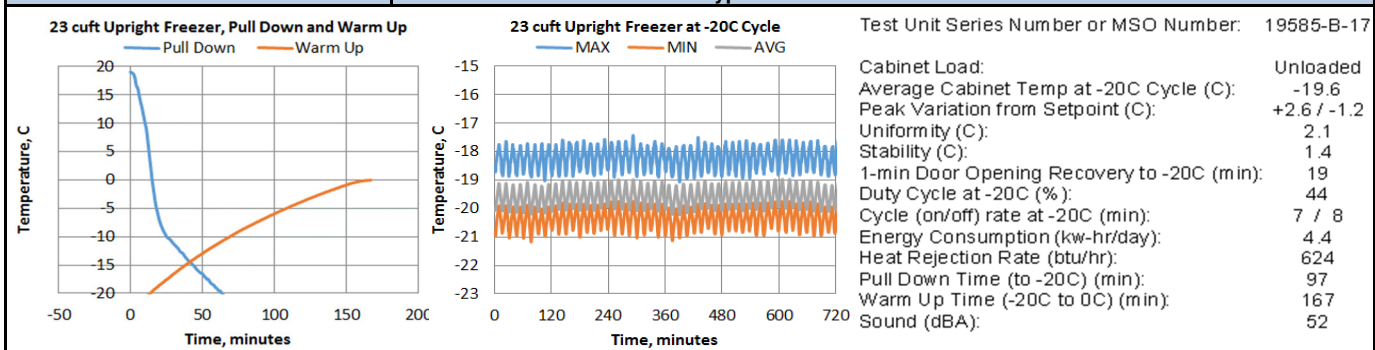




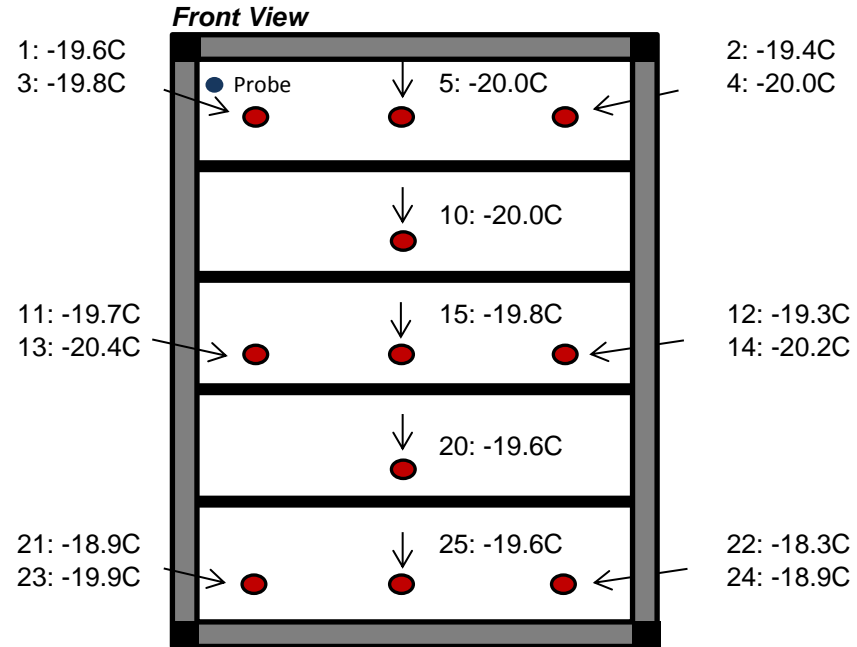
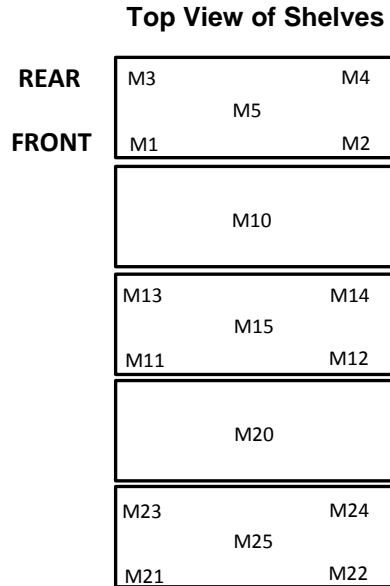
Specifications	Catalog number	TSX2320FV
	Model Number	TSX2320FV
	Application, Rating and Electrical Data	
	Application	Storage of General (non-flammable) Laboratory Materials
Storage Volume	659 Liters / 23.3 Cubic Feet	
Factory Set Point	-20°C	
Set Point Range/Adjustable Increment	-25°C to -15°C / 0.1°C	
Electrical Power / Rated Current	208-230V 50/60 Hz 1 Phase / 2.5A	
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	
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		
Refrigeration System	Vapor compression system	
Compressor / Number / Capacity	Hermetic Variable Capacity Compressor / 1 / 525W	
Condenser Type/Number	Microchannel and Forced-Air Cooled / 1	
Expansion Device	Capillary Tube	
Evaporator Type / Defrost Method	Cold Wall With Enhanced Heat Transfer Treatment / Manual Defrost	
Refrigerant Charge / Flammability	Environmentally Safe R290 / Flammable	
Controller/Electrical System Configuration and Features		
Controller Level	Eye Level	
Power Switch	Keyed Off-On - Alarm	
Controller Type	IntrLogic Control System: Digital display, Graphic thermometer	
Setpoint Security / Programmable	Yes / Yes	
Compressor Safe Guard	Current protection	
Control Sensor	Single RTD (1000 ohm shielded Platinum RTD)	
Remote Alarm Terminals	Standard	
Adjustable Warm / Cold Alarms	Fully Adjustable	
Power Failure Alarm	Standard	
Electronic Chart Recorder	Optional	
Dimensions and Construction		
Interior Dimensions (H x D x W)	1473 mm x 723 mm x 610 mm (58.0" x 28.5" x 24.0")	
Exterior Dimensions (H x D x W)	1994 mm x 936 mm x 711 mm (78.5" x 36.9" x 28.0")	
Insulation	5.08 cm (2.0") High-Density Water-Blown Polyurethane Foam	
Door Perimeter heater	Yes	
Shelves / Load Limit	(4) Adjustable Wire Shelves / Max. Cap. per Shelf: 45 kg (100 lbs.)	
All-Direction Casters	Locking Casters	
Shipping Weight	199 kg /438 lb	



