



## Technical Data Sheet

### High Performance Plasma Freezer

Revision: 3

Thermo Fisher Scientific, Asheville, North Carolina

<b>Specifications</b>	<b>Catalog number</b>	TSX5030LV
	<b>Model Number</b>	TSX5030LV
<b>Application, Rating and Electrical Data</b>		
Application	Plasma Storage (non-flammable) Freezer	
Storage Volume	1447 Liters / 51.1 Cubic Feet	
Factory Set Point	-30°C	
Set Point Range/Adjustable Increment	-35°C to -15°C / 0.1°C	
Electrical Power / Rated Current	208-230V 50 Hz 1 Phase / 9.6A	
Building Supply Rating	15A dedicated grounded non-GFCI circuit. Protected by circuit breaker rated for inductive loads	
Power Plug/Power Cord Length	16 Amp (CEE 7/7) / 3.048 Meters (10 feet)	
Agency Listings	CE, UL, cUL, FDA	
Indoor/Outdoor Usage	Indoor Use Only	
Application Environment	Non-Corrosive, Non-Flammable, Non-Explosive, Good Air Ventilation	
Ambient Operating Temperature	15° C - 32° C (60° F - 90° F)	
<b>Refrigeration Configuration</b>		
Refrigeration System	Vapor compression system	
Compressor / Number / Capacity	Hermetic Variable Capacity Compressor / 1 / 672W	
Condenser Type/Number	Enhanced Finned-Tube and Forced-Air Cooled / 1	
Expansion Device	Thermal Expansion Valve	
Evaporator Type / Defrost Method	Forced Air Evaporator Coil / Automatic Defrost	
Refrigerant Charge / Flammability	R290, 135 gms, GWP:3 ODP:0 / Flammable	
<b>Controller/Electrical System Configuration and Features</b>		
Controller Level	Eye Level	
Power Switch	Keyed Off-On - Alarm	
Controller Type	IntrLogic Control System: Digital Display, Graphic Thermometer, Automatic Defrost System	
Setpoint Security / Programmable	Yes / Yes	
Compressor Safe Guard	Current protection	
Control Sensor	Single RTD (1000 ohm shielded Platinum RTD)	
Connectivity / Remote Outputs	Standard	
Adjustable Warm / Cold Alarms	Fully Adjustable	
Power Failure Alarm	Standard	
Electronic Chart Recorder	Standard	
<b>Dimensions and Construction</b>		
Interior Dimensions (D x W x H)	72.4 cm x 133.4 cm x 147.3 cm (28.5" x 52.5" x 58.0")	
Exterior Dimensions (D x W x H)	96.2 cm x 143.5 cm x 199.4 cm (37.9" x 56.5" x 78.5")	
Insulation	5.08 cm (2.0") High-Density Water-Blown Polyurethane Foam	
Door Perimeter heater	Yes	
Shelves / Load Limit	(14) Drawers Adjustable In 1" Increments / 27 kg (60 lbs) per Drawer	
All-Direction Casters	Standard with Locks	
Shipping Weight	371 kg / 817 lb	

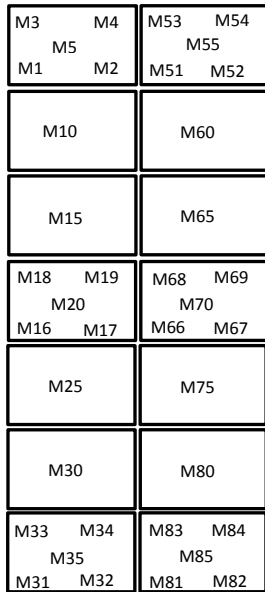
<b>Typical Performance Characteristics in 20°C Ambient</b>		Test Unit Series Number or MSO Number:	19585-B-10
		Cabinet Load:	Unloaded
		Average Cabinet Temp at -30C Cycle (C):	-30.1
		Peak Variation from Setpoint (C):	+6.9 / -1.6
		Uniformity (C):	2
		Stability (C):	4.3
		1-min Door Opening Recovery to -30C (min):	30
		Duty Cycle at -30C (%):	72
		Cycle (on/off) rate at -30C (min):	11 / 4
		Energy Consumption (kw-hr/day):	15.2
		Heat Rejection Rate (btu/hr):	2167
		Pull Down Time (to -30C) (min):	140
		Warm Up Time (-30C to -10C) (min):	204
		Sound (dBA):	52

- 1) Performance is nominal and individual units may vary.
- 2) Product performance will differ due to product amount, product size and operating conditions.
- 3) Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.

