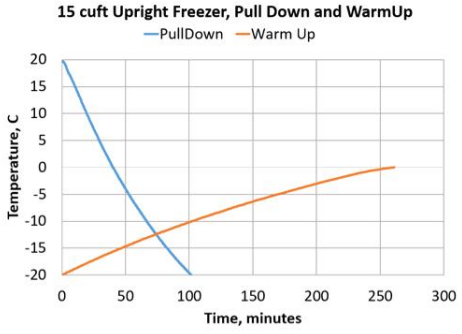
Technical Data Sheet

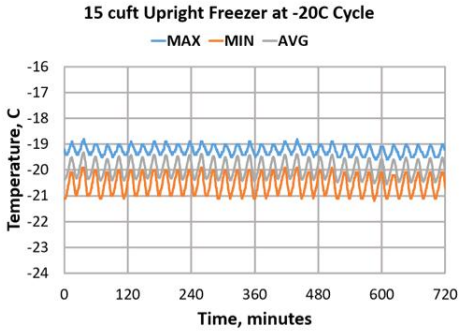
TSX™ HP Assure Manual Defrost Laboratory Freezer

Revision: 0

Thermo Fisher Scientific, Marietta, Ohio

Specifications	Catalog number
	TSX2-1520FV
	Model Number
	TSX2-1520FV
	Application, Rating and Electrical Data
Application	Laboratory-grade long-term storage/preservation, -25°C to -15°C intended-use range
Storage Volume	14.7 cu.ft / 418 L
Factory Set Point	-20°C
Set Point Range/Adjustable Increment	-15C to -25°C / 0.1°C increment
Electrical Power / Rated Current	220-240 V, 50/60 Hz, 1 Phase/1.3 A
Building Supply Rating	10A or greater dedicated grounded non-GFCI circuit. Protected by circuit breaker rated for inductive loads
Power Plug/Power Cord Length	10 Amp (CEE 7/7) / 3 Meters (10 feet)
Agency Listings	CE
Indoor/Outdoor Usage	Indoor Use Only
Application Environment	Non-Corrosive, Non-Flammable, Non-Explosive, Good Air Ventilation
Ambient Operating Temperature	15°C to 32°C; RH <65%
	Refrigeration Configuration
Refrigeration System	Vapor compression system
Compressor / Number / Capacity	Hermetic Variable Capacity Compressor / 1 / 668W
Condenser Type/Number	Enhanced Finned-Tube and Forced-Air Cooled / 1
Expansion Device	Capillary tube
Evaporator Type / Defrost Method	Enhanced Cold Wall/Manual Defrost
Refrigerant Charge / Flammability	R290, 60gms, GWP:3 ODP:0 / Flammable
	Controller/Electrical System Configuration and Features
Controller Level	Eye Level
Power Switch	N/A, Unit turns on when plugged in
Controller Type	Digital Controller with Touch screen
Setpoint Security / Programmable	Yes / Yes
Compressor Safe Guard	Current protection
Control Sensor	NTC (10k ohms)
Connectivity / Remote Outputs	Remote alarm contacts; RS485 output; USB temperature-data export
Adjustable Warm / Cold Alarms	Fully Adjustable
Power Failure Alarm	Standard
Electronic Chart Recorder	On-screen temperature history chart (24 h / 7 d) plus USB data export
	Dimensions and Construction
Interior Dimensions (D x W x H)	24.5 x 21.5 x 51.2 in / 62.2 x 54.5 x 130.0 cm
Exterior Dimensions (D x W x H)	32.0 x 28.2 x 72.0 in / 81.3 x 71.6 x 183.0 cm
Insulation	6.9cm (2.7") HFC-free Polyurethane Foam
Door Perimeter heater	Yes
Shelves / Load Limit	(5) Adjustable Wire Shelves / Max Capacity per shelf: 100lb (45kg)
All-Direction Casters	Standard
Shipping Weight	155 kg / 342 lb
	Typical Performance Characteristics





Test Sample Number: S202603250227	
Cabinet Load:	Unloaded
Average Cabinet Temp at -20C Cycle (C):	-20
Peak Variation from Setpoint (C):	+1.2 / -1.2
Uniformity (C):	1.3
Stability (C):	1.2
1-min Door Opening Recovery to -20C (min):	23
Duty Cycle at -20C (%):	44
Cycle (on/off) rate at -20C (min):	10 / 13
Energy Consumption (kw-hr/day):	1.06
Heat Rejection Rate (btu/hr):	151
Pull Down Time (to -20C) (min):	102
Warm Up Time (-20C to 0C) (min):	261
Sound (dBA):	44

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 ommisions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.

