

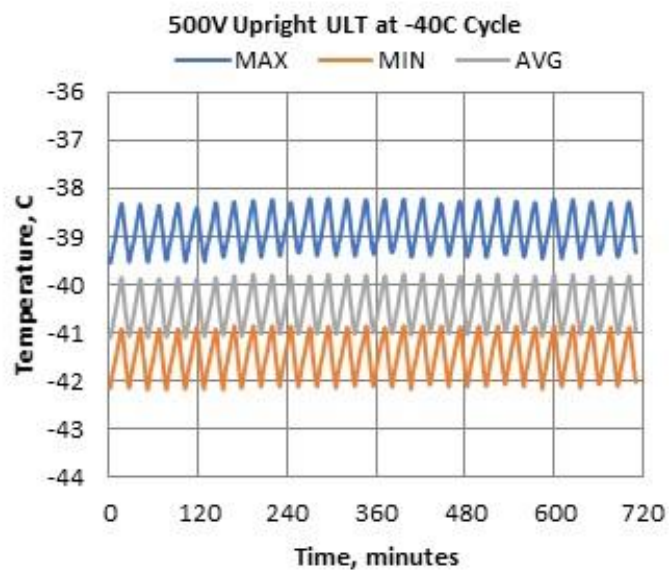
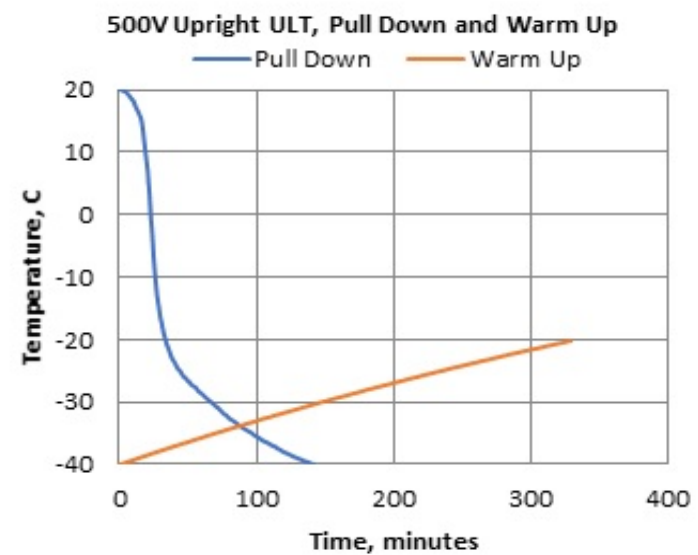


**Technical Data Sheet**  
**Thermo Scientific™ Ultra-Low Temperature Freezer**  
 Upright Model Release - 82 5ID  
 Thermo Fisher Scientific, Asheville, North Carolina

**Model Number**

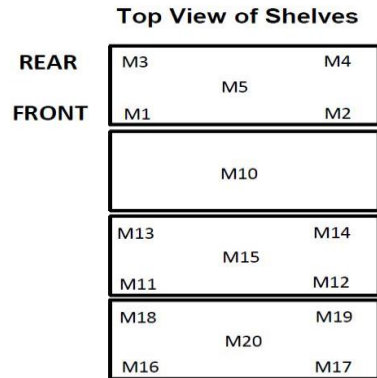
TDE50040FV  
 With optional 5 inner door configuration

