

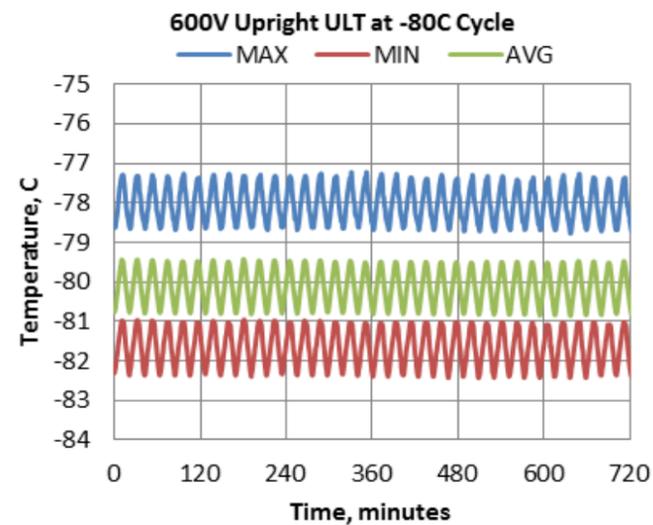
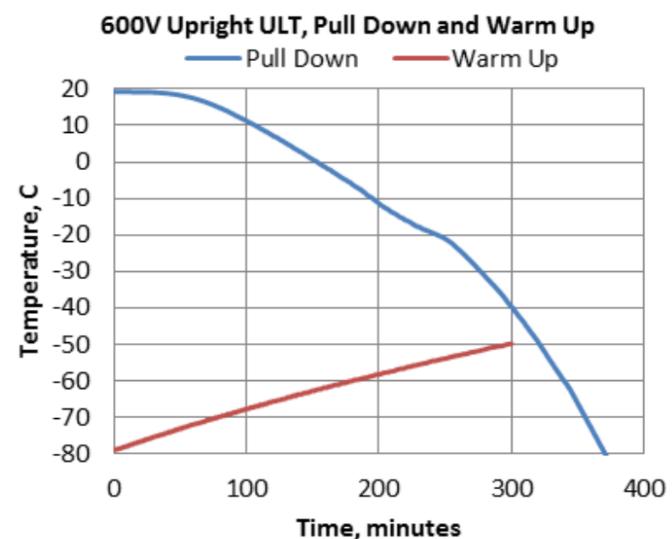


Technical Data Sheet
Isotemp™ Ultra-Low Temperature Freezer
 Upright Model Release - 81
 Thermo Fisher Scientific, Asheville, North Carolina

Model Number

IUE60086FV

Application, Rating and Electrical Data		Typical Performance Characteristics in 20 °C Ambient	
Application	Storage of General (non-flammable) Laboratory Materials		
Storage Volume	28.8 cu. ft. (816 liters), 600 Standard 2" Boxes		
Temperature Rating	-50°C to -86°C	Energy Consumption (kW-hr/day)	14.6
Electrical Power	230V, 50 Hz, 1 Phase	Heat Rejection Rate (Btu/hr)	2080
Instrument Rated Current	6.1 AMP	Peak Variation from Setpoint (°C)	+2.8 / -2.4
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)	50.5
Application Environment	Non-Corrosive, Non-Flammable, Non-Explosive	1-min Door Opening Recovery to -75°C (min)	24
	Indoor Use Only, Ventilated 15° C - 32° C (59° F - 90° F)	Average Uniformity at -80°C (°C)	3.6
		Average Stability at -80°C (°C)	1.5
		Pull Down Time (to -80°C) (hrs)	6.2
		Warm Up Time (-80°C to -50°C) (min)	300
Dimensions and Construction			
Interior Dimensions (H x D x W)	51.2 x 28.3 x 34.4 in. (1300 x 719 x 874 mm)		
Exterior Dimensions (H x D x W)	78 x 38.6 x 43.8 in. (1981 x 980 x 1113 mm)		
Shipping Dimensions	83.12 x 42.75 x 47.48 in. (2111 x 1086 x 1206 mm)		
Shipping Weight / Net Weight	820 lbs. (372 kg) / 709 lbs. (322 kg)		
Insulation	Vacuum Insulation Panels with High-Density Water-Blown Polyurethane Foam		
Door Seal	Silicone-Based Gasket Seal with Electrical Door Perimeter Heater		
Shelves	3 Stainless Steel Adjustable Shelves in 1" (25mm) Increments		
Shelf Capacity	Max. Capacity per Shelf: 245 lbs. (110 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	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		
Adjustable Warm/Cold Alarms	Fully Adjustable		
Refrigeration Configuration			
Refrigeration System	Two Stage Cascade System		
Compressor/Number	Industrial Rated, Hermetically Sealed / 2		
Compressor Capacity*	559 W		
Condenser Type	Enhanced Micro-Channel and Forced-Air Cooled		
Expansion Device	Capillary Tube		
Evaporator Type	Enhanced Cold Wall Design		
Defrost Method	Manual Defrost		
Refrigerant (1st/2nd Stage)	R290 / R170+R290 Mix		
Environmental Effects	GWP: 3 (R290) , 6 (R170) ODP: 0 (R290); 0 (R170)		
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. Fisher 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.

