

## Technical Data Sheet

### High Performance Plasma Freezer

Revision: 1

Thermo Fisher Scientific, Asheville, North Carolina

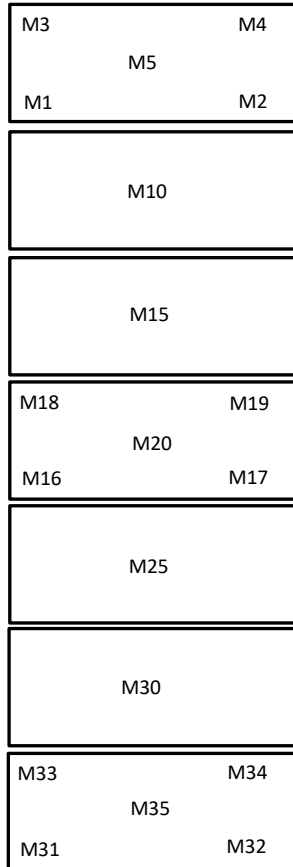
Specifications	Catalog number	
	TSX1230LV	
Model Number	TSX1230LV	
Application, Rating and Electrical Data	Plasma Freezer	
Application	Plasma Freezer	
Storage Volume	326 Liters / 11.5 Cubic Feet	
Factory Set Point	-30°C	
Set Point Range/Adjustable Increment	-35°C to -15°C / 0.1°C	
Electrical Power / Rated Current	208-230V 50 Hz 1 Phase / 3.6A	
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)	
Refrigeration Configuration	Vapor compression system	
Refrigeration System	Vapor compression system	
Compressor / Number / Capacity	Hermetic Variable Capacity Compressor / 1 / 398W	
Condenser Type/Number	Enhanced Finned-Tube and Forced-Air Cooled / 1	
Expansion Device	Capillary Tube	
Evaporator Type / Defrost Method	Forced Air Evaporator Coil / Automatic Defrost	
Refrigerant Charge / Flammability	R290, 95gms, GWP:3 ODP:0 / Flammable	
Controller/Electrical System Configuration and Features	Eye Level	
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	
Dimensions and Construction	55.4 cm X 50.8 cm x 133.1 cm (21.8" X 20.0" X 52.4")	
Interior Dimensions (D x W x H)	55.4 cm X 50.8 cm x 133.1 cm (21.8" X 20.0" X 52.4")	
Exterior Dimensions (D x W x H)	79.0 cm x 61.9 cm x 185.4 cm (31.1" x 24.0" x 73.0")	
Insulation	5.08 cm (2.0") High-Density Water-Blown Polyurethane Foam	
Door Perimeter heater	Yes	
Shelves / Load Limit	(7) Drawers Adjustable In 1" Increments / 27 kg (60 lbs) per Drawer	
All-Direction Casters	Standard with Locks	
Shipping Weight	187 kg / 412 lb	
Typical Performance Characteristics in 20°C Ambient		
		Test Unit Series Number or MSO Number: 19758-A-13-2  Cabinet Load: Unloaded Average Cabinet Temp at -30C Cycle (C): -30.4 Peak Variation from Setpoint (C): +6.8 / -3.3 Uniformity (C): 2.4 Stability (C): 5.4 1-min Door Opening Recovery to -30C (min): 10 Duty Cycle at -30C (%): 69 Cycle (on/off) rate at -30C (min): 9 / 4 Energy Consumption (kw-hr/day): 6.6 Heat Rejection Rate (btu/hr): 936 Pull Down Time (to -30C) (min): 94 Warm Up Time (-30C to -10C) (min): 151 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 12cuft , 7 Drawers, Single Outer Door

