA 5-15)	1 solid	9 (54)	Manual	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	38.9 x 34.0 x 78.5 (99.0 x 86.4 x 199.4)	552 (251)
TSX3020ED	-25°C to -15°C (-20°C)	29.2 (827)	208-230V, 60Hz (NEMA 6-15)	1 solid	9 (54)	Manual	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	38.9 x 34.0 x 78.5 (99.0 x 86.4 x 199.4)	552 (251)

TSX Series High-Performance -30°C Plasma Freezers



Whole blood
and plasma



Our pre-set, high-performance -30°C plasma freezers with automatic defrost are designed to meet strict requirements established by the AABB for the storage of plasma.

- Forced-air circulation for temperature uniformity and fast temperature recovery
- Convenient, stainless steel, fully extendable and adjustable drawers
- GMP Clean Room Class A / ISO 6 (ISO EN 14644-1) compatible with appropriate pre-install preparation
- Standard, built-in chart recorder
- Four 2" casters for easy mobility; the front two are lockable
- Self-closing door with 90° stop to assist with inventory loads
- See pages 14–21 for options and accessories
- FDA listed Class I Medical Device, 510K exempt



Thermo Scientific™
TSX 23 cu ft
plasma freezer

TSX Series high-performance -30°C plasma freezer

Model no.	Temp. range (setpoint)	Capacity cu. ft. / liters (plasma boxes*)	Electrical (plug)	Doors	Drawers	Defrost	Certification	Interior dimensions D x W x H in. (cm)	Exterior dimensions D x W x H in. (cm)	Shipping weight lbs. (kg)
TSX1230LA	-35°C to -15°C (-30°C)	11.5 / 326 (273)	115V, 60Hz (NEMA 5-15)	1 solid	7	auto	UL, cUL	21.8 x 20.0 x 52.4 (55.4 x 50.8 x 133.1)	31.1 x 24.0 x 73.0 (79.0 x 61.9 x 185.4)	412 (187)
TSX1230LD			208-230V, 60Hz (NEMA 6-15)				UL, cUL			412 (187)
TSX2330LA	-35°C to -15°C (-30°C)	23.3 / 659 (532)	115V, 60Hz (NEMA 5-15)	1 solid	7	auto	UL, cUL	28.5 x 24.0 x 58.0 (72.3 x 61.0 x 147.3)	37.9 x 28.0 x 78.5 (96.2 x 71.1 x 199.4)	526 (239)
TSX2330LD			208-230V, 60Hz (NEMA 6-15)				UL, cUL			505 (229)
TSX3030LA	-35°C to -15°C (-30°C)	29.2 / 827 (665)	115V, 60Hz (NEMA 5-15)	1 solid	7	auto	UL, cUL	28.5 x 30.0 x 58.0 (72.3 x 76.2 x 147.3)	37.9 x 34.0 x 78.5 (96.2 x 86.4 x 199.4)	556 (252)
TSX3030LD			208-230V, 60Hz (NEMA 6-15)				UL, cUL			556 (252)
TSX5030LA	-35°C to -15°C (-30°C)	51.1 / 1447 (1064)	115V, 60Hz (NEMA 5-15)	2 solid	14	auto	UL, cUL	28.5 x 52.5 x 58.0 (72.4 x 133.4 x 147.3)	37.9 x 56.5 x 78.5 (96.2 x 143.5 x 199.4)	817 (371)
TSX5030LD			208-230V, 60Hz (NEMA 6-15)				UL, cUL			817 (371)

*250 mL plasma boxes

Options and Accessories

Productive use of our TSX Series refrigerators and freezers can be enhanced with options and accessories specifically designed to improve utility and convenience. Many options are factory-installed and must be specified with your refrigerator and freezer order. Customer-installed options may require the services of a factory authorized technician. The ordering chart on pages 16-19 will inform you which options are factory- or customer-installed.

Before ordering...

Serial number tags on all of our TSX Series refrigerators and freezers provide model numbers and voltage information needed for accurate selection of options ordered for field installation. You can also refer to the refrigerator and freezer ordering charts in this brochure for model numbers and voltage information. It is recommended that options be ordered when your refrigerator or freezer is ordered. Factory-installed options eliminate down-time during product installation.

Adjustable alarm delay modules

The adjustable alarm delay is designed to eliminate nuisance alarms due to intermittent or transitory conditions such as lightning or brief power outages. The adjustable delay requires an alarm condition to exist continuously for a pre-determined time (adjustable) before a signal is released to a central alarm/monitoring system or telephone dialer.