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 23cuft , 4 Inner-Shelves + Base, Single Outer Door

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



Cabinet Average: -19.6 C
Probe Average: -23.1 C
Peak Variation: +2.6 C / -1.2 C

19585-B-17

	M1	M2	M3	M4	M5	M10	M11	M12	M13
Avg	-19.6	-19.4	-19.8	-20	-20	-20	-19.7	-19.3	-20.4
Max	-18.9	-18.7	-18.8	-19.2	-19.2	-19.3	-19.1	-18.8	-19.7
Min	-20.2	-19.9	-20.9	-20.8	-20.7	-20.5	-20.2	-19.9	-21.2

	M14	M15	M20	M21	M22	M23	M24	M25
Avg	-20.2	-19.8	-19.6	-18.9	-18.3	-19.9	-18.9	-19.6
Max	-19.2	-19.3	-19.1	-18	-17.4	-18.9	-18.4	-19
Min	-20.8	-20.4	-20.2	-19.6	-19.1	-21	-19.3	-20.1

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

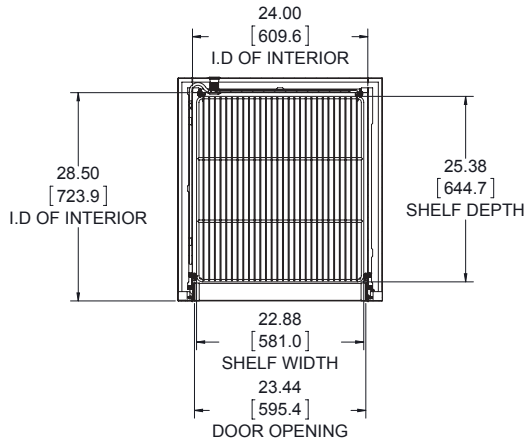
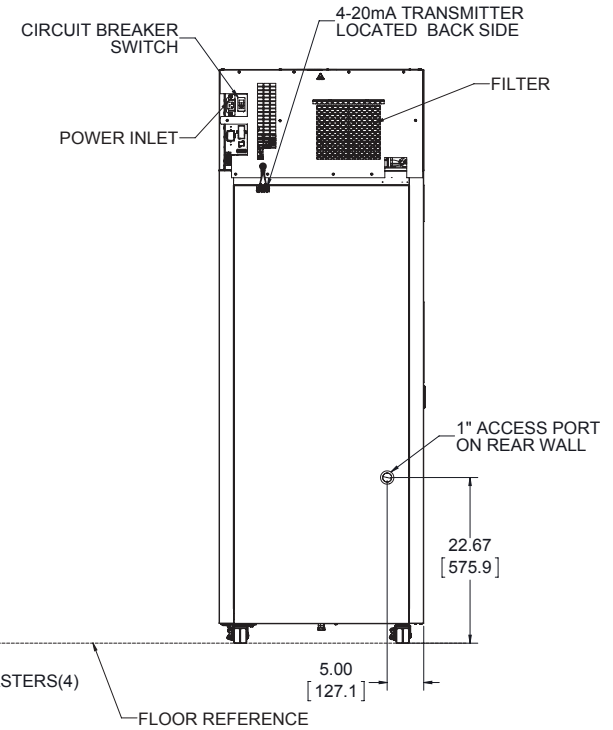
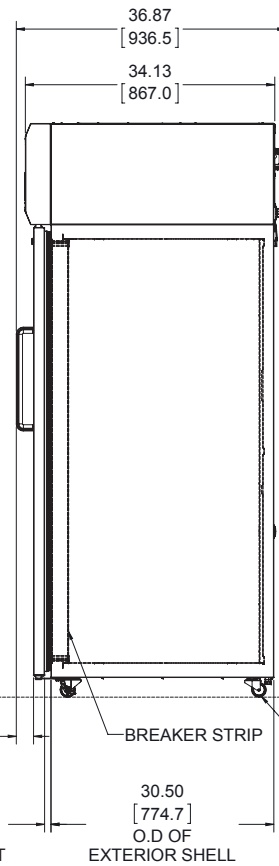
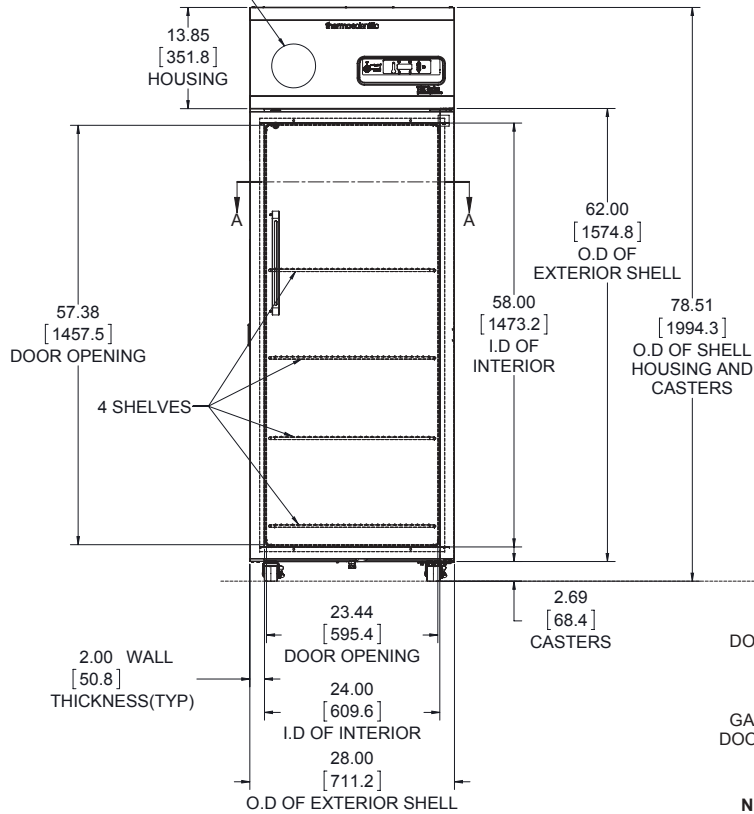


CHART RECORDER OPTIONAL

SECTION A-A



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

23 cu.ft. Lab Freezer
4 Shelves
Single Outer Door
Top Mount Controls