

daily dependability

Thermo Scientific TSE
and TSD Series

Thermo Scientific TSE and TSD Series upright freezers are designed for daily sample protection and dependability. Choose our TSE Series freezers for applications requiring -50°C to -86°C or our TSD Series freezers when your storage requirements call for -10°C to -40°C . All models feature state-of-the-art refrigeration, rugged construction and easy-to-use microprocessor control.



TSD Series -40°C Freezer

Rugged construction for everyday use

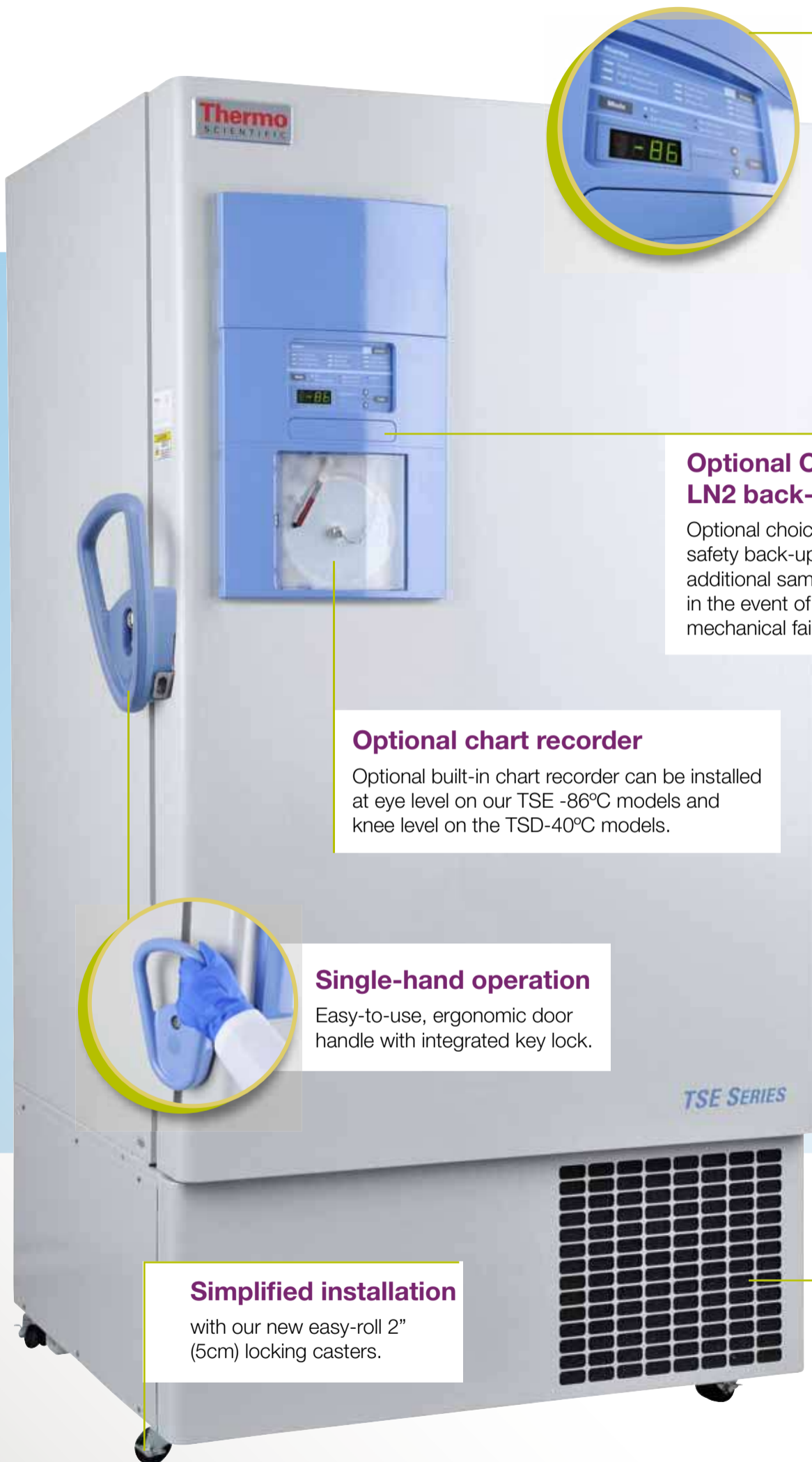
- Heavy gauge, cold-rolled steel cabinets with a powder coat paint finish for a uniform exterior that resists chipping and rust.
- 5" (127mm) foamed-in-place, polyurethane insulation reduces power consumption, maintains temperature setpoint and combined with triple-point door gasket, provides longer holding time in the event of a power loss.
- State-of-the-art, refrigeration system improves temperature control and increases reserve capacity, resulting in a more stable temperature sample.
- Two 1" (25mm) access ports allow for the use of inexpedient probes or instrumentation.
- Select from painted glaveneel or stainless steel interiors on the TSE Series or glaveneel interior on the TSD Series.
- Vacuum relief port permits easy access after door openings



Secure inner doors

Four inner doors reduce cold air loss and improve temperature recovery after door openings.