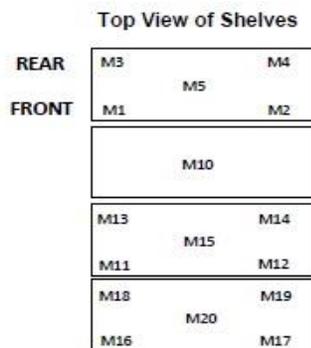
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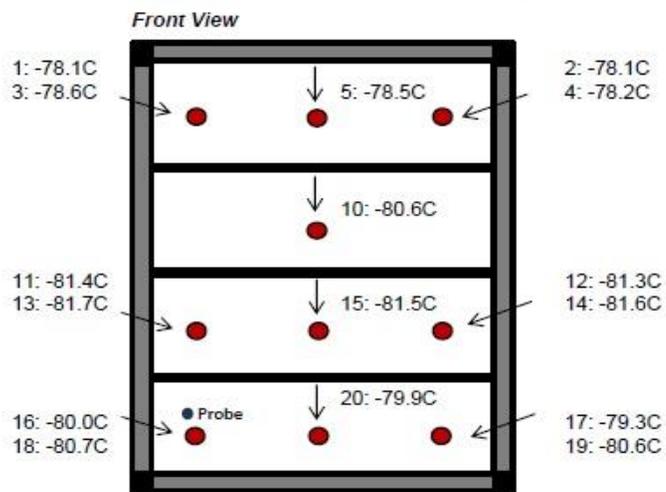


Typical Cabinet Temperature Map
 ULT 600, 3 Inner-Shelves + Base, Single Outer Door

Temperatures are averages during > 12 cycles after reaching a setpoint of -80C



Cabinet Average: -80.1 C
 Probe Average: -80.0 C
 Peak Variation: +2.8 C / -2.4 C



