



Technical Data Sheet

High Performance Chromatography Refrigerator

Revision-2

Thermo Fisher Scientific, Asheville, North Carolina

| Specifications | Catalog number | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------------|----------|---------------------------------------|-----|-----------------------------------|-------------|-----------------|-----|----------------|---|--|---|-----------------------|----|----------------------------------|-------|---------------------------------|-----|-------------------------------|-----|-------------------------------|----|---------------------------------|-----|--------------|----|
| | TSX5005CV | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Model Number | TSX5005CV | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Application, Rating and Electrical Data | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Application | Chromatography (non-flammable) Refrigerator | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Storage Volume | 1447 Liters / 51.1 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 / 4.6 A (Unit) / 4 A (Internal Outlet) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building Supply Rating | 15 A 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, 135 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) | 72.4 cm x 133.4 cm x 147.3 cm (28.5" x 52.5" x 58.0") | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Exterior Dimensions (D x W x H) | 96.0 cm x 143.5 cm x 199.4 cm (37.8" 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 | 298 kg / 658 lb | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Typical Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>50 cuft Upright Refrigerator, Pull Down and Warm Up</p> </div> <div style="width: 30%;"> <p>50 cuft Upright Refrigerator at 5C Cycle</p> </div> <div style="width: 30%;"> <p>Test Unit Series Number or MSO Number: 19585-B-25</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>4.8</td> </tr> <tr> <td>Peak Variation from Setpoint (C):</td> <td>+1.6 / -2.5</td> </tr> <tr> <td>Uniformity (C):</td> <td>1.2</td> </tr> <tr> <td>Stability (C):</td> <td>3</td> </tr> <tr> <td>1-min Door Opening Recovery to 5C (min):</td> <td>2</td> </tr> <tr> <td>Duty Cycle at 5C (%):</td> <td>37</td> </tr> <tr> <td>Cycle (on/off) rate at 5C (min):</td> <td>4 / 6</td> </tr> <tr> <td>Energy Consumption (kw-hr/day):</td> <td>6.4</td> </tr> <tr> <td>Heat Rejection Rate (btu/hr):</td> <td>916</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>206</td> </tr> <tr> <td>Sound (dBA):</td> <td>52</td> </tr> </table> </div> </div> | | Cabinet Load: | Unloaded | Average Cabinet Temp at 5C Cycle (C): | 4.8 | Peak Variation from Setpoint (C): | +1.6 / -2.5 | Uniformity (C): | 1.2 | Stability (C): | 3 | 1-min Door Opening Recovery to 5C (min): | 2 | Duty Cycle at 5C (%): | 37 | Cycle (on/off) rate at 5C (min): | 4 / 6 | Energy Consumption (kw-hr/day): | 6.4 | Heat Rejection Rate (btu/hr): | 916 | Pull Down Time (to 5C) (min): | 16 | Warm Up Time (5C to 15C) (min): | 206 | Sound (dBA): | 52 |
| Cabinet Load: | Unloaded | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average Cabinet Temp at 5C Cycle (C): | 4.8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak Variation from Setpoint (C): | +1.6 / -2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Uniformity (C): | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stability (C): | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-min Door Opening Recovery to 5C (min): | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duty Cycle at 5C (%): | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cycle (on/off) rate at 5C (min): | 4 / 6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Energy Consumption (kw-hr/day): | 6.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Heat Rejection Rate (btu/hr): | 916 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pull Down Time (to 5C) (min): | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Warm Up Time (5C to 15C) (min): | 206 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sound (dBA): | 52 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <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 50cuft , 8 Inner-Shelves + Base, 2 Outer Doors

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

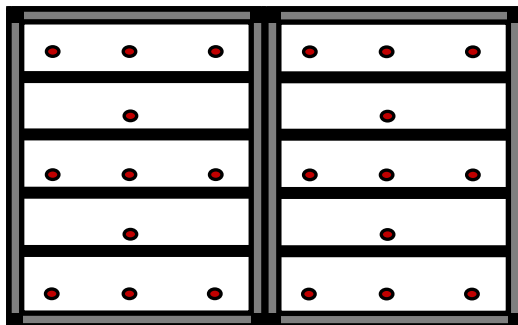
Top View of Shelves

REAR

FRONT

| | | | |
|-----|-----|-----|-----|
| M3 | M4 | M53 | M54 |
| | M5 | | M55 |
| M1 | M2 | M51 | M52 |
| M10 | | M60 | |
| M13 | M14 | M63 | M64 |
| | M15 | | M65 |
| M11 | M12 | M61 | M62 |
| M20 | | M70 | |
| M23 | M24 | M73 | M74 |
| | M25 | | M75 |
| M21 | M22 | M71 | M72 |

