



Technical Data Sheet

High Performance Chromatography Refrigerator

Revision-2

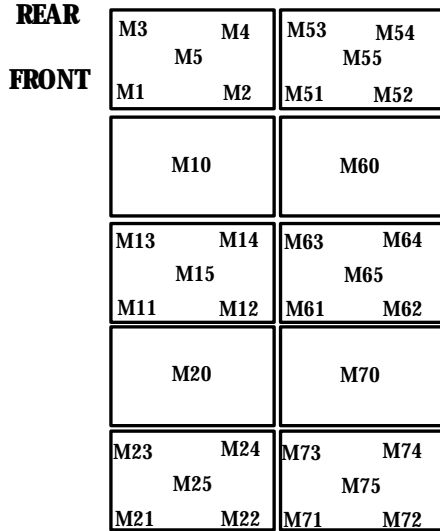
Thermo Fisher Scientific, Asheville, North Carolina

Specifications	Catalog number																										
	TSX4505CV																										
Model Number	TSX4505CV																										
Application, Rating and Electrical Data																											
Application	Chromatography (non-flammable) Refrigerator																										
Storage Volume	1297 Liters / 45.8 Cubic Feet																										
Factory Set Point	5°C																										
Set Point Range / Adjustable Increment	3°C to 7°C / 0.1°C																										
Electrical Power / Rated Current	208-230 V 50 Hz 1 Phase / 4.2A (Unit) / 4A (Internal Outlet)																										
Building Supply Rating	15A dedicated grounded non-GFCI circuit. Protected by circuit breaker rated for inductive loads																										
Power Plug / Power Cord Length	(2) 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	Forced Air Evaporator Coil / Automatic Defrost																										
Refrigerant Charge / Flammability	R290, 145 gms, 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, Automatic Defrost System																										
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)	66.0 cm x 133.4 cm x 147.3 cm (26.0" x 52.5" x 58.0")																										
Exterior Dimensions (D x W x H)	93.1 cm x 143.5 cm x 199.4 cm (36.6" x 56.5" x 78.5")																										
Insulation	5.08 cm (2.0") High-Density Water-Blown Polyurethane Foam																										
Door Perimeter Heater	Yes																										
Shelves / Load Limit	(2) Adjustable Half Wire Shelves / 22.5 kg (50 lbs) per Shelf and (4) Adjustable Wire Shelves / 45 kg (100 lbs) per Shelf																										
All-Direction Casters	Standard With Locks																										
Shipping Weight	272 kg / 600 lb																										
Typical Performance Characteristics																											
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>45 cuft Upright Refrigerator, Pull Down and Warm Up</p> </div> <div style="width: 30%;"> <p>45 cuft Upright Refrigerator at 5C Cycle</p> </div> <div style="width: 30%;"> <p>Test Unit Series Number or MSO Number: 19585-B30</p> <table border="0" style="width: 100%;"> <tr> <td>Cabinet Load:</td> <td>Unloaded</td> </tr> <tr> <td>Average Cabinet Temp at 5C Cycle (C):</td> <td>5</td> </tr> <tr> <td>Peak Variation from Setpoint (C):</td> <td>+1.8 / -2.2</td> </tr> <tr> <td>Uniformity (C):</td> <td>1.1</td> </tr> <tr> <td>Stability (C):</td> <td>2.9</td> </tr> <tr> <td>1-min Door Opening Recovery to 5C (min):</td> <td>4</td> </tr> <tr> <td>Duty Cycle at 5C (%):</td> <td>33</td> </tr> <tr> <td>Cycle (on/off) rate at 5C (min):</td> <td>3 / 6</td> </tr> <tr> <td>Energy Consumption (kw-hr/day):</td> <td>4.5</td> </tr> <tr> <td>Heat Rejection Rate (btu/hr):</td> <td>643</td> </tr> <tr> <td>Pull Down Time (to 5C) (min):</td> <td>16</td> </tr> <tr> <td>Warm Up Time (5C to 15C) (min):</td> <td>176</td> </tr> <tr> <td>Sound (dBA):</td> <td>52</td> </tr> </table> </div> </div>		Cabinet Load:	Unloaded	Average Cabinet Temp at 5C Cycle (C):	5	Peak Variation from Setpoint (C):	+1.8 / -2.2	Uniformity (C):	1.1	Stability (C):	2.9	1-min Door Opening Recovery to 5C (min):	4	Duty Cycle at 5C (%):	33	Cycle (on/off) rate at 5C (min):	3 / 6	Energy Consumption (kw-hr/day):	4.5	Heat Rejection Rate (btu/hr):	643	Pull Down Time (to 5C) (min):	16	Warm Up Time (5C to 15C) (min):	176	Sound (dBA):	52
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<p>1) Performance is nominal and individual units may vary.</p> <p>2) Product performance will differ due to product amount, product size and operating conditions.</p> <p>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>																											