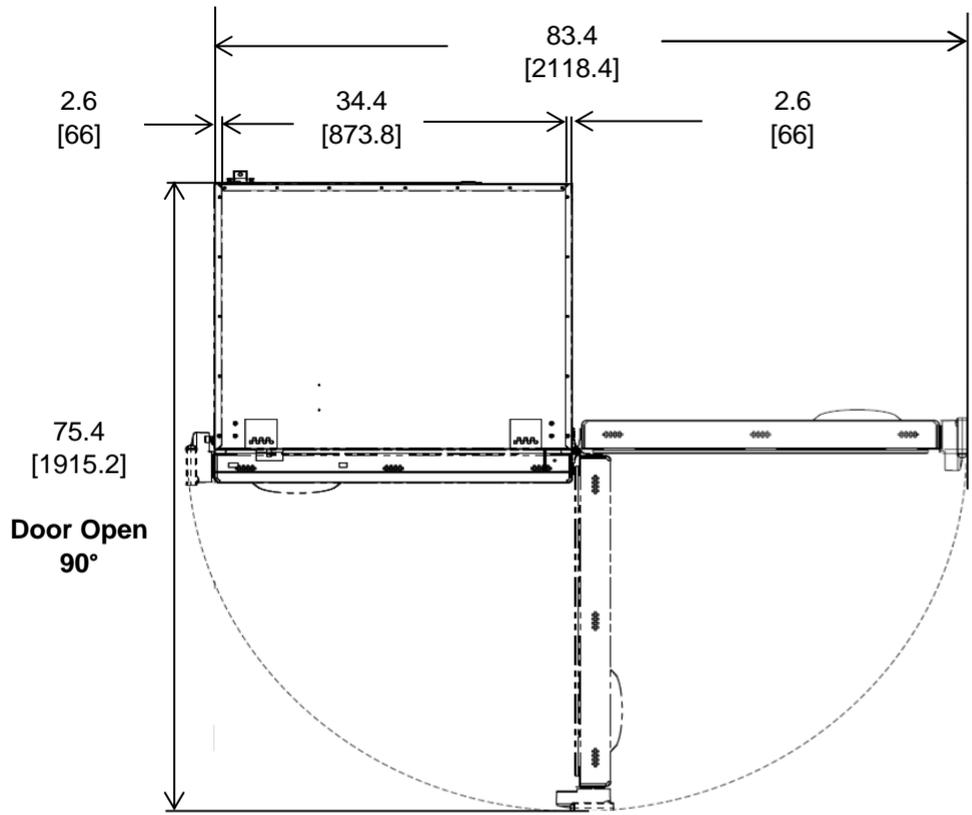
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	M1	M2	M3	M4	M5	M10	M11	M12	M13
Avg	-78.1	-78.1	-78.6	-78.2	-78.5	-80.6	-81.4	-81.3	-81.7
Max	-77.4	-77.3	-77.6	-77.2	-77.6	-79.8	-80.7	-80.7	-81
Min	-78.8	-78.9	-79.5	-78.9	-79.2	-81.4	-82.1	-82	-82.4

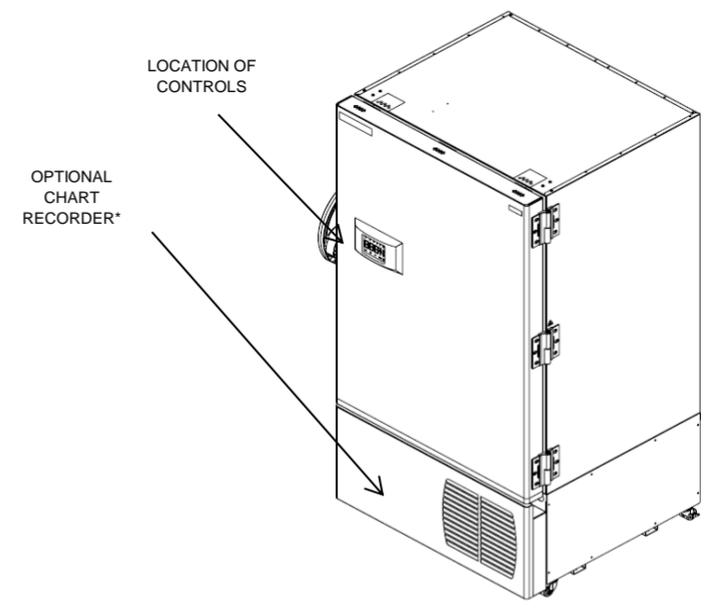
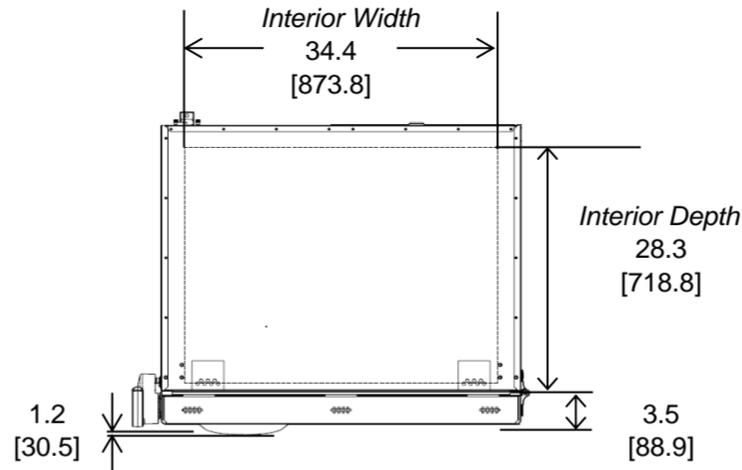
	M14	M15	M16	M17	M18	M19	M20
Avg	-81.6	-81.5	-80	-79.3	-80.7	-80.6	-79.9
Max	-80.9	-80.9	-79.5	-78.7	-79.9	-79.9	-79.4
Min	-82.3	-82.2	-80.8	-80.1	-81.5	-81.5	-80.5