Application, Rating and Electrical Data		Typical Performance Characteristics in 20 °C Ambient	
Application	Storage of General (non-flammable) Laboratory Materials		
Storage Volume	24.1 cu. ft. (682 liters), 500 Standard 2" Boxes		
Temperature Rating	-10°C to -40°C	Energy Consumption (kW-hr/day)	5.3
Electrical Power	230V, 50 Hz, 1 Phase	Heat Rejection Rate (Btu/hr)	747
Instrument Rated Current	3.4 AMP	Peak Variation from Setpoint (°C)	+1.8 / -2.2
Building Supply Rating	10.0A (min) dedicated grounded circuit		
Power Plug / Power Cord	Country Dependant plug / IEC Cords, 10 ft (3.05 m)		
Agency Listings	UL, cUL, CE	Sound (dBA)	50.7
Application Environment	Non-Corrosive, Non-Flammable, Non-Explosive	1-min Door Opening Recovery to -38.5°C (min)	22
	Indoor Use Only, Ventilated 15° C - 32° C (59° F - 90° F)	Average Uniformity at -40°C (°C)	2.1
		Average Stability at -40°C (°C)	1.4
		Pull Down Time (to -40°C) (hrs)	2.4
		Warm Up Time (-40°C to -20°C) (min)	328
Dimensions and Construction			
Interior Dimensions (H x D x W)	51.2 x 28.3 x 28.8 in. (1300 x 719 x 732 mm )		
Exterior Dimensions (H x D x W)	78 x 38.5 x 34 in. (1981 x 978 x 864 mm )		
Shipping Dimensions (H x D x W)	83.12 x 42.75 x 41.88 in. (2111 x 1086 x 1064 mm )		
Shipping Weight / Net Weight	668 lbs. (304 kg) / 574 lbs. (260 kg)		
Insulation	Vacuum Insulation Panels with High-Density Water-Blown Polyurethane Foam		
Door Seal	Silicone-Based Gasket Seal with Electrical Door Perimeter Heater		
Shelves	4 Stainless Steel Adjustable Shelves in 1" (25mm) Increments		
Shelf Capacity	Max. Capacity per Shelf: 205 lbs. (91.7 kg)		
Interior / Exterior Material	Painted Steel (Stainless Steel Option) / Painted Steel		
All-Direction Casters	Standard with Locks		
Other Options	LN2 or CO2 Backup System, Chart Recorder		
Electrical System Configuration			
Controller Level	Top		
Power Switch	(Rear) Main Circuit Breaker		
Controller Type	HIC Interface: 7-segment Display with Capacitive Touch Screen Buttons		
Setpoint Security	Yes		
Compressor Safe Guard	High Temp Cutout Switch, Current, Logic protection		
Control Sensor	Single RTD (1000 ohm Platinum RTD)		
Connectivity / Remote Outputs	RS485/4-20mA output/Dry Contacts		
Thermo Fisher Cloud	InstrumentConnect™ Remote Monitoring (compatible)		
Adjustable Warm/Cold Alarms	Fully Adjustable		
Refrigeration Configuration			
Refrigeration System	Single Stage HC Refrigeration System		
Compressor/Number	Industrial Rated, Hermetically Sealed / 1		
Compressor Capacity*	559 W		
Condenser Type	Enhanced Tube and Fin with Forced-Air Cooling		
Expansion Device	Capillary Tube		
Evaporator Type	Enhanced Cold Wall Design		
Defrost Method	Manual Defrost		
Refrigerant	R290		
Environmental Effects	GWP: 3 (R290)		
	ODP: 0 (R290)		
Flammable	Yes		

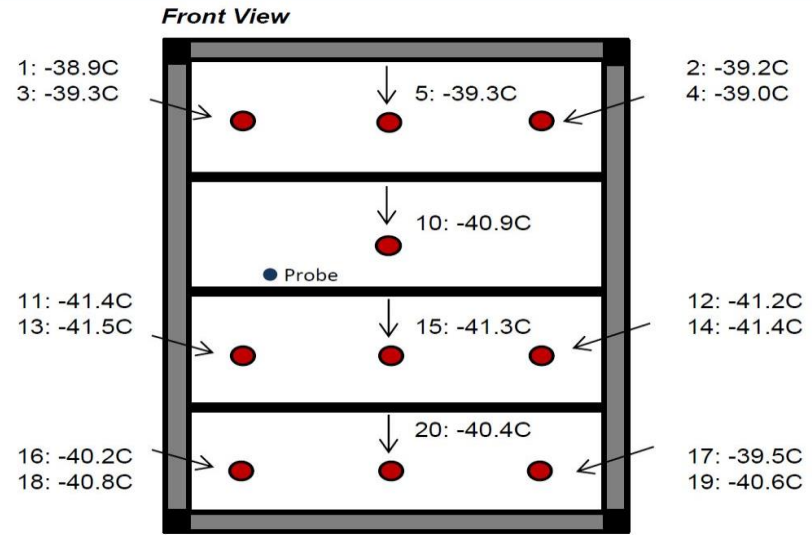


- 1) Performance is nominal and individual units may vary.
- 2) Freezer performance will differ due to product amount, product size and operating conditions.
- 3) Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept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

\* Manufacturer measured compressor capacity taken at standard -35°C/45°C (Evap/Cond) condition.