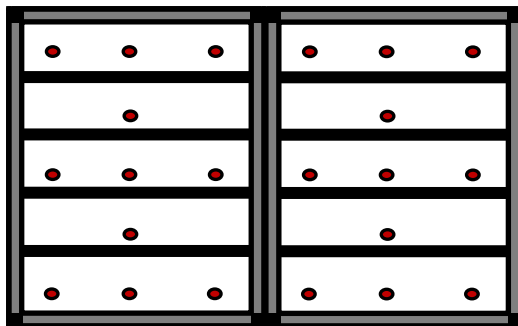
Typical Cabinet Temperature Map
Refrigerator 45cuft , 8 Inner-Shelves + Base, 2 Outer Doors

Temperatures are averages during > 20
cycles after reaching a setpoint of 5C

Top View of Shelves



Front View



19585-B30

Cabinet Average: 5.0 C
Probe Average: 5.6 C
Peak Variation: +1.8 C / -2.2 C

	M1	M2	M3	M4	M5	M10
Avg	5.5	5.1	5.1	4.9	4.9	4.9
Max	6.6	6.4	6.4	6.4	6.4	6.4
Min	4.4	3.7	3.8	3.3	3.3	3.4

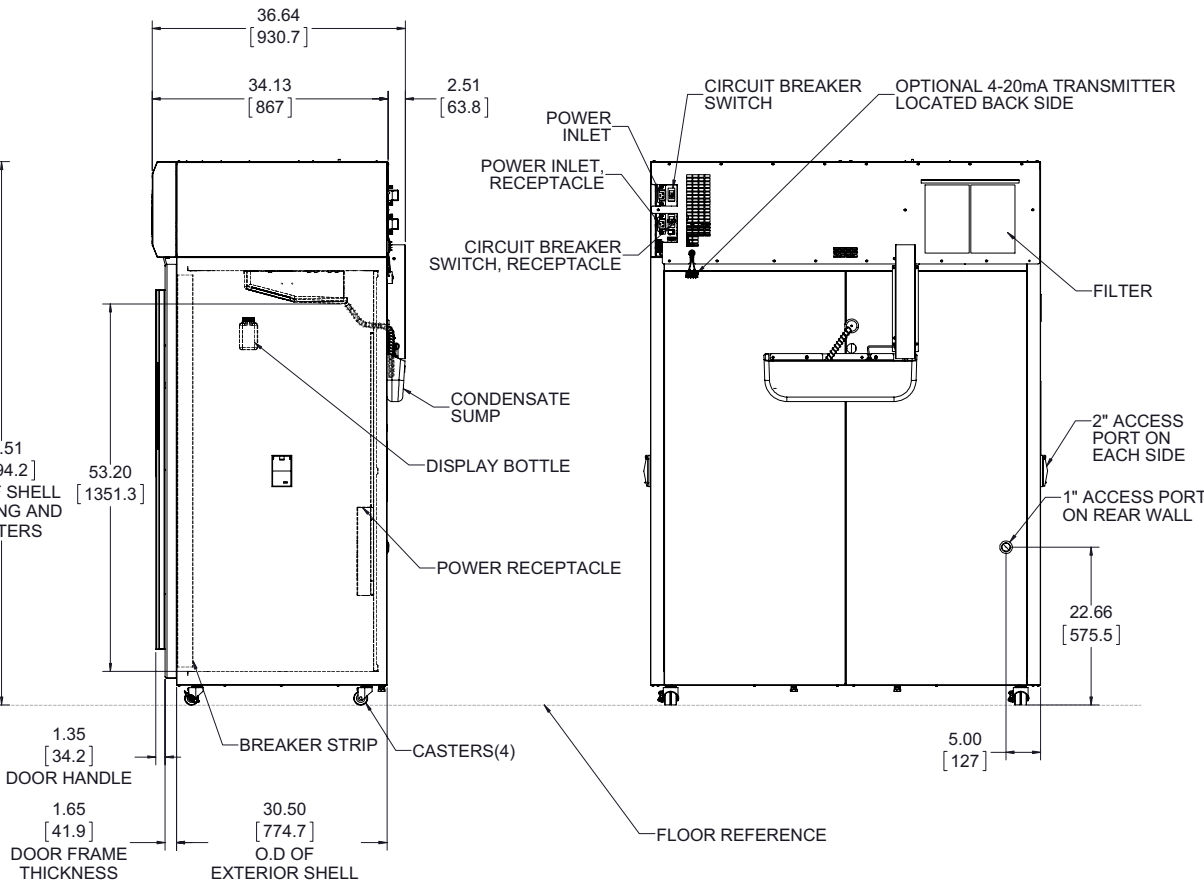
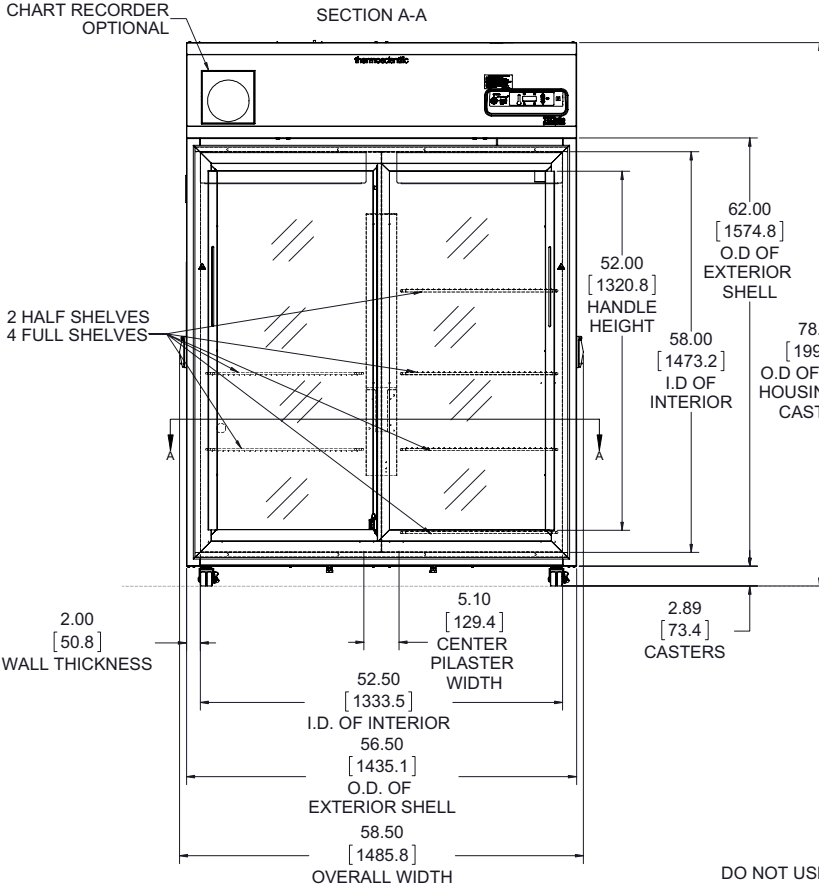
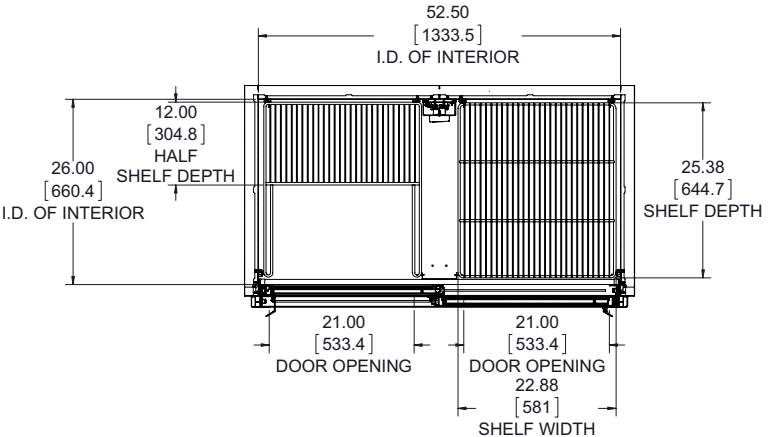
	M11	M12	M13	M14	M15	M20
Avg	5	5	4.8	4.9	4.8	4.9
Max	6.3	6.4	6.4	6.3	6.4	6.4
Min	3.6	3.4	2.8	3.3	2.9	3.1

	M21	M22	M23	M24	M25
Avg	5	4.9	4.9	4.9	4.8
Max	6.5	6.5	6.4	6.5	6.4
Min	3.3	3.2	3.2	3.2	2.8

	M51	M52	M53	M54	M55	M60
Avg	5.7	5.8	5	5.2	5.3	5.2
Max	6.8	6.8	6.4	6.5	6.5	6.5
Min	4.5	4.8	3.5	3.8	4	3.9

	M61	M62	M63	M64	M65	M70
Avg	5.1	5.4	4.9	5	5.1	5.1
Max	6.4	6.6	6.4	6.4	6.4	6.4
Min	3.7	4.2	3	3.2	3.8	3.6

	M71	M72	M73	M74	M75
Avg	5	5.2	4.9	5.1	4.9
Max	6.4	6.5	6.4	6.5	6.4
Min	3.3	3.9	3.2	3.6	3.2



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

45' Chromatography Refrigerator
6 Shelves
Sliding Door
Top Mount Controls

327839G18_rB