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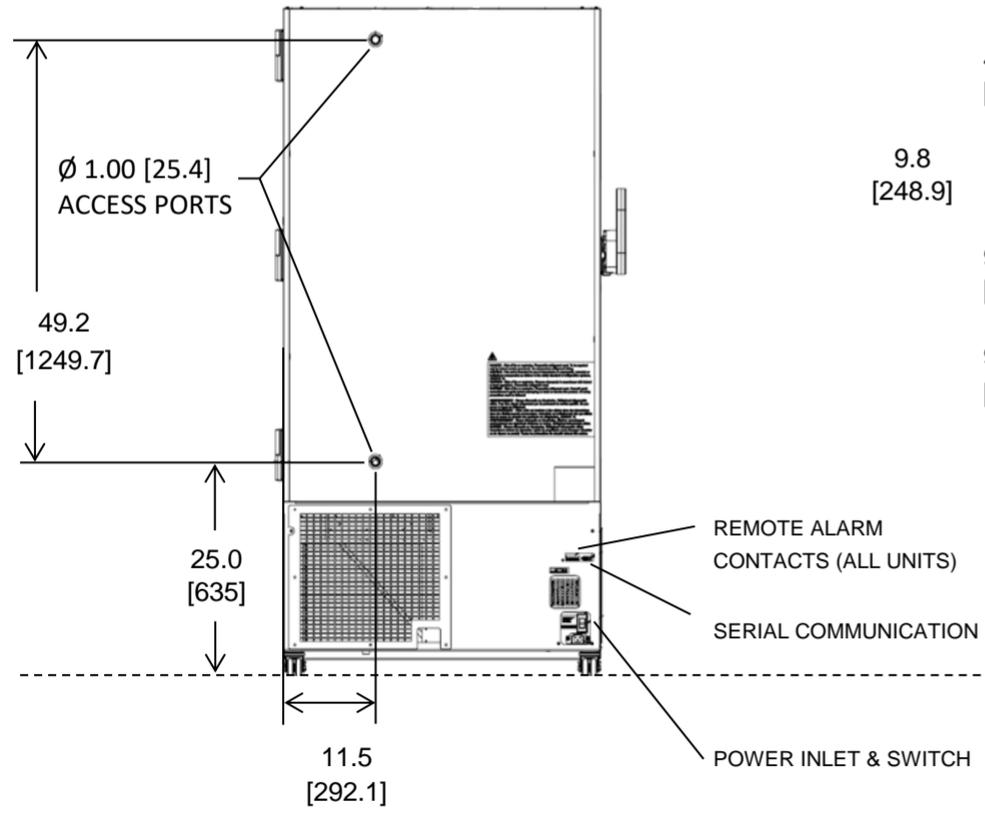
DOOR OPEN @ 180°