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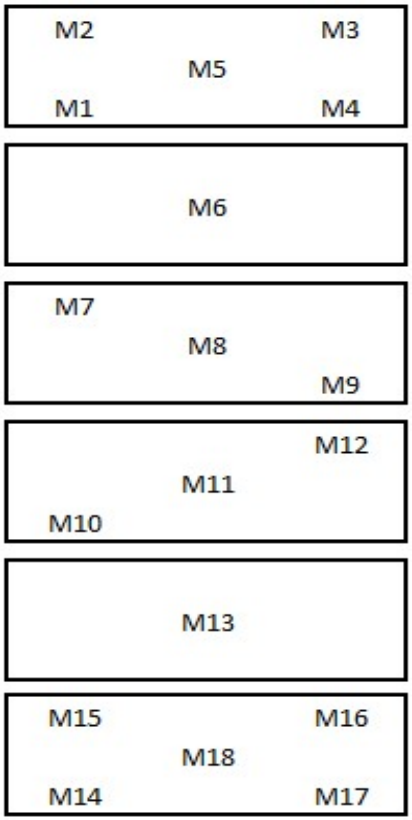
thermo scientific

Typical Cabinet Temperature Map
Freezer 15cuft, 5 Inner-Shelves + Base, Single Outer Door

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

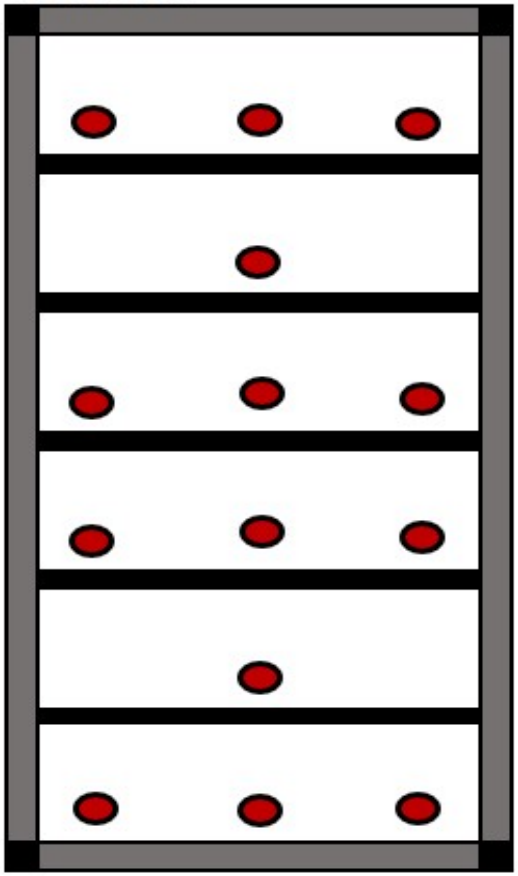
Top View of Shelves

Rear



Front

Front View



S202603250227

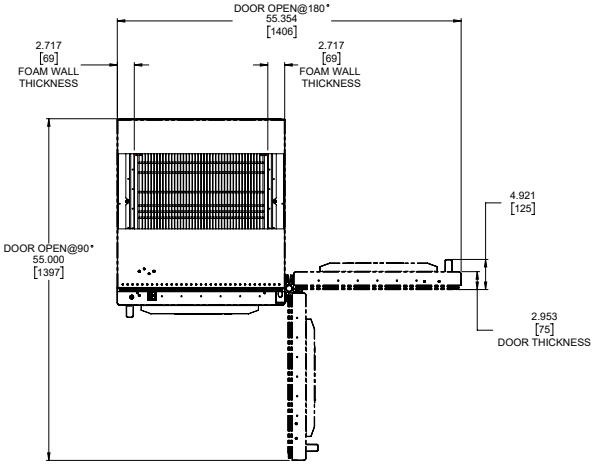
	M1	M2	M3	M4	M5
Avg	-20.1	-20.3	-20.1	-20.2	-20.2
Max	-19.4	-19.5	-19.4	-19.6	-19.3
Min	-20.6	-21.0	-20.9	-20.8	-21.0