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

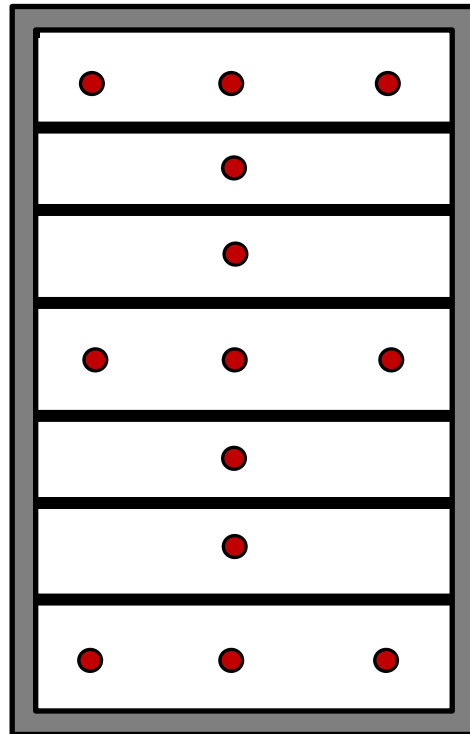
**Top View of Shelves**



**REAR**

**FRONT**

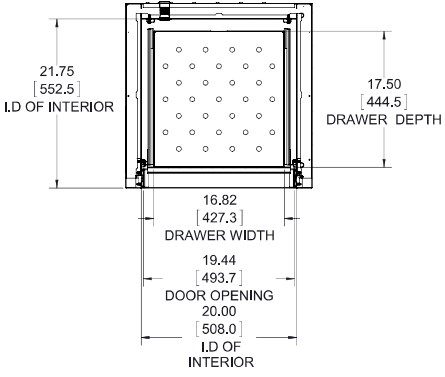
**Front View**



19758-A-13-2

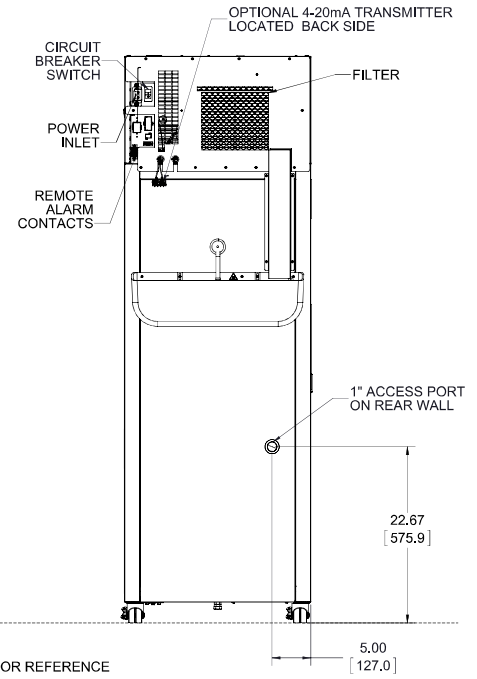
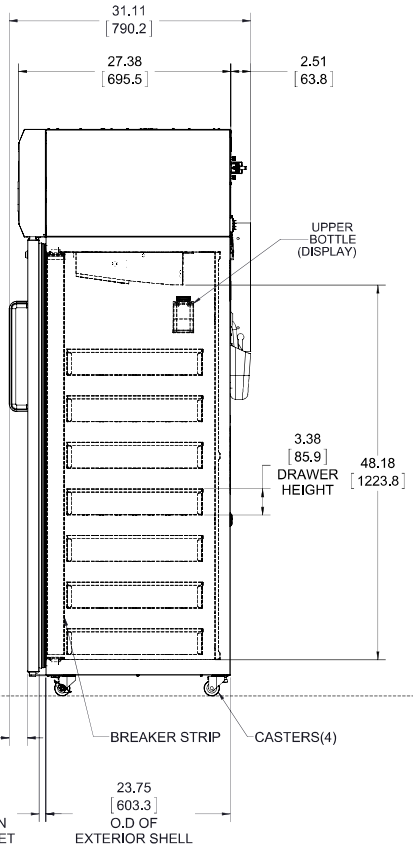
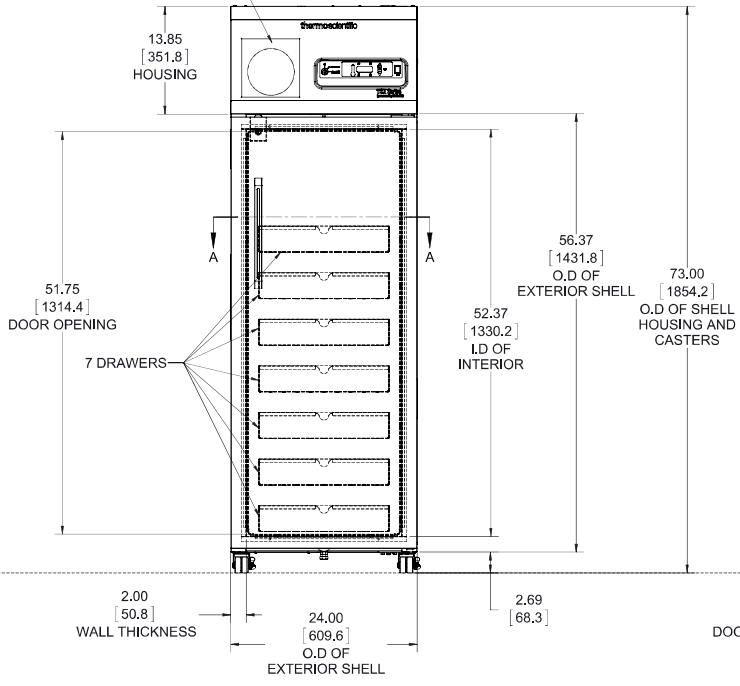
	M1	M2	M3	M4	M5
Avg	-30.9	-30.6	-30.8	-30.5	-30.4
Max	-23.5	-23.9	-23.2	-23.3	-23.5
Min	-33.1	-32.6	-33.3	-32.6	-32.3
	M10	M15			
Avg	-30.7	-31			
Max	-27.2	-27.8			
Min	-31.8	-31.8			
	M16	M17	M18	M19	M20
Avg	-30.4	-30.1	-30.8	-31	-30.7
Max	-27	-27.7	-26.6	-27.4	-27.8
Min	-31.3	-30.9	-32.1	-32.2	-31.5
	M25	M30			
Avg	-30.5	-30.2			
Max	-27.4	-27			
Min	-31.5	-31.1			
	M31	M32	M33	M34	M35
Avg	-29.5	-29.9	-29.8	-29.9	-29.9
Max	-27.2	-27.3	-26.7	-27.2	-27.2
Min	-30.4	-30.8	-30.7	-30.9	-30.9

**Cabinet Average:** -30.4 C  
**Probe Average:** -30.4 C  
**Peak Variation:** +6.8 C / -3.3 C



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

SECTION A-A



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

12 cu.ft. Plasma Freezer  
7 Drawers  
Single Outer Door  
Top Mount Controls

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