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Microprocessor control

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 TSE -86°C models and knee level on the TSD-40°C models.

Power Management System

With low voltage surge protection and buck/boost.

Optional CO₂ or LN₂ back-up

Optional choice of CO₂ or LN₂ safety back-up systems for additional sample protection in the event of a power or mechanical failure.



Optional chart recorder

Optional built-in chart recorder can be installed at eye level on our TSE -86°C models and knee level on the TSD-40°C models.



Single-hand operation

Easy-to-use, ergonomic door handle with integrated key lock.



Easy-to-remove, washable filter

Provides protection from dust on the condenser, causing reduced refrigeration performance and increased risk to samples.

Simplified installation

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

TSE Series -86°C Freezer

Thermo Scientific TSE Series -86°C Upright Freezers (-50°C to -86°C)

Model No. (Painted Interior)	Model No. (Stainless Steel Interior)	Capacity cu. ft. (liters)	2 in. Box Qty.	Electrical	Amps / Breaker (Plug)	Maximum 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)
TSE240A TSE240D TSE240V	TSE240SSA TSE240SSD TSE240SSV	13.0 (368)	240	115V / 60Hz 208-230V / 60Hz 230V / 50Hz	16/20 (NEMA 5-20) 12/15 (NEMA 6-15) 12/15 (European)	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)
TSE320A TSE320D TSE320V	TSE320SSA TSE320SSD TSE320SSV	17.3 (490)	320	115V / 60Hz 208-230V / 60Hz 230V / 50Hz	16/20 (NEMA 5-20) 12/15 (NEMA 6-15) 12/15 (European)	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)
TSE400A TSE400D TSE400V	TSE400SSA TSE400SSD TSE400SSV	23.0 (651)	400	115V / 60Hz 208-230V / 60Hz 230V / 50Hz	16/20 (NEMA 5-20) 12/15 (NEMA 6-15) 12/15 (European)	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)
TSE600D TSE600V	TSE600SSD TSE600SSV	28.0 (793)	600	208-230V / 60Hz 230V / 50Hz	12/15 (NEMA 5-20) 12/15 (European)	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)

Thermo Scientific TSD Series -40°C Upright Freezers (-10°C to -40°C)

Model No.	Capacity cu. ft. (liters)	2 in. Box Qty.	Electrical	Amps / Breaker (Plug)	Maximum 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)
TSD40240A TSD40240D TSD40240V	13.0 (368)	240	115V / 60Hz 208-230V / 60Hz 230V / 50Hz	16/20 (NEMA 5-20) 12/15 (NEMA 5-15) 12/16 (European)	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)
TSD40320A TSD40320D TSD40320V	17.3 (490)	320	115V / 60Hz 208-230V / 60Hz 230V / 50Hz	16/20 (NEMA 5-20) 12/15 (NEMA 5-15) 12/16 (European)	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 94.0)	830 (376)
TSD40400D TSD40400V	23.0 (651)	400	115V / 60Hz 208-230V / 60Hz 230V / 50Hz	16/20 (NEMA 5-20) 12/15 (NEMA 5-15) 12/16 (European)	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 94.0)	879 (399)

Monitoring and Remote Options

Model No.	Electrical	Description
5612-1A 5612-3V	120V / 60Hz 230V / 50Hz	Remote Alarm with Audible Signal Extend the freezer's on-board alarm systems to remote locations in the facility.
400047 400182	120V / 60Hz 220V / 50Hz	Sensaphone™ Telephone Dialing System Monitors up to four channels and dials up to four telephone numbers. A dedicated telephone line is required. Not approved for sales requiring CE.
400134 400183	120V / 60Hz 220V / 50Hz	Sensaphone Telephone Dialing System Monitors up to eight channels and dials up to eight telephone numbers. A dedicated telephone line is required. Not approved for sales requiring CE.
400048 400049	120V / 60Hz 220V / 50Hz	Temperature / Power Monitor External digital and audible/visual alarm monitors temperature and power supply of the freezer. Includes temperature probes.



