

Technical Data Sheet High Performance Enzyme Freezer

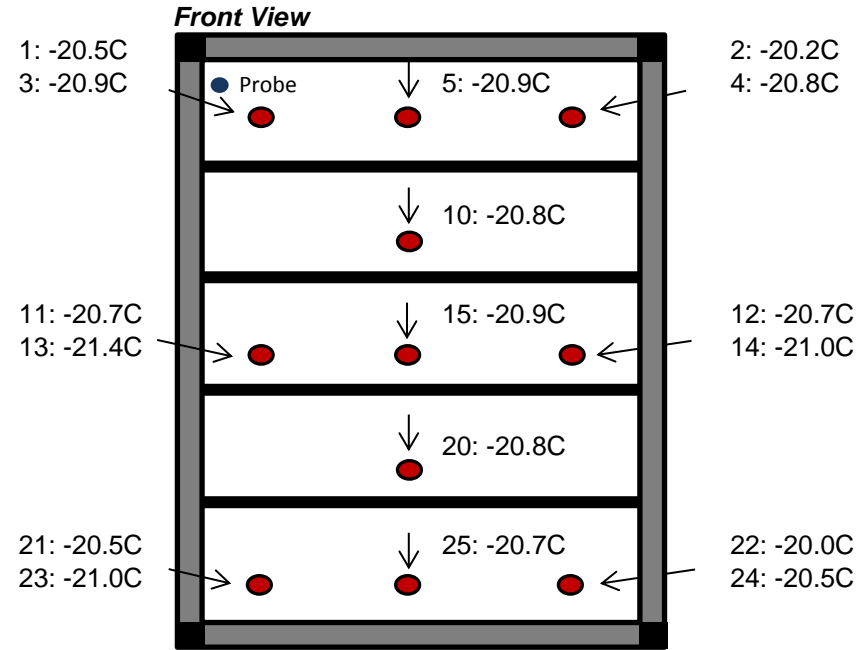
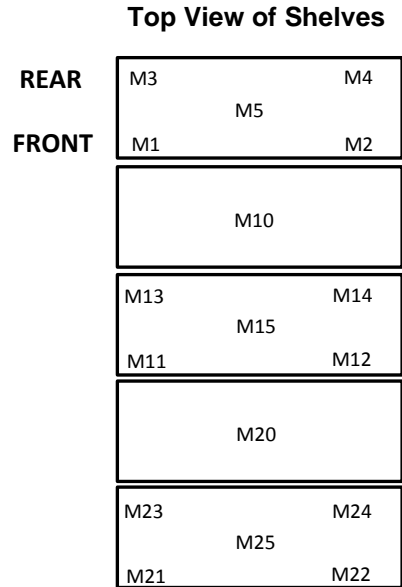
Revision-0

Thermo Fisher Scientific, Asheville, North Carolina

Specifications	Catalog number	TSX3020EV
	Model Number	TSX3020EV
	Application, Rating and Electrical Data	
	Application	Storage of Enzyme Materials
Storage Volume	827 Liters / 29.2 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 Hz 1 Phase / 3.0A	
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 / 398W	
Condenser Type/Number	Enhanced Finned-Tube 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	R290,145gms,GWP:3 ODP:0 / 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)	
Connectivity / Remote Outputs	Remote alarm contacts, RS485 output and 4-20 mA output (optional)	
Adjustable Warm / Cold Alarms	Fully Adjustable	
Power Failure Alarm	Standard	
Electronic Chart Recorder	Optional	
Dimensions and Construction		
Interior Dimensions (D x W x H)	72.3 cm x 76.2 cm x 147.3 cm (28.5" x 30.0" x 58.0")	
Exterior Dimensions (D x W x H)	99.0 cm x 86.4 cm x 199.4 cm (38.9" x 34.0" x 78.5")	
Insulation	5.08 cm (2.0") High-Density Water-Blown Polyurethane Foam	
Door Perimeter heater	Yes	
Shelves / Load Limit	(9) Adjustable Wire Shelves / Max. Cap. per Shelf: 45 kg (100 lbs.) / Max. Total Cap.: 340 kg (750 lbs.)	
All-Direction Casters	Standard with Locks	
Shipping Weight	251 kg / 552 lb	