Front View



19585-B-25

Cabinet Average: 4.8 C
Probe Average: 5.5 C
Peak Variation: +1.6 C / -2.5 C

| | M1 | M2 | M3 | M4 | M5 | M10 |
|-----|-----|-----|-----|-----|-----|-----|
| Avg | 5.3 | 4.9 | 4.4 | 4.7 | 4.8 | 4.8 |
| Max | 6.6 | 6.2 | 6 | 6.2 | 6 | 6 |
| Min | 3.9 | 3.6 | 2.8 | 2.9 | 3.5 | 3.4 |

| | M11 | M12 | M13 | M14 | M15 | M20 |
|-----|-----|-----|-----|-----|-----|-----|
| Avg | 4.8 | 4.9 | 4.5 | 4.6 | 4.4 | 4.3 |
| Max | 6.1 | 6.2 | 6 | 6.2 | 5.8 | 6 |
| Min | 3.4 | 3.5 | 2.9 | 2.6 | 2.8 | 2.5 |

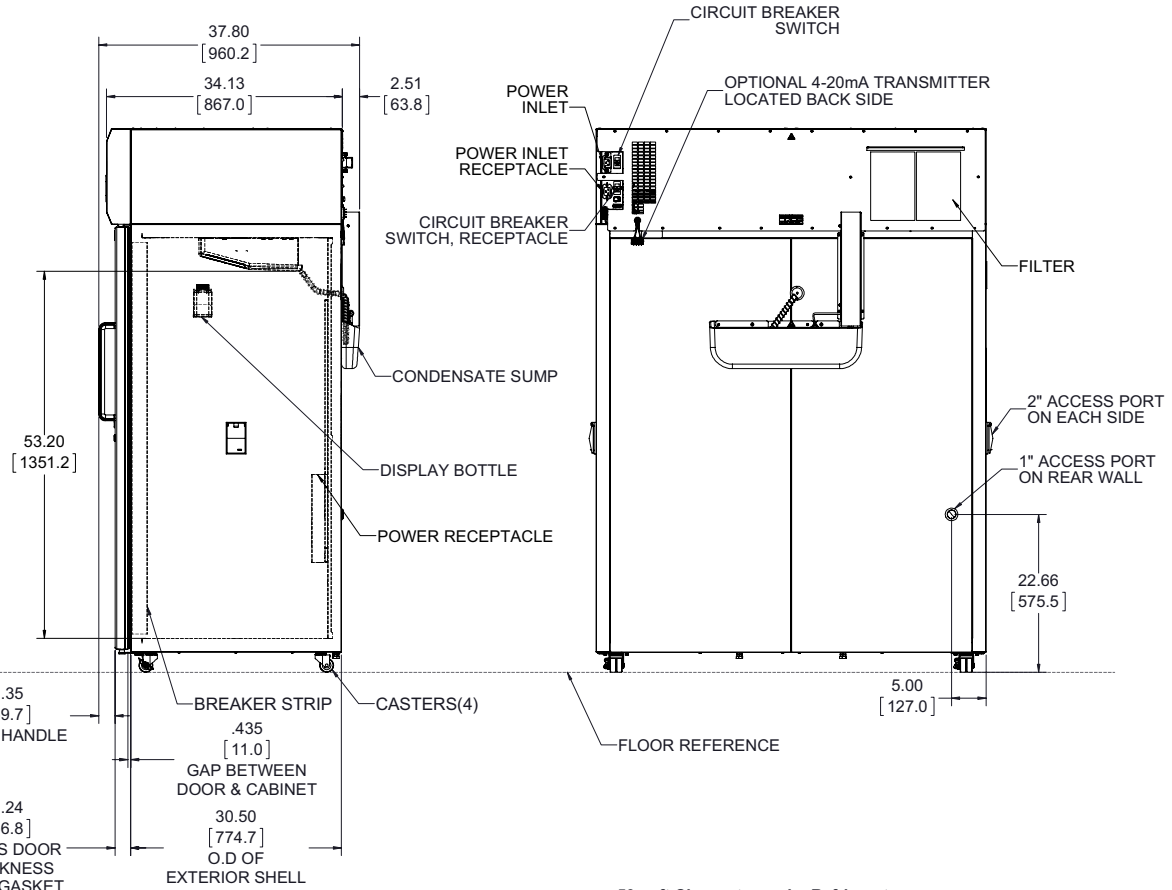
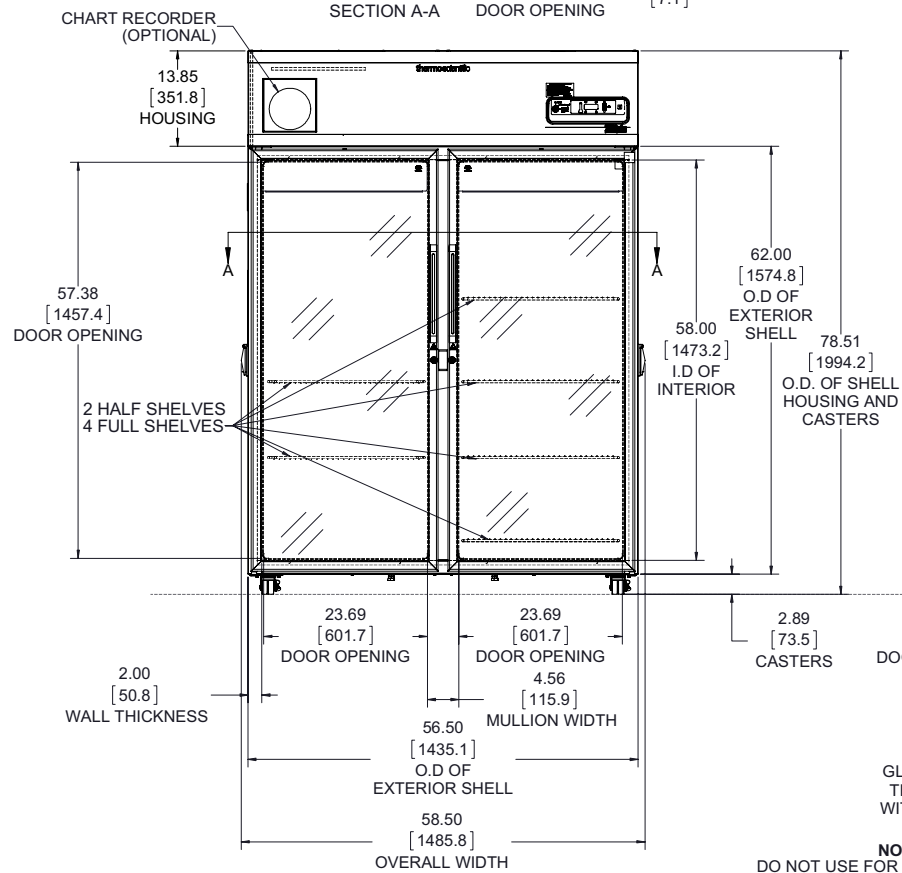
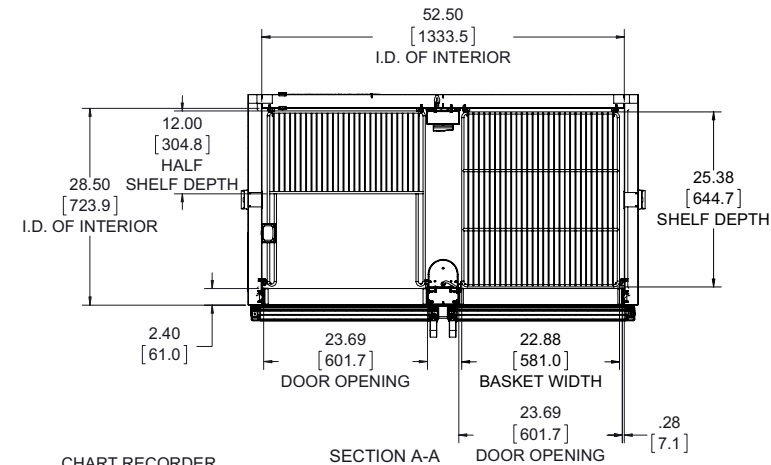
| | M21 | M22 | M23 | M24 | M25 |
|-----|-----|-----|-----|-----|-----|
| Avg | 4.5 | 4.6 | 4.6 | 4.5 | 4.5 |
| Max | 6 | 6.1 | 5.9 | 5.9 | 6.2 |
| Min | 2.8 | 3 | 3.2 | 2.9 | 2.5 |