Sensaphone
Telephone
Dialing System

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

Model No.	Installation	Description
1950447	Factory	LN2 Back-Up System
1950448	Field	Maintains temperature down to -80°C with liquid nitrogen
1950445	Factory	CO2 Back-Up System
1950446	Field	Maintains temperature down to -70°C with CO2
201241	Factory	Ink Chart Recorder
201240	Field	6" (15.2cm), seven day recorder to -150°C. Includes one red felt tip pen and box of chart paper (quantity: 50)
201249	Factory	Inkless Chart Recorder
201248	Field	6" (15.2cm), seven day inkless recorder to -150°C. Includes box of chart paper (quantity: 50)
195915	Factory	Unique Key Lock
290199	Factory	PT100 Sensor
290211	Field	Optional sensor for connection to building automation systems



Back-Up Systems



Chart Recorder

Accessories

Model No.	Description
195890	Replacement Air Filter (quantity: 5)
400159	Replacement Back-Up Battery
991505	High-Pressure Liquid CO2 Hose 6' long, kink-resistant, stainless steel lined, double-braided sheath. 316 stainless steel NPT F fitting. Maximum working pressure 25,000 psig
950316	Wall Clamp – CO2 cylinder holder for securing tank to the wall for OSHA guidelines
4000401	LN2 Transfer Hose – flexible 6' metal hose: 0.5" diameter, 45° flare with swivel end
17020	Ink Chart Paper (quantity: 50)
180000	Inkless Chart Paper (quantity: 50)
224134	Shelf Kit for 240 box capacity freezers (includes one shelf and clips)
224135	Shelf Kit for 320 box capacity freezers (includes one shelf and clips)
224158	Shelf Kit for 400 box capacity freezers (includes one shelf and clips)
224180	Shelf Kit for 600 box capacity freezers (includes one shelf and clips)
245231	Red Felt Tip Pen
245232	Blue Felt Tip Pen
4425	Cryo Gloves (medium)
4426	Cryo Gloves (large)
TF-ULT13	Seismic restraint kit for 13 cu. ft. (368L)
TF-ULT17	Seismic restraint kit for 17.3 cu. ft. (490L)
TF-ULT23	Seismic restraint kit for 23 cu. ft. (651L)
TF-ULT28	Seismic restraint kit for 28 cu. ft. (600L)

Water-Cooled Condenser Option

Model No.	For Use With
195964	TSE240
195965	TSE320, TSE400, TSE600

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 watercooled 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)


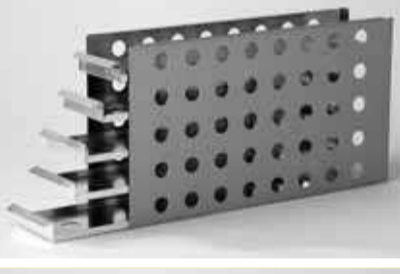




City Water..... Yes

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.



Thermo Scientific TSE and TSD Series Upright Freezer Racks for 2" Boxes

2" Box Racks	Model No. (Description)	Dimensions H x W x D in. (cm)	Freezer Vol. cu. ft. (liters)	Boxes/ Rack	Racks/ Shelf	Racks/ Freezer	Boxes/ Freezer
	920094 (Sliding Drawer Rack for 2" Boxes)	11.9 x 5.5 x 16.6 (30.2 x 14 x 42.2)	13 (368.1)	15	4	16	240
	920096 (Sliding Drawer Rack for 2" Boxes)	11.9 x 5.5 x 22 (30.2 x 14 x 55.9)	17.3 (490)	20	4	16	320
			23 (651.3)	20	5	20	400
	1950726 (Sliding Drawer Rack for 2" Boxes)	11.9 x 5.5 x 26.3 (30.2 x 14 x 66.5)	28.1 (793)	25	6	24	600
	920015 (Adjustable Side Access Rack)	11.6 x 5.4 x 16.5 (29.5 x 13.7 x 41.9)	13 (368.1)	15	4	16	240
	920022 (Side Access Rack for 2" Boxes)	11.6 x 5.4 x 24.6 (29.5 x 13.7 x 62.5)	17.3 (490)	22	4	16	352
			23 (651.3)	22	5	20	440
	920018 (Adjustable Side Access Rack)	11.6 x 5.4 x 22 (29.5 x 13.7 x 55.8)	17.3 (490)	20	4	16	320
			23 (651.3)	20	5	20	400