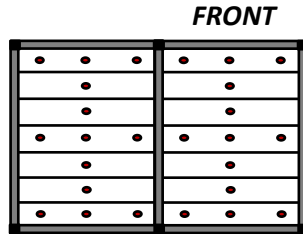
**Typical Cabinet Temperature Map**  
Freezer 50cuft , 14 Drawers, 2 Outer Doors

Temperatures are averages during > 20 cycles after reaching a setpoint of -30C

**Top View of Shelves**



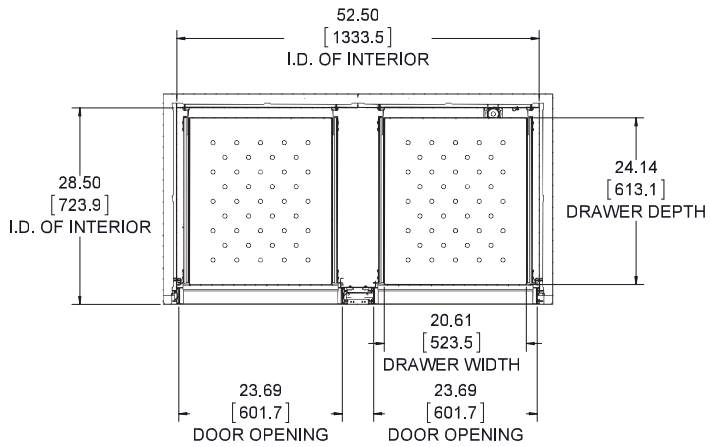
**REAR**  
**FRONT**



**19585-B-10**

**Cabinet Average:** -30.1 C  
**Probe Average:** -29.2 C  
**Peak Variation:** +6.9 C / -1.6 C

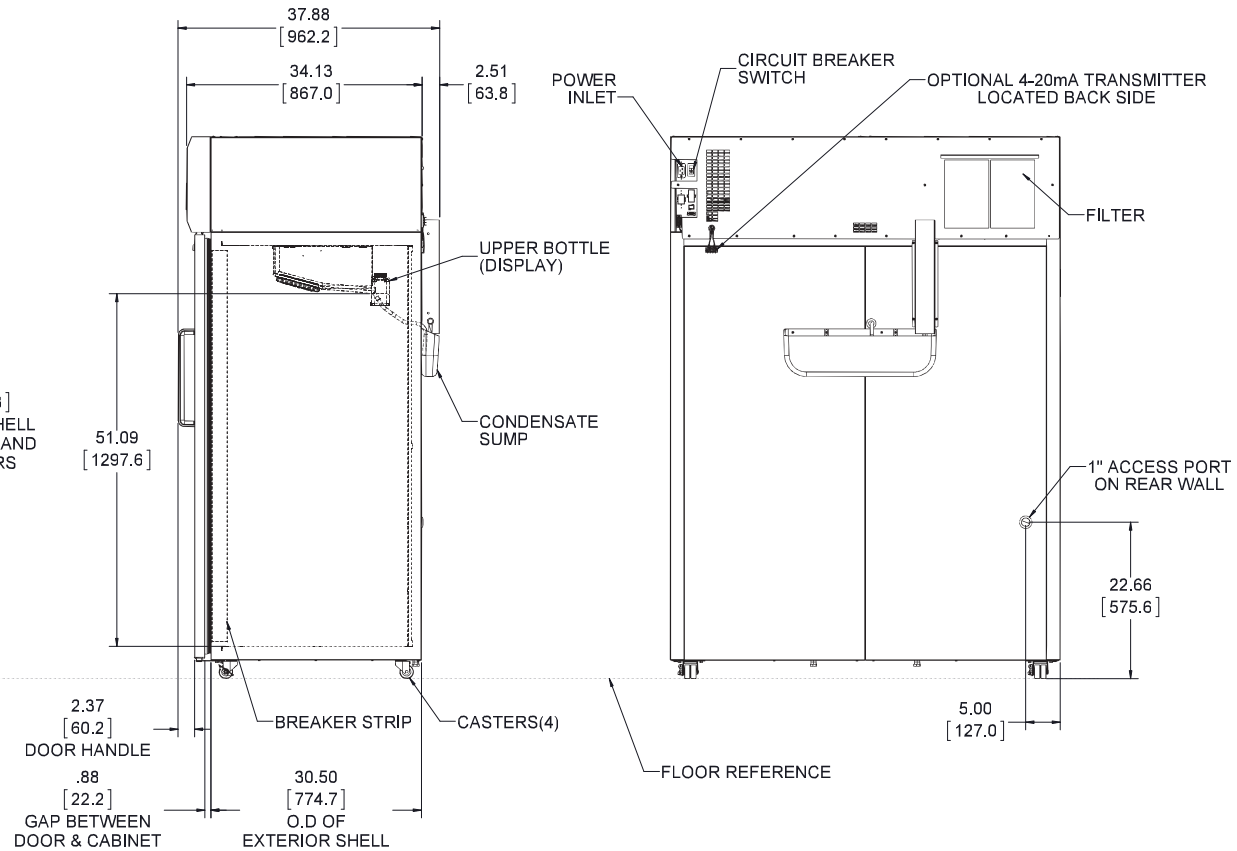
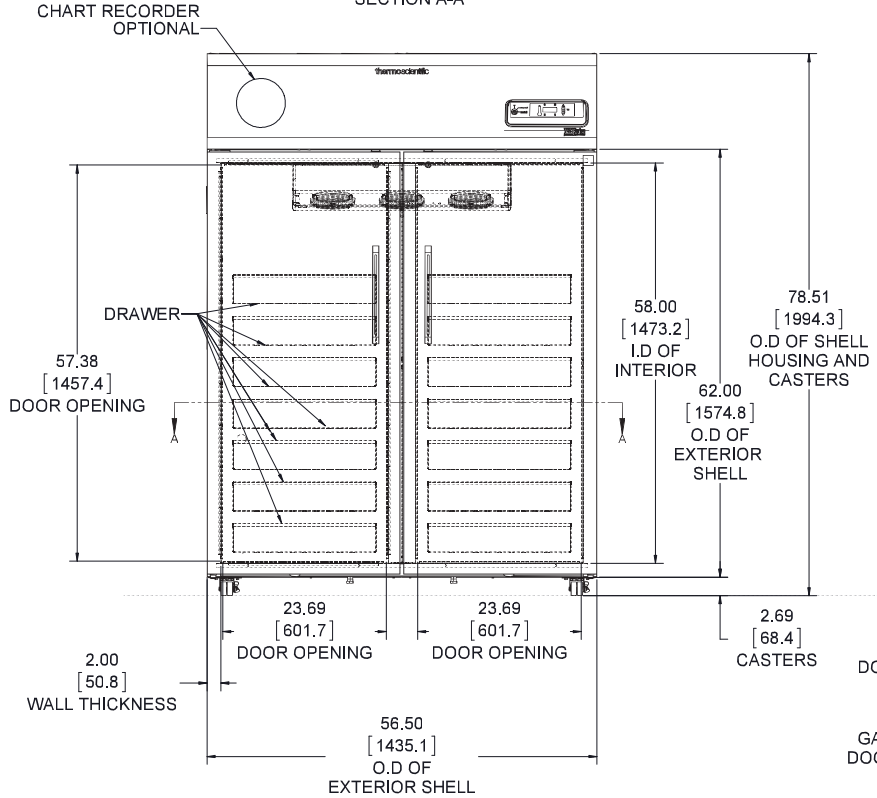
	M1	M2	M3	M4	M5	M10	M15
Avg	-29.2	-29.6	-29	-29.8	-29.4	-29.9	-29.8
Max	-24.6	-23.9	-23.7	-23.2	-24.1	-27	-27
Min	-29.8	-30.4	-29.7	-30.7	-30.2	-30.4	-30.3
	M16	M17	M18	M19	M20	M25	M30
Avg	-29.8	-29.9	-30	-30	-30	-30.1	-30.3
Max	-26.5	-27.4	-25.7	-26.5	-26.5	-27.4	-26.1
Min	-30.3	-30.2	-30.6	-30.6	-30.5	-30.6	-30.9
	M31	M32	M33	M34	M35		
Avg	-30	-30.7	-30.1	-30.9	-30.3		
Max	-27.5	-27.2	-27.1	-26.6	-26.8		
