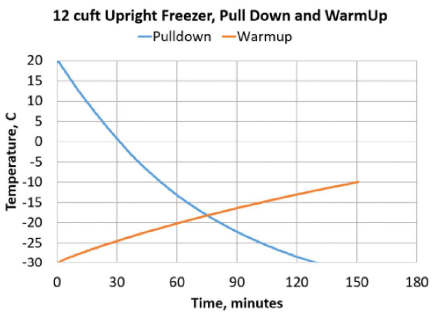
Technical Data Sheet

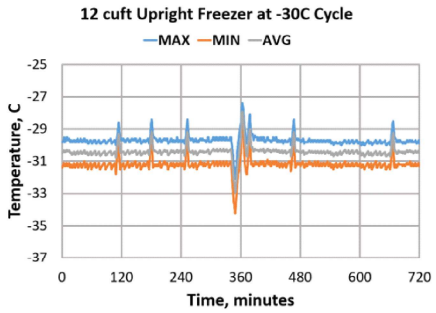
TSX™ HP Flex Auto Defrost Freezer

Revision: 0

Thermo Fisher Scientific, Marietta, Ohio

Specifications	Catalog number
	TSX1-1230FV
	Model Number
	TSX1-1230FV
	Application, Rating and Electrical Data
Application	Laboratory-grade long-term storage/preservation, intended-use range -35°C to -15°C
Storage Volume	12 cu.ft / 339.8 L
Factory Set Point	-30°C
Set Point Range/Adjustable Increment	-30°C to -15°C
Electrical Power / Rated Current	220-240 V, 50/60 Hz , 1 phase/2 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 / 408W
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, 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)	24.2 x 17.7 x 53.2 in / 61.5 x 45.0 x 135.0 cm
Exterior Dimensions (D x W x H)	32.1 x 23.6 x 77.4 in / 81.5 x 60.0 x 196.5 cm
Insulation	7.4cm (3") 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	145 kg / 320 lb
	Typical Performance Characteristics





Test Report Identifier Number: CT20260416171A61004	
Cabinet Load:	Unloaded
Average Cabinet Temp at -30C Cycle (C):	-30.4
Peak Variation from Setpoint (C):	+2.6 / -4.4
Uniformity (C):	1.5
Stability (C):	5.1
1-min Door Opening Recovery to -30C (min):	20
Duty Cycle at -30C (%):	95
Cycle (on/off) rate at -30C (min):	88 / 4
Energy Consumption (kw-hr/day):	2.95
Heat Rejection Rate (btu/hr):	419
Pull Down Time (to -30C) (min):	131
Warm Up Time (-30C to -10C) (min):	151
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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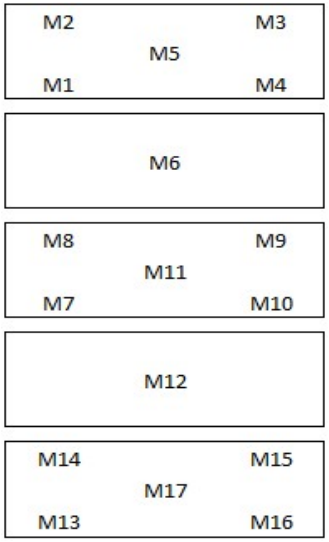
Typical Cabinet Temperature Map
Freezer 12cuft, 4 Inner-Shelves + Base, Single Outer Door

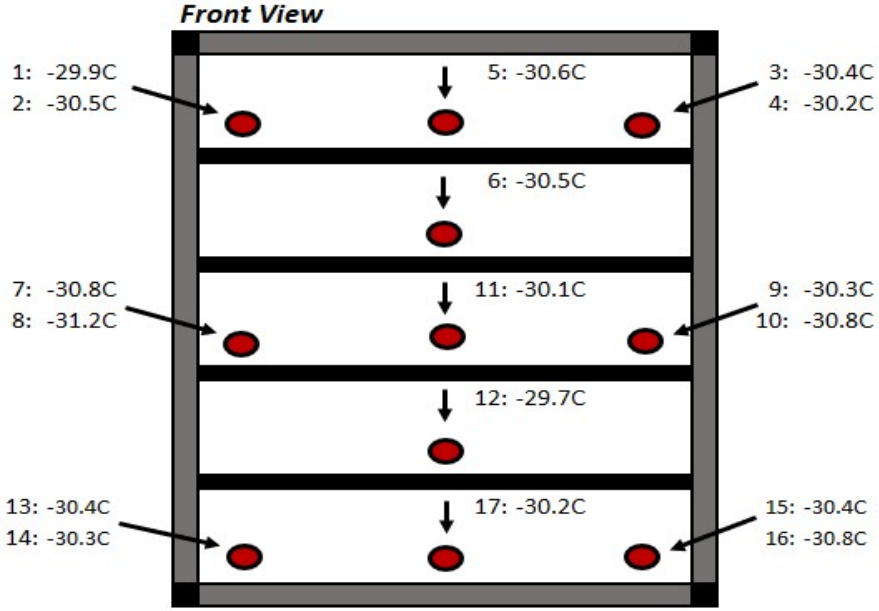
Temperatures are averages during 12 hours of run time after reaching a setpoint of -30C