Typical Performance Characteristics		
		<p>Test Unit Series Number or MSO Number: 19758-B-8</p> <p>Cabinet Load: Unloaded</p> <p>Average Cabinet Temp at -20C Cycle (C): -20.7</p> <p>Peak Variation from Setpoint (C): +0.9 / -2.3</p> <p>Uniformity (C): 1.3</p> <p>Stability (C): 1.9</p> <p>1-min Door Opening Recovery to -20C (min): 17</p> <p>Duty Cycle at -20C (%): 50</p> <p>Cycle (on/off) rate at -20C (min): 11 / 11</p> <p>Energy Consumption (kw-hr/day): 4.3</p> <p>Heat Rejection Rate (btu/hr): 607</p> <p>Pull Down Time (to -20C) (min): 108</p> <p>Warm Up Time (-20C to 0C) (min): 169</p> <p>Sound (dBA): 52</p>

- 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.



19758-B-8

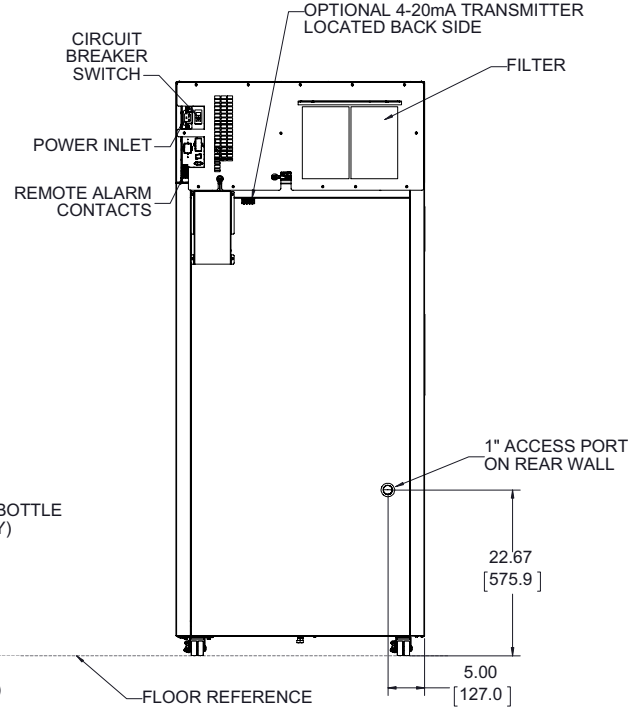
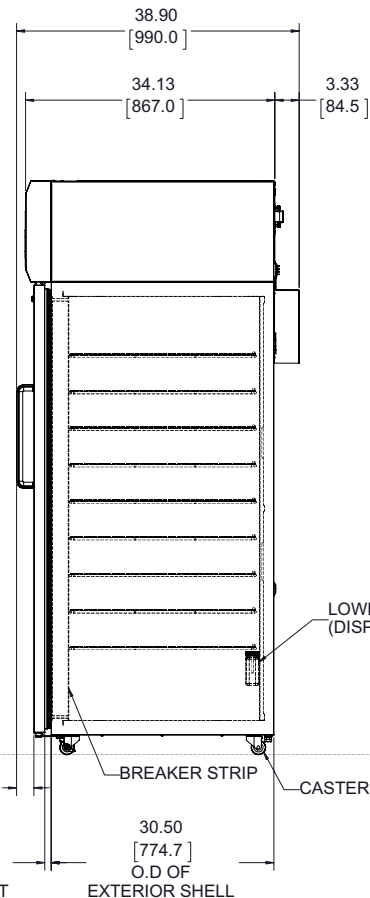