- Adjustable delay from 0.5 to 32 minutes
- Red alarm indicator light remains flashing after transient condition is corrected; requires manual reset
- Signals chronic alarm conditions that may indicate impending component failure; allows time for inspection or corrective maintenance
- Inserts variable time interval between detection of alarm condition and transmission of signal
- Includes accurate digital timing circuit adjustable from 0.5, 1, 2, 4, 8, 18 or 32 minutes
- Operates independent of the line power; built-in battery uses customer supplied 9V battery

Remote alarm modules

Free-standing remote alarm modules tie-in to the standard remote alarm terminals on the refrigerators and freezers.

4–20 milliamp (MA) transmitters

4–20 milliamp transmitters offer a point-to-point circuit to transmit signals from refrigerator and freezer sensors to a controller, sending an analog signal from 4 to 20 milliamps.

Temperature chart recorders

Standard on blood bank refrigerators and plasma freezers but optional on other models. Chart recorders are 6" (15.2 cm), seven-day and use pressure-sensitive chart paper. One box of 50 charts is included with order.

Door swing options

All single door TSX refrigerators and freezers are right-hand swing but factory-installed, left hand swing doors are available. Door swing direction cannot be changed on double door TSX refrigerators and freezers.

Surge suppressors

Designed to prevent issues related to voltage surges.

Seismic restraint kits

Provides additional stability for regions prone to earthquakes.

e-lock adapter kits

E-locks provide access control with audit-trail capabilities, as well as temperature monitoring. These kits require no electricity and are available in both factory- and customer-installed options for CompX™, Pyxis®, Omnicell® and McKesson™ locks.

Specialty electrical plugs

For countries where NEMA 5-15, 6-15 and Continental EU plugs are not standard, specialty plug options are available. See page 19 for these country-specific plugs.

Options (Refrigerators)

Options for High-Performance Refrigerators Ordering Guide

For use with refrigerator size →	11.5 cu. ft. (325 L)	23 cu. ft. (650 L)	29.2 cu. ft. (826 L)	45.8 cu. ft. (1297 L)	51.1 cu. ft. (1447 L)
Door options (factory-installed)					
Left hand swing, solid door	6995	6997	6999		
Left hand swing, glass door	6996	6998	7000		
Right hand swing, glass door	7066	7012	7013		
Left and right hand swinging doors, solid					7019
Left and right hand swinging doors, glass					7014
6" 7-day inkless chart recorders, -40°C to +25°C					
Free-standing, customer-installed, 115V, 60Hz models			6383-7A		
Free-standing, customer-installed, 208-230V, 60Hz models			6383-7D		
Free-standing, customer-installed, 230V, 50Hz models (EU)			6383-7V		
Free-standing, customer-installed, 230V, 50Hz models (UK)			6383-7W		
Factory-installed (all voltages)			6183-7		
Replacement chart paper, box of 50			6184		
Surge suppressor (customer-installed)					
115V, 60Hz models			6402-1		
208-230V, 60Hz models			6402-2		
230V, 50Hz models			6402-3		
Remote alarm modules (customer-installed)					
115V, 60Hz models			5612-1A		
208-230V, 60Hz models			5612-2D		
230V, 50Hz models			5612-3V		
Alarm delay modules					
Battery operated			6903		
Digital temperature monitors					
Single input channel, temperature range -100° to +25°C, set point resolution of 1°C, high temperature alarm only, numeric LCD display, red visual alarm, 8 ft. Teflon® lead wire, Velcro® mounting strap, 5"L x 2"D x 4.5"W (mm,130 x 50 x 110), 120v, 60hz, with a 15amp dual prong plug (fits NEMA 5-15R)			6898		