| | M51 | M52 | M53 | M54 | M55 | M60 |
|-----|-----|-----|-----|-----|-----|-----|
| Avg | 5.2 | 5.3 | 4.8 | 5 | 5.3 | 5.1 |
| Max | 6.5 | 6.3 | 6.2 | 6.4 | 6.4 | 6.4 |
| Min | 3.8 | 4.3 | 3.4 | 3.6 | 4 | 3.7 |

| | M61 | M62 | M63 | M64 | M65 | M70 |
|-----|-----|-----|-----|-----|-----|-----|
| Avg | 5 | 5.4 | 4.9 | 4.8 | 5 | 4.8 |
| Max | 6.3 | 6.6 | 6.5 | 6.4 | 6.3 | 6.3 |
| Min | 3.4 | 4 | 3 | 3 | 3.4 | 3.1 |

| | M71 | M72 | M73 | M74 | M75 |
|-----|-----|-----|-----|-----|-----|
| Avg | 4.8 | 4.8 | 4.8 | 4.9 | 4.8 |
| Max | 6.3 | 6.3 | 6.3 | 6.3 | 6.4 |
| Min | 3 | 3.1 | 3.1 | 3.3 | 2.9 |

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



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

50 cuft Chromatography Refrigerator
6 Shelves
Double Outer Glass Door
Top Mount Controls