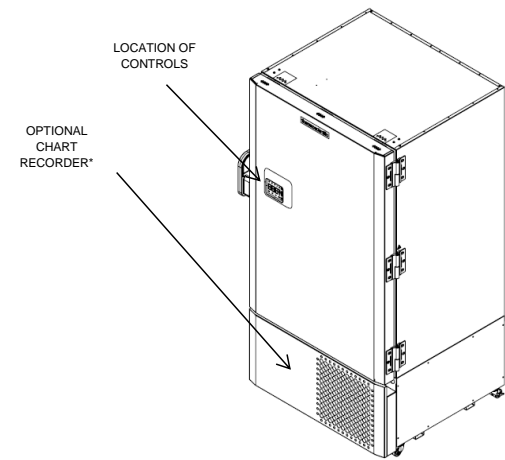
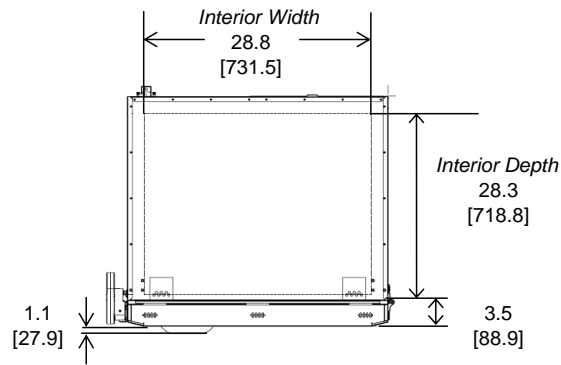
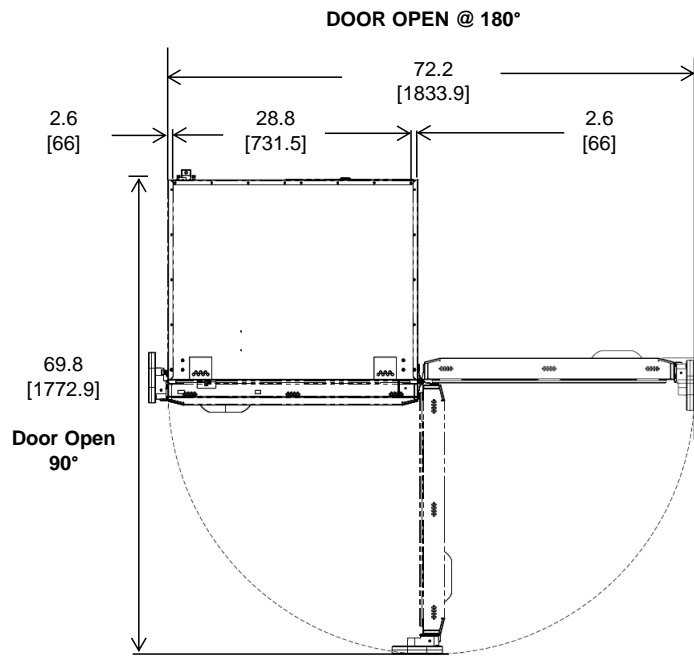
**Cabinet Average:** -40.4 C  
**Probe Average:** -42.0 C  
**Peak Variation:** +1.8 C / -2.2 C