	For use with refrigerator size →	11.5 cu. ft. (325 L)	23 cu. ft. (650 L)	29.2 cu. ft. (826 L)	45.8 cu. ft. (1297 L)	51.1 cu. ft. (1447 L)
Deluxe electronic remote alarm						
Requires a dedicated, analog phone line						6224TA
4-20 milliamp transmitters						
Self-powered, factory-installed						7204
Non-powered, factory-installed						6907-1
Non-powered, customer-installed						6907-2
e-Lock adapter kits (does not include locks; single door models only)						
CompX adapter, factory-installed			CXELAF			
CompX adapter, customer-installed			CXELAC			
Pyxis glass door adapter, factory-installed			PXELAGF			
Pyxis glass door adapter, customer-installed			PXELAGC			
Pyxis solid door adapter, factory-installed			PXELASF			
Pyxis solid door adapter, customer-installed			PXELASC			
Omnicell glass door adapter, factory-installed			OMELAGF			
Omnicell glass door adapter, customer-installed			OMELAGC			
Omnicell solid door adapter, factory-installed			OMELASF			
Omnicell solid door adapter, customer-installed			OMELASC			
McKesson glass door adapter, factory-installed			MKELAGF			
McKesson glass door adapter, customer-installed			MKELAGC			
McKesson solid door adapter, factory-installed			MKELASF			
McKesson solid door adapter, customer-installed			MKELASC			
Stainless steel interior (factory-installed)						
Stainless steel interior finish		6199-3D	6115	6709	6711	6116

Options (Freezers)

Options for High-Performance Freezers Ordering Guide

	For use with refrigerator size →	11.5 cu. ft. (326 L)	23.3 cu. ft. (659 L)	29.2 cu. ft. (826 L)	51.1 cu. ft. (1447 L)
Door options (factory-installed)		Model No.	Model No.	Model No.	Model No.
Left hand swing, solid door		6995	6997	6999	
6" 7-day inkless chart recorders, -40°C to +25°C					
Factory-installed (all voltages)			6183-7		
Free-standing, customer-installed, 115V, 60Hz models			6383-7A		
Free-standing, customer-installed, 208-230V, 60Hz models			6383-7D		
Free-standing, customer-installed, 230V, 50Hz models (EU)			6383-7V		
Free-standing, customer-installed, 230V, 50Hz models (UK)			6383-7W		
Replacement chart paper, box of 50			6184		
Surge suppressor (customer-installed)					
115V, 60Hz models			6402-1		
208-230V, 60Hz models			6402-2		
230V, 50Hz models			6402-3		
Remote alarm modules (customer-installed)					
115V, 60Hz models			5612-1A		
208-230V, 60Hz models			5612-2D		
230V, 50Hz models			5612-3V		
Alarm delay modules					
Battery operated			6903		
Digital temperature monitors					
Single input channel, temperature range -100° to +25°C, set point resolution of 1°C, high temperature alarm only, numeric LCD display, red visual alarm, 8 ft. Teflon® lead wire, Velcro® mounting strap, 5"L x 2"D x 4.5"W (mm,130 x 50 x 110), 120v, 60hz, with a 15amp dual prong plug (fits NEMA 5-15R)			6898		
Deluxe electronic remote alarm					
Requires a dedicated, analog phone line			6224TA		
4-20 milliamp transmitters					
Self-powered, factory-installed			7205TA		
Non-powered, factory-installed			4706		
e-Lock adapter kits (does not include locks; single door models only)					
CompX adapter, factory-installed			CXELAF		
CompX adapter, customer-installed			CXELAC		
Pyxis solid door adapter, factory-installed			PXELASF		
Pyxis solid door adapter, customer-installed			PXELASC		
Omnicell solid door adapter, factory-installed			OMELASF		
Omnicell solid door adapter, customer-installed			OMELASC		
McKesson solid door adapter, factory-installed			MKELASF		
McKesson solid door adapter, customer-installed			MKELASC		
Stainless steel interior (factory-installed)					
Stainless steel interior finish (Not available on -20°C models)		6199-3D	6115	6709	6116

Accessories

Accessories for High-Performance Refrigerators and Freezers Ordering Guide

For use with refrigerator size →	11.5 cu. ft. (326 L)	23.3 cu. ft. (659 L)	29.2 cu. ft. (826 L)	45.8 cu. ft. (1297 L)	51.1 cu. ft. (1447 L)
Shelves	Model No.	Model No.	Model No.	Model No.	Model No.
Epoxy-coated, full size shelf	7125	6696	6695	6696	
Epoxy-coated, half size shelf		6698	6697	6698	
Stainless steel, full size shelf	6696-3	6696-1	6695-1	6696-1	6696-1
Roll-out drawers					
Complete set - Cat. No. (Qty)	7445 (5)	6699 (6)	6704 (6)		6700 (12)
(Single drawers)	7122	6702	6725		6702
Drawer dividers for roll-out , stainless steel drawers					
4-place divider, order one divider per drawer	7027 (4)	6206 (4)	6963 (5)		6206 (4)
3" casters (note: all models ship standard with 2")					
Set of four, 3" (76mm) casters			6041-1		
Additional wire basket drawers					
Single drawer, for pharmacy refrigerators	WB12	WB23/50	WB30		WB23/50
Chromatography Refrigerator shelf supports					
Stainless Steel full			CSSFULL		
Stainless Steel half			CSSHALF		
Painted full			CSPFULL		
Painted half			CSPHALF		
Enzyme bins					
Sold as each, labels not included		6736			
Thermo Scientific Lab Cooler Module					
Holds twenty-four 1.5mL tubes and eight 0.5mL tubes		6744			
Seismic restraint kits					
Basic		TFR210			
For OSHPD	TF-LRF12	TF-LRF23	TF-LRF30	TF-LRF50	TF-LRF50