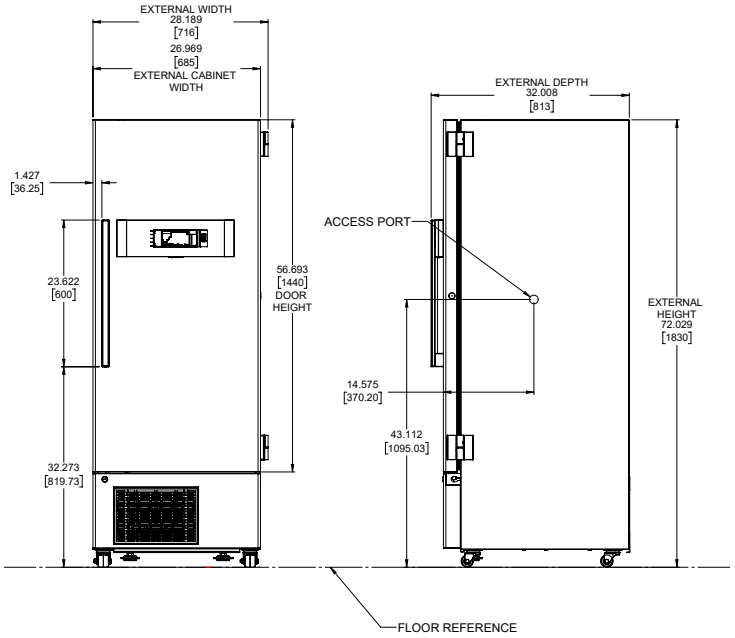
	M6	M7	M8	M9
Avg	-20.4	-20.2	-19.8	-20.5
Max	-19.9	-19.5	-19.2	-19.7
Min	-21.0	-21.0	-20.4	-21.1

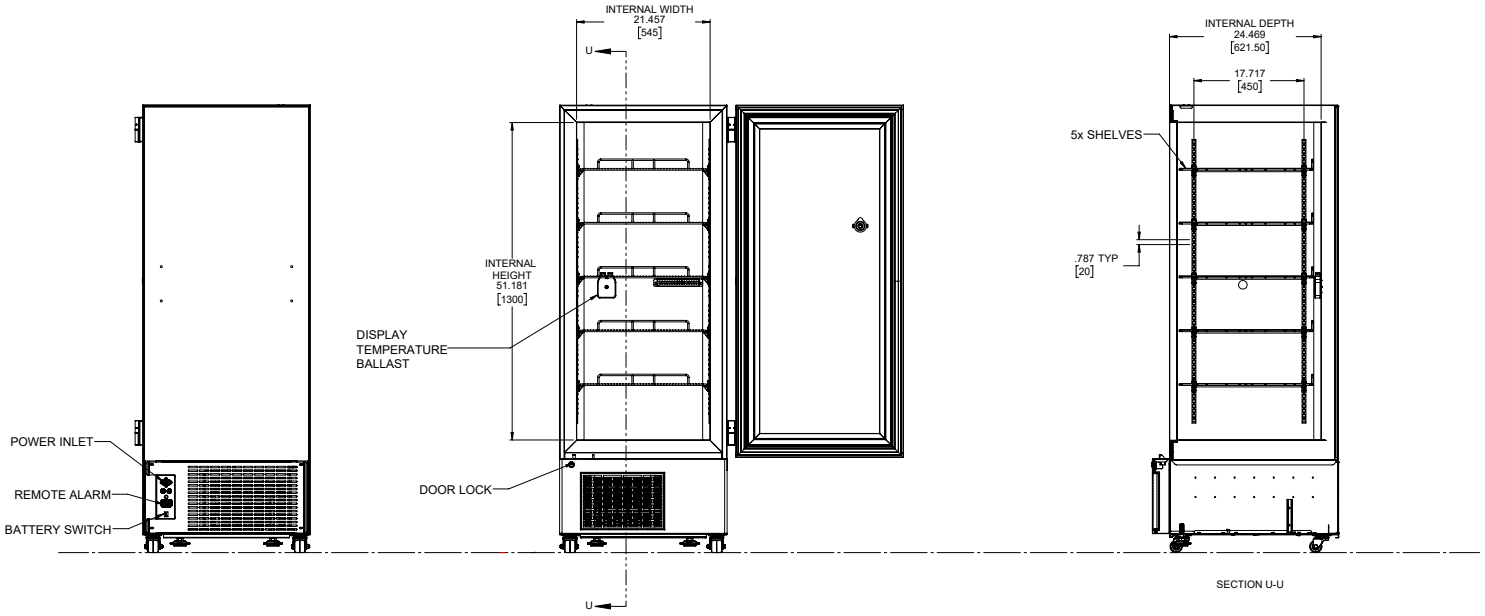
	M10	M11	M12	M13
Avg	-19.3	-20.5	-20.0	-19.9
Max	-19.0	-19.6	-19.6	-19.5
Min	-19.6	-21.2	-20.5	-20.4

	M14	M15	M16	M17	M18
Avg	-19.4	-19.5	-19.8	-19.5	-19.9
Max	-18.9	-18.8	-19.1	-18.9	-19.2
Min	-19.9	-20.0	-20.3	-20.2	-20.5

Cabinet Average: -20.0 C
Peak Variation: +1.2 C / -1.2C







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

TDS_TSX2-1520FV_rA
15 cu.ft. Lab Freezer
5 Shelves
Single Outer Door
Door Mount Controls