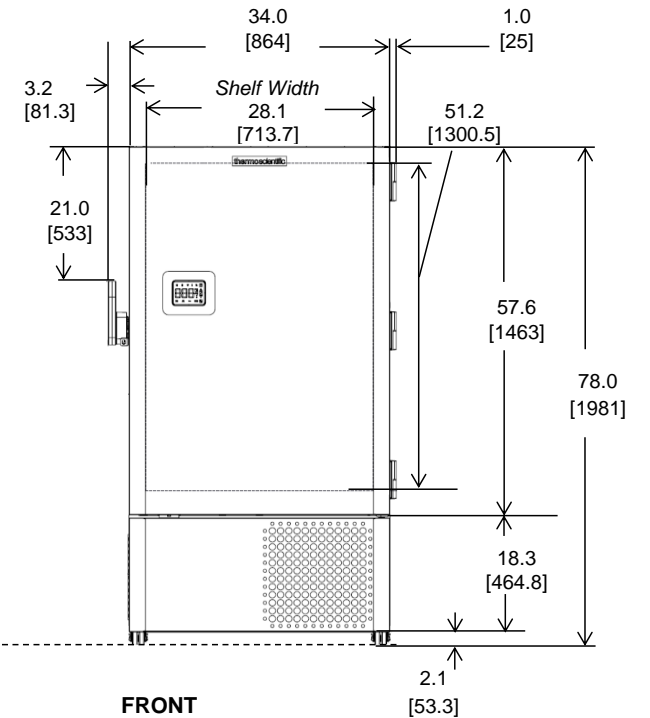
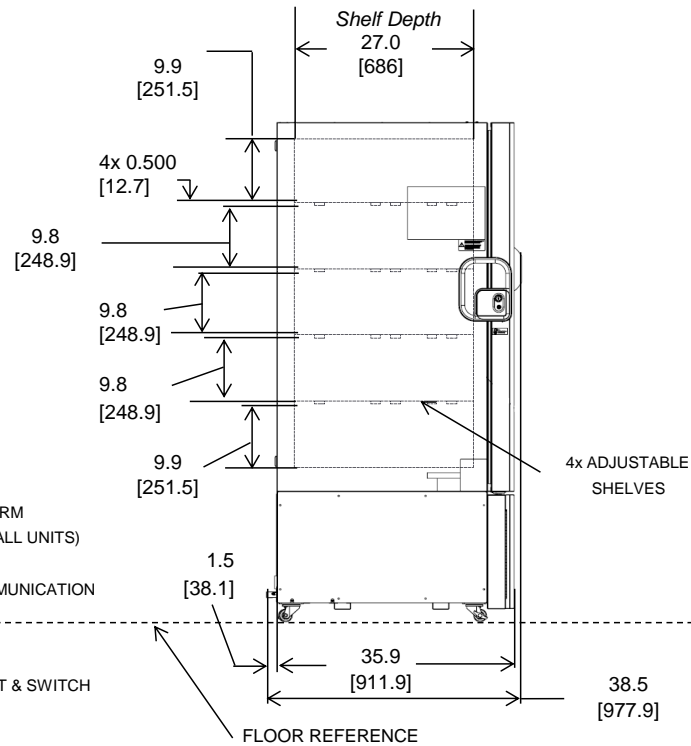
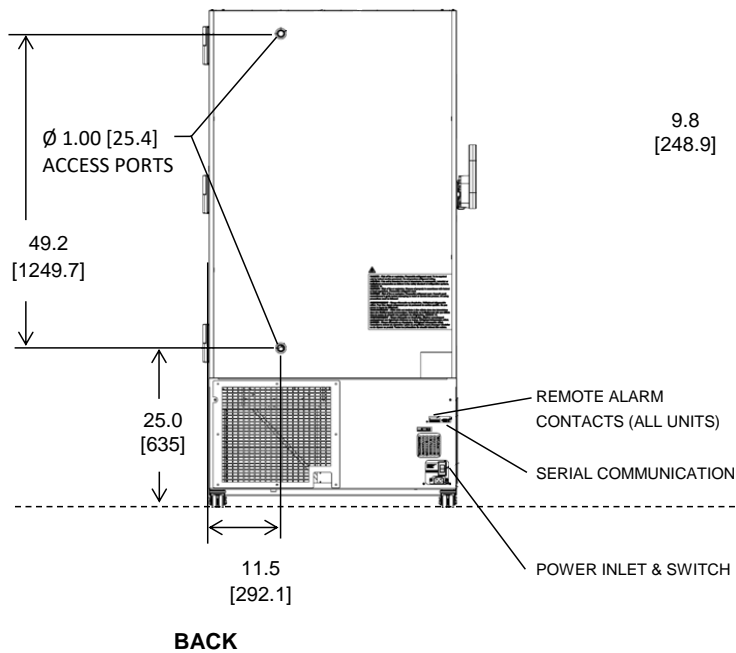
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	M1	M2	M3	M4	M5	M10	M11	M12	M13
Avg	-38.9	-39.2	-39.3	-39	-39.3	-40.9	-41.4	-41.2	-41.5
Max	-38.2	-38.6	-38.6	-38.2	-38.6	-40.1	-40.9	-40.6	-40.7
Min	-39.6	-39.9	-40	-39.9	-40	-41.6	-42	-41.8	-42.2

	M14	M15	M16	M17	M18	M19	M20
Avg	-41.4	-41.3	-40.2	-39.5	-40.8	-40.6	-40.4
Max	-40.7	-40.7	-39.7	-38.9	-40	-39.7	-39.8
Min	-42.2	-41.9	-40.7	-40.3	-41.6	-41.4	-41



\*Chart recorders are stand alone on 300/400 models  
 \*Backup systems are stand alone on 300 models.



**NOTE: DUAL DIMENSION IS INCH OVER METRIC**

DO NOT USE FOR ENGINEERING PURPOSES. SUBJECT TO CHANGE WITHOUT NOTICE.

**thermo**  
scientific

**24.1 cuft Upright Freezer**  
 5 Inner Doors  
 Single Outer Door  
 Top Mount Controls