Specialty Plugs for Refrigerators and Freezers

Specialty plugs (factory-installed) for all Models	Model No.	
Specialty Plug	Argentina	430381H01
Specialty Plug	Australia (10 Amp)	326741H01
Specialty Plug	Australia (15 Amp)	430268H01
Specialty Plug	Brazil	430383H01
Specialty Plug	China	316705H01
Specialty Plug	Denmark	430380H01
Specialty Plug	Great Britain	316704H01

Specialty plugs (factory-installed) for all Models	Model No.	
Specialty Plug	India	430271H01
Specialty Plug	Israel	430273H01
Specialty Plug	Italy	430272H01
Specialty Plug	Switzerland	430382H01
Specialty Plug	Twist Lock Plug NEMA L5-20P	327197H02
Specialty Plug	Twist lock plug NEMA L6-15P	327197H01

Services

Our TSX Series high-performance refrigerators and freezers are designed to meet UL and CE criteria for safety and performance. All connections must comply with local electrical codes.

- Selection charts for each standard model list voltage, rated amperage, recommended circuit breaker size, and NEMA (National Electrical Manufacturers' Association, USA) electrical plug information
- Most refrigerators and freezers are supplied with line cord plugs, which require corresponding receptacles
- Site preparation requires availability of the proper receptacle; a dedicated circuit is required
- Special voltage selections may be available at extra cost and must be specified when ordering
- For questions regarding site preparation, installation and electrical connection, contact your sales representative

Certificate of Calibration

Control, alarm and temperature recording systems are systematically calibrated at the factory for accurate performance. An optional Certificate of Calibration to an NIST (National Institute of Standards and Technology, formerly National Bureau of Standards) traceable instrument includes a model number and serial number certificate (single point calibration). Multiple point calibration is also available. Calibration certificates must be requested when ordering; for details contact your sales representative.

Validation Testing Program

Validation testing services in advance of shipment may accelerate in-house Installation Qualification (IQ) and Operation Qualification (OQ) programs. Validation services include documentation and performance reports, compressor and subsystem component specifications, microprocessor flow diagrams, software specifications and more. For more details, contact your sales representative.

Model no.	Services description
7455TA	Temperature mapping of 24 hours at setpoint to include: <ul style="list-style-type: none"> • Mapping data graphed at each location • Thermocouple placement diagram • Test equipment list • Average uniformity and stability at specified cycle • Minimum, average and maximum temperatures at each thermocouple location • Uniformity and stability at each location
7456TA	Temperature mapping of 24 hours (traceable instruments and raw data) at setpoint to include: <ul style="list-style-type: none"> • Mapping data graphed at each location • Thermocouple placement diagram • Test equipment list- utilizing Kaye Validator® thermal validation equipment • Calibration certificates of test equipment • Thermocouple calibration reports • Average uniformity and stability at specified cycle • Minimum, average and maximum temperatures at each thermocouple location • Uniformity and stability at each location
6916-2	Certificate of calibration

Other Accessories



Wireless Monitoring

Thermo Scientific Smart-Vue™ wireless monitoring solution offers 24/7 continuous, real-time wireless monitoring of critical parameters, early warning alerts, and remote data logging. Likewise, Thermo Scientific Smart-Tracker™ requires only a smart phone to access stored temperature readings. No other equipment or installation is necessary.



Clinical Containers

Made with the highest quality resins, Thermo Scientific Nalgene™ bottles are engineered to work together with a proprietary valve seal and a strong, semi-buttnress thread design. Our Nalgene bottles offer a leakproof* guarantee because we manufacture and test both components together as part of our routine quality program.



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Also available, Thermo Scientific™ TSX Series high-performance undercounter refrigerators

The only undercounter lab-grade refrigerator with redundant cooling

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