**Thermo Scientific TSE and TSD Series
Upright Freezer Racks for 3" Boxes**

3" Box Racks	Model No. (Description)	Dimensions H x W x D in. (cm)	Freezer Vol. cu. ft. (liters)	Boxes/ Rack	Racks/ Shelf	Racks/ Freezer	Boxes/ Freezer
	920095 (Sliding Drawer Rack for 3" Boxes)	11.9 x 5.5 x 16.6 (30.2 x 14 x 44.2)	13 (368.1)	9	4	16	144
	920097 (Sliding Drawer Rack for 3" Boxes)	11.9 x 5.5 x 22 (30.2 x 14 x 55.9)	17.3 (490)	12	4	16	192
			23 (651.3)	12	5	20	240
	1950727 (Sliding Drawer Rack for 3" Boxes)	11.9 x 5.5 x 26.3 (30.2 x 14 x 66.5)	28.1 (793)	15	6	24	360
	920009 (Side Access Rack for 3" Boxes)	11.6 x 5.4 x 16.5 (29.5 x 13.7 x 41.9)	13 (368.1)	9	4	16	144
	920017 (Side Access Rack for 3" Boxes)	11.6 x 5.4 x 22 (29.5 x 13.7 x 55.9)	17.3 (490)	12	4	16	192
			23 (651.3)	12	5	20	240

Thermo Scientific TSE and TSD Series Upright Freezer Specialty Racks

Specialty Racks	Model No. (Description)	Dimensions H x W x D in. (cm)	Freezer Vol. cu. ft. (liters)	Racks/ Shelf	Racks/ Freezer
	830012 (Multi-Drawer Rack)	11.5 x 11 x 11 (29.2 x 28 x 28)	13 (368.1)	1	4
			17.3 (490)	2	8
			23 (651.3)	4	16
	830030 (8 Compartment Container)	5.3 x 7 x 18 (13.5 x 18 x 45.7)	13 (368.1)	6	24
	830032 (10 Compartment Container)	5.3 x 7 x 22.6 (13.5 x 18 x 56)	17.3 (490)	6	24
			23 (651.3)	6	32

Sliding Drawer Inserts (Pack of 5)




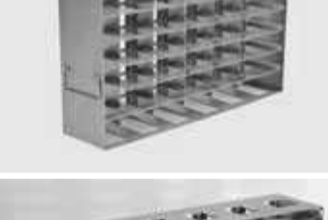


Model No.	For	Freezer Volume	Slots
1950666P5	microplates	13 cu. ft. (368L)	4
1950669P5	microplates	17/23 cu. ft. (490/651L)	6
1950671P5	microplates	28 cu. ft. (793L)	7

Model No.	For	Freezer Volume	Slots
1950668P5	boxes	13 cu. ft. (368L)	3
1950670P5	boxes	17/23 cu. ft. (490/651L)	4
1950672P5	boxes	28 cu. ft. (793L)	5

Racking Shelf Kits (Includes Sliding Drawer Racks and 2" Boxes with 100-Count Cell Dividers)

Model No.	Freezer Vol. cu. ft. (liters)	Racks Included	Boxes Included
RSK13SD4	13.0 (368)	4	60
RSK17SD4	17.3 (490)	4	80
RSK23SD4	23.0 (651)	5	100
RSK28CFSD4	28.0 (793)	6	150

Thermo Scientific TSE and TSD Series Upright Freezer Racks for Microplates

Microplate Racks	Model No. (Description)	Dimensions H x W x D in. (cm)	Freezer Vol. cu. ft. (liters)	Plates/Rack	Racks/Shelf	Racks/Freezer	Plates/Freezer
	1950640 Sliding drawer rack	11.9 x 5.5 x 16.6 (30.2 x 14 x 44.2)	13 (368.1)	20	4	16	320
	1950641 Sliding drawer rack	11.9 x 5.5 x 22 (30.2 x 14 x 55.9)	17.3 (490)	30	4	16	480
23 (651.3)			30	5	20	600	
	1950731 Sliding drawer rack	11.9 x 5.5 x 26.3 (30.2 x 14 x 66.8)	28 (793)	35	6	24	840
	1950651 Side access rack	11.9 x 5.3 x 14.7 (30.2 x 13.5 x 37.3)	13 (368.1)	56	4	16	896
	1950652 Side access rack	11.9 x 5.3 x 22 (30.2 x 13.5 x 55.9)	17.3 (490)	84	4	16	1344
23 (651.3)			84	5	20	1680	
	820036 Side access rack	12 x 5.5 x 22 (30.5 x 14 x 55.9)	17.3 (490)	36	4	16	576
23 (651.3)			36	5	20	720	

See Page 19 for Boxes and Dividers