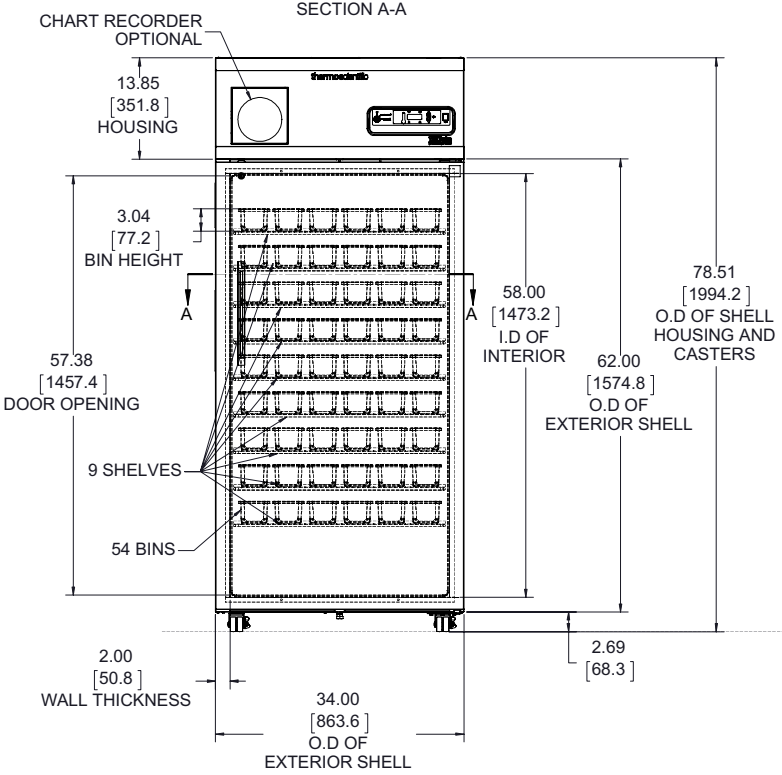
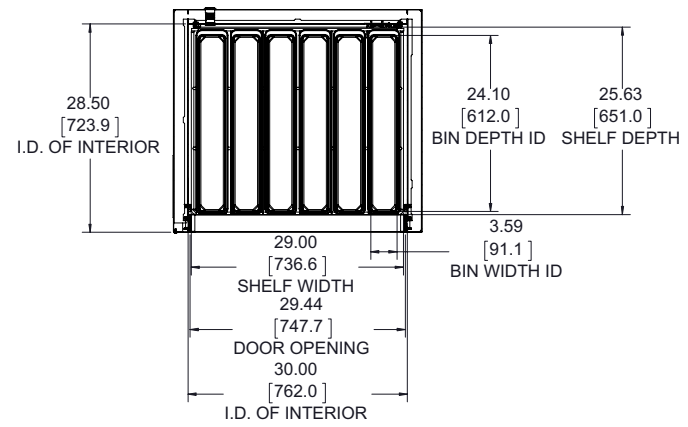
Cabinet Average: -20.7 C
Probe Average: -23.5 C
Peak Variation: +0.9 C / -2.3 C

	M1	M2	M3	M4	M5	M10	M11	M12	M13
Avg	-20.5	-20.2	-20.9	-20.8	-20.9	-20.8	-20.7	-20.7	-21.4
Max	-19.6	-19.4	-19.8	-19.7	-19.6	-19.9	-19.9	-19.9	-20.5
Min	-21.4	-20.9	-22	-21.7	-21.9	-21.7	-21.5	-21.5	-22.3

	M14	M15	M20	M21	M22	M23	M24	M25
Avg	-21	-20.9	-20.8	-20.5	-20	-21	-20.5	-20.7
Max	-20.1	-20.1	-20.1	-19.4	-19.1	-19.8	-19.6	-19.7
Min	-21.9	-21.6	-21.4	-21.5	-21.1	-22.3	-21.5	-21.8



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



30 cu. ft. Enzyme Freezer
9 Shelves And 54 Bins
Single Outer Door
Top Mount Controls

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

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