Min	-30.6	-31.3	-30.6	-31.6	-30.9		
	M51	M52	M53	M54	M55	M60	M65
Avg	-29.6	-29.6	-30.2	-29.8	-29.6	-30.2	-30.3
Max	-24.9	-24.9	-24.7	-24.6	-24.6	-27	-27.5
Min	-30.7	-30.5	-31.2	-30.7	-30.5	-30.8	-30.8
	M66	M67	M68	M69	M70	M75	M80
Avg	-30.3	-30.2	-30.7	-30.6	-30.4	-30.5	-30.4
Max	-27.8	-27.4	-27.6	-26.1	-28.1	-27.8	-27.8
Min	-30.7	-30.7	-31.3	-31.1	-30.9	-30.9	-31
	M81	M82	M83	M84	M85		
Avg	-29.6	-30	-30.5	-30	-30.2		
Max	-27.1	-27.5	-27.2	-27.1	-27.7		
Min	-30.3	-30.5	-31.1	-30.5	-30.7		



ONLY CABINET SHOWN FOR CLARITY IN TOP VIEW,  
TO ILLUSTRATE INTERIOR DIMENSIONS

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SECTION A-A



**NOTE: DUAL DIMENSION IS INCHES OVER MILLIMETERS**  
DO NOT USE FOR ENGINEERING PURPOSES. SUBJECT TO CHANGE WITHOUT NOTICE.

**50 cu.ft. Plasma Freezer**  
14 Drawers  
Double Outer Door  
Top Mount Controls

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