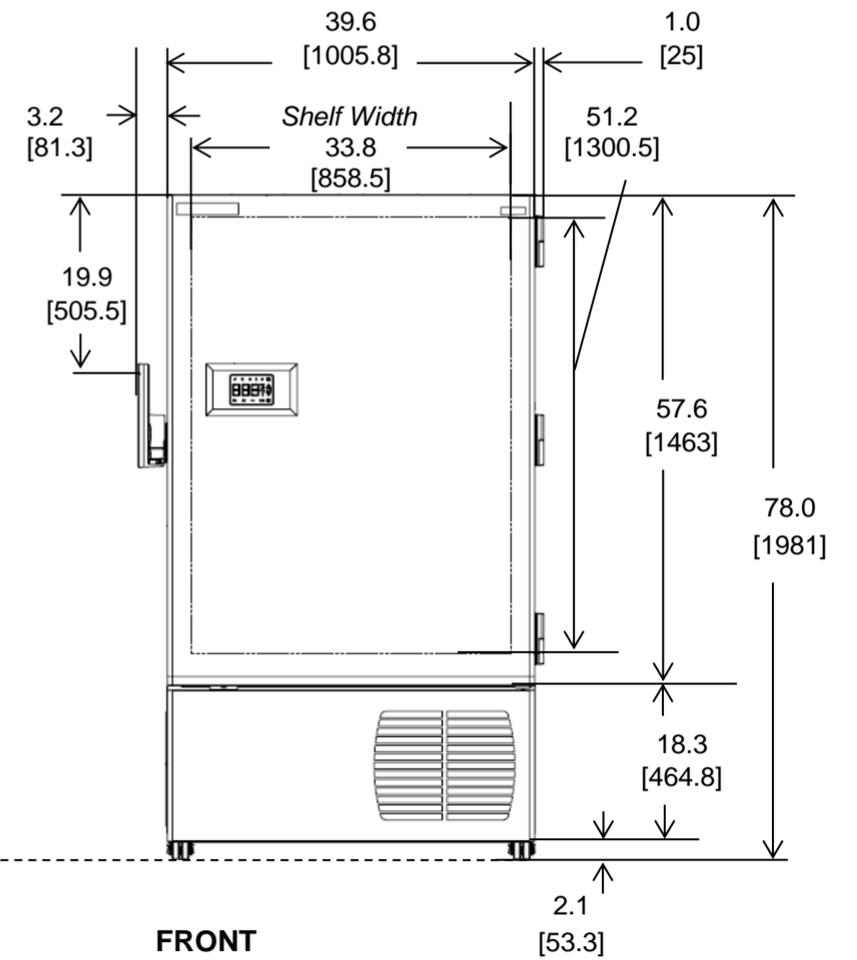
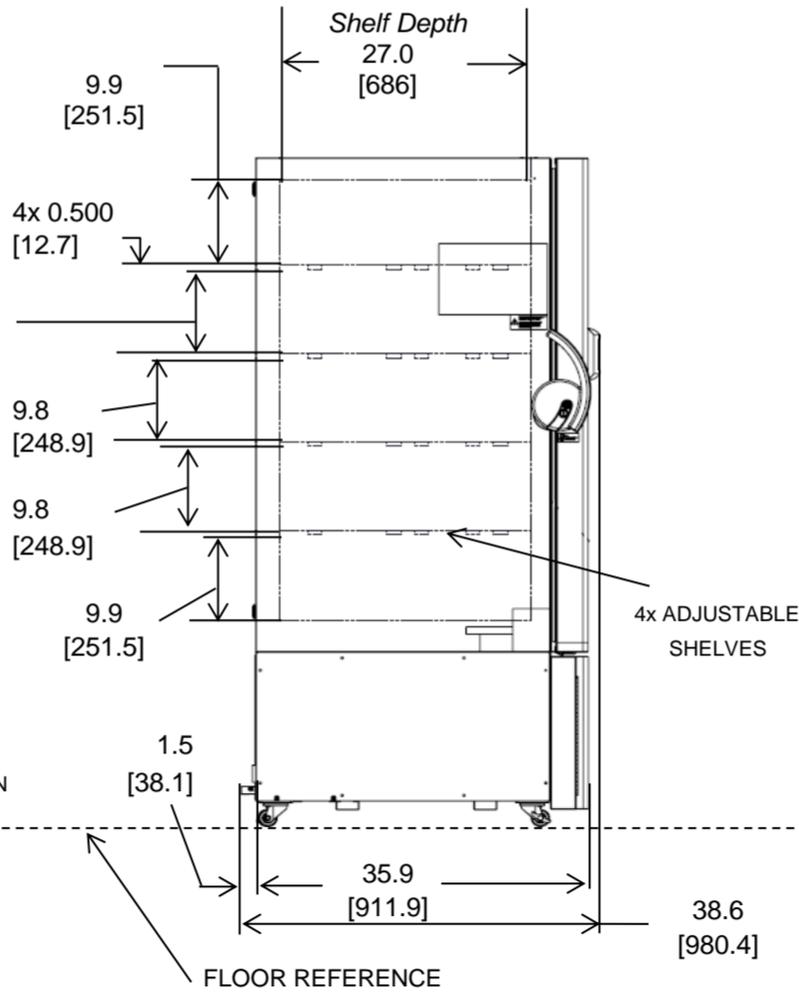
Door Open 90°



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



BACK



FRONT

NOTE: DUAL DIMENSION IS INCH OVER METRIC

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



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