

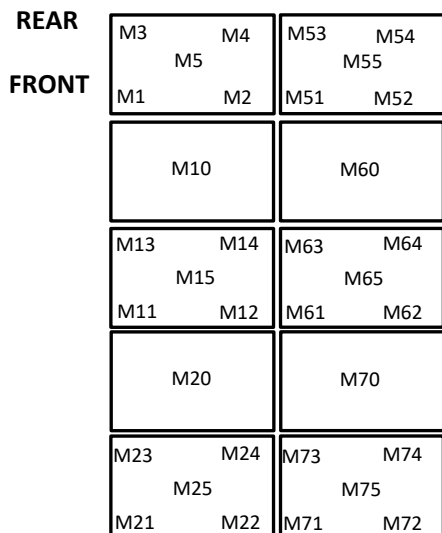
Specifications	Model Number
	TSG1500FESCW
Application, Rating and Electrical Data	
Application	Storage of General (non-flammable) Laboratory Materials
Storage Volume	1355Liters /47.8 Cubic Feet
Factory Set Point	-20 °C
Set Point / Increment	-20 °C / 0.1 °C
Electrical Power / Rated Current	230V 50 Hz 1 Phase / 1.6A
Building Supply Rating	13A 250V
Power Plug/Power Cord Length	13 Amp 250V / 4 Meters (13 feet)
Agency Listings	CE
Standards and directives	2006/42/EC, 2014/30/EU, 2014/35/EU, 2011/65/UE, 2015/863/EU & 2012/19/EU
Electromagnetic Compatibility	Emissions (Class A), Immunity (Industrial Environment)
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 (59° F to 90° F)
Refrigeration Configuration	
Refrigeration System	Vapor compression system
Compressor / Number / Capacity	Single speed / 1 / 936W
Condenser Type/Number	Forced-Air Cooled Finned-Tube Coil Heat Exchanger / 1
Expansion Device	Capillary Tube
Evaporator Type / Defrost Method	Forced Air Finned-Tube Coil Heat Exchanger / Automatic Defrost
Refrigerant Charge / Flammability	R290,140gms,GWP:3 ODP:0 / Flammable
Controller/Electrical System Configuration and Features	
Controller Level	Eye Level
Power Switch	On the Controller Main Screen
Controller Type	Electronic Controller with LCD display
Setpoint Security / Programmable	Yes / Yes
Compressor Safe Guard	Overload Protection (OLP)
Control Sensor	NTC Probe
Connectivity / Remote OutputsTerminals	Dry Contact (NO and NC)
Adjustable Warm / Cold Alarms	Fully Adjustable
Power Failure Alarm	Acoustic and Visual
Electronic Chart Recorder	Not Provided
Dimensions and Construction	
Interior Dimensions (H x D x W)	1510 mm x 690 mm x 1300 mm (59.4" x 27.2" x 51.2")
Exterior Dimensions (H x D x W)	2082 mm x 837 mm x1440 mm (82" x 33" x 56.7")
Insulation	Polyurethane Foam 7cms (2.75")
Door Perimeter heater	Yes
Shelves / Load Limit	8 Shelves / 30kg (66 lbs) per Shelf
Casters	2 Lockable Castors at the front & 2 Fixed Castors at the rear
Crated Shipping Weight	263kgs / 579.8 lbs
Typical Performance Characteristics	
<p>Pull Down and Warm Up</p>	<p>At -20C Cycle</p>
Test Unit Series Number or MSO Number: 20297-A-5-2 Cabinet Load: Unloaded Average Cabinet Temp (C): -20.38 Peak Variation from Setpoint (C): -3.38/5.11 Uniformity (C): 2.72 Stability (C): 5.81 1-min Door Opening Recovery(min): 21 Cycle on Time(%): 44 Cycle (on/off) Time (min): 5/6.25 Energy Consumption (kw-hr/day): 11.11 Heat Rejection Rate (btu/hr): 1580 Pull Down Time to setpoint(Min): 88 Warm Up Time to 0°C (min): 129 Sound (dBA): 52.1	
<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.</p>	
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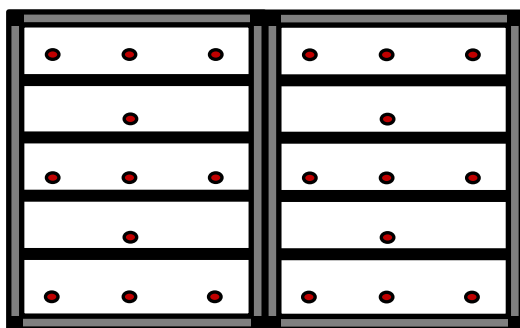
Typical Cabinet Temperature Map
Freezer 48cuft , 4 Inner-Shelves + Base, 2 Outer Doors

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

Top View of Shelves



Front View



20297-A-5-2

Cabinet Average: -20.4 C
Probe Average: -17.7 C
Peak Variation: +2.4 C / -3.4 C

	M1	M2	M3	M4	M5	M10
Avg	-20.6	-20.3	-20	-20.5	-19.8	-20.2
Max	-18.6	-18.2	-18.2	-18.2	-18	-19
Min	-22.8	-22.8	-21.8	-22.7	-21.4	-21.3

	M11	M12	M13	M14	M15	M20
Avg	-19.9	-20.2	-20.6	-20.6	-20.1	-20.1
Max	-18.6	-18.9	-19.2	-19	-19	-19
Min	-21.8	-22	-22.2	-22	-21.1	-21.2

	M21	M22	M23	M24	M25
Avg	-19.7	-19.1	-20.5	-21.5	-20.6
Max	-18.3	-17.6	-19.2	-19.8	-19.1
Min	-21.4	-20.2	-22	-23.1	-22.2

	M51	M52	M53	M54	M55	M60
Avg	-20.8	-20.5	-20.9	-20.7	-20.3	-20.8
Max	-18.3	-18	-18.6	-18.5	-18.3	-19.6
Min	-23.4	-23.1	-23	-22.7	-22.2	-22.2

	M61	M62	M63	M64	M65	M70
Avg	-21	-20.4	-21.2	-21.3	-20.9	-20.8
Max	-19.3	-18.4	-19.7	-19.8	-19.6	-19.6
Min	-23	-22.1	-22.8	-23	-22.2	-22.1

	M71	M72	M73	M74	M75
Avg	-19.2	-19.7	-21.3	-20.4	-20.7
Max	-17.8	-18.3	-19.6	-19	-19.2
Min	-20.6	-21.5	-22.9	-21.8	-22.3