Top View of Shelves

Rear

Front



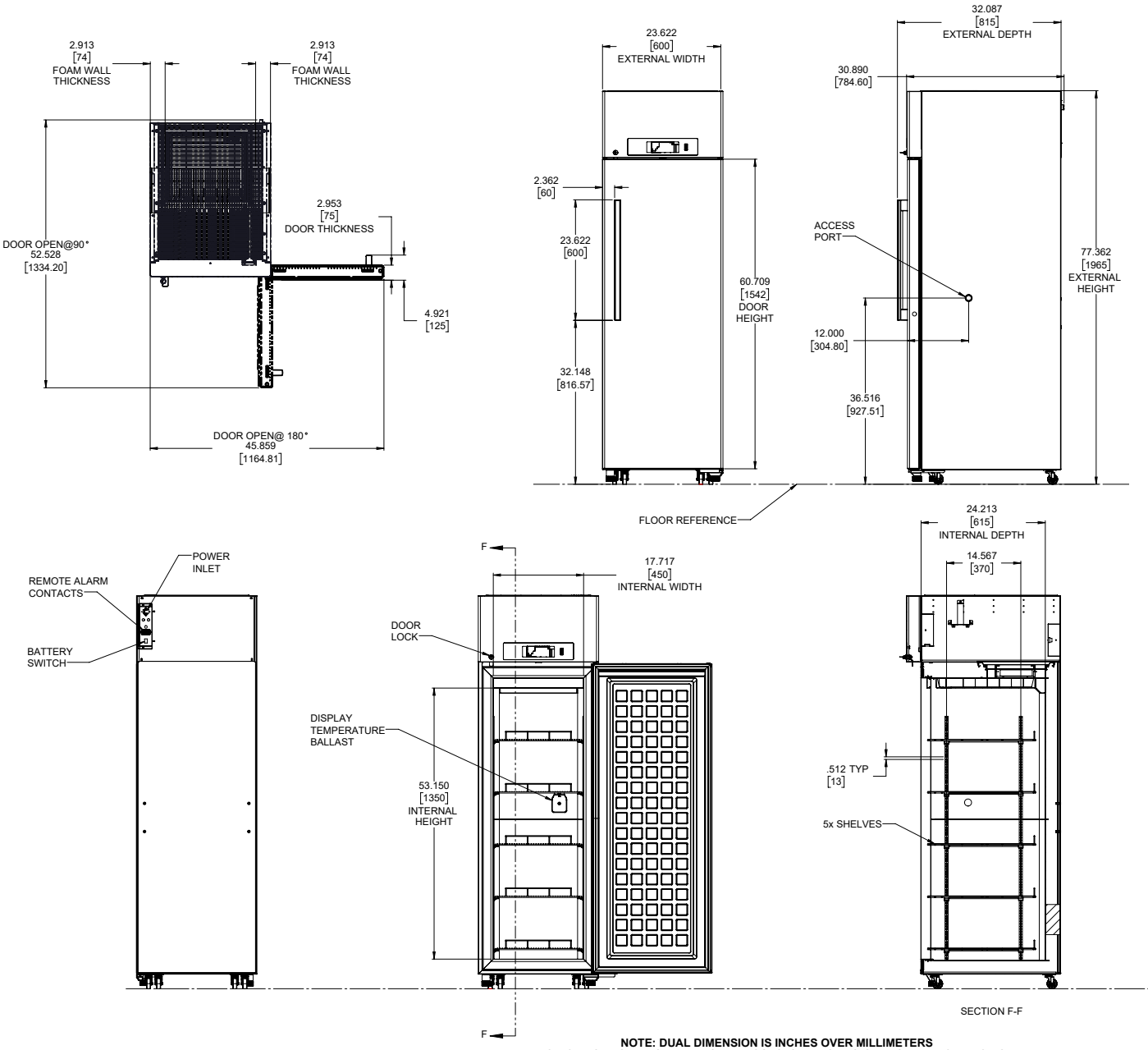


Cabinet Average: -30.4 C
Peak Variation: +2.6 C / -4.4 C

CT20260416171A61004

	M1	M2	M3	M4	M5	M6	M7	M8
Avg	-29.9	-30.5	-30.4	-30.2	-30.6	-30.5	-30.8	-31.2
Max	-27.9	-28.0	-27.6	-27.6	-27.8	-28.2	-28.7	-28.2
Min	-32.1	-33.0	-33.0	-32.6	-33.3	-33.1	-33.5	-34.4

	M9	M10	M11	M12	M13	M14	M15	M16	M17
Avg	-30.3	-30.8	-30.1	-29.7	-30.4	-30.3	-30.4	-30.8	-30.2
Max	-27.5	-27.8	-28.2	-27.8	-27.4	-27.8	-27.9	-28.3	-27.4
Min	-32.8	-33.6	-32.5	-32.2	-33.2	-33.0	-33.0	-33.6	-32.7



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

TDS_TSX1-1230FV_rA
12 cu.ft. Lab Freezer
5 Shelves
Single Outer Door
Top Mount Controls