Technical Data Sheet
Revco Ultra-Low Temperature Upright Freezer

MODEL RELEASE - 65
Thermo Fisher Scientific, Asheville, North Carolina

Specifications

Model Number
Thermo Scientific Revco UxF50086A

Application, Rating and Electrical Data

Application
Storage of General (non-flammable) Laboratory Materials

Storage Volume
682 liters / 24.1 cu. ft., 500 Standard 2" Boxes

Temperature Rating
-50°C to -86°C

Electrical Power

Instrument Rated Current
120V, 60 Hz, 1 Phase

Building Supply Rating
20.0A dedicated grounded circuit. Protected by circuit breaker rated for inductive loads

Power Plug/Power Cord Length
NEMA 5-20P / IEC Cords, 3.048 Meters (10 Feet)

Agency Listings
UL, cUL

Indoor/Outdoor Usage
Indoor Use Only

Application Environment
Non-Corrosive, Non-Flammable, Non-Explosive, Good Air Ventilation, 15°C - 32°C (59°F - 90°F)

Refrigeration Configuration

Refrigeration System
Industrial-Rated Two Stage Cascade System

Compressor / Number
Hermetic Compressor for Low Temperature Application / 2

Condenser Type/Number
Enhanced Finned-Tube and Forced-Air Cooled / 1

Expansion Device
Capillary Tube

Evaporator Type
Cold Wall With Enhanced Heat Transfer Treatment

Defrost Method
Manual Defrost

Refrigerant Charge/Flammability
R404A in 1st Stage / R508B+R290 Mix in 2nd Stage / Non-Flammable

Controller/Electrical System Configuration and Features

Controller Level
1 (Top)

Power Switch
On-Off with Circuit Breaker

Controller Type
Microprocessor Control with Touch Screen Input and Display. Includes USB System Data Retrieval

Setpoint Security
Yes

Compressor Safe Guard
High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection

Control Sensor
Single RTD (1000 ohm Platinum RTD)

Remote Alarm Terminals
RS485/4-20mA output

Adjustable Warm/Cold Alarms
Fully Adjustable

Auto-Voltage Safeguard
Buck/Boost System

Dimensions and Construction

Interior Dimensions (H x D x W)
1300 H x 686 D x 732 W mm (51.2 H x 27 D x 28.8 W in.)

Exterior Dimensions (H x D x W)
1981 H x 955 D x 965 W mm (78 H x 37.6 D x 38 W in.)

Shipping Dimensions
2111 H x 1086 D x 1064 W mm (83.12 H x 42.75 D x 41.88 W in)

Insulation
High R-value Vacuum Insulation Panels and High Density Water-Blown Polyurethane Foam

Door Seal
Silicone-Based High Performance Seal Gasket with Electrical Door Perimeter Heater

Shelves / Capacity
4 Stainless Steel Shelves Adjustable In 25mm (1in) Increments. Max. Cap. per Shelf: 91.7 kg (205 lbs.)

All-Direction Casters
Standard with Locks

Shipping Weight
Approximately 355 kg / 782 lbs.

Other Options
LN2 or CO2 Back Up System, HID Controlled Access, SMS Text, Chart Recorder, 4 or 5 Inner Doors

Typical Performance Characteristics in 25°C Ambient

Performance Data Summary (Typical Average Values)

- Avg. Cabinet Temp. at -80°C Setpoint, High Performance (°C)
-79.6

- Peak Variation From -80°C Setpoint, High Performance (°C)
+5.6 to -3.8

- Stability, -80°C Setpoint, High Performance (°C)
+8.1 to -5.6

- Uniformity, -80°C Setpoint, High Performance (°C)
5.2

- 1 Min. Door Open Recovery to ±5°C Avg. Cabinet Temp. (mins)
28

- Cycle Rate, -80°C Setpoint, High Performance (on/off times)
2600

- Duty Cycle, -80°C Setpoint, High Performance (%)
97

- Energy Consumption, -80°C Setpoint, High Performance (kWh/day)
19.0

- Heat Rejection, -80°C Setpoint, High Performance (BTU/hr)
2711

- Energy Consumption, -80°C Setpoint, Energy Swing (kWh/day)
17.6

- Heat Rejection, -80°C Setpoint, Energy Swing (BTU/hr)
2632

- Pulldown Time to -80°C Average Cabinet Temp. (hours)
9.0

- Warmup Time, From Average Cabinet Temp. of -80°C to -50°C (mins)
237

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. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.

* Manufacturer measured compressor capacity taken at standard -23°C/49°C (Evap/Cond) condition.

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Typical Cabinet Temperature Map
500A ULT, 4 Inner-Shelves + Base, Single Outer Door

Temperatures are averages during > 12 hours of cycle after reaching setpoint of -80 C

**Cabinet Average:** -79.5 C  
**Probe Average:** -79.7 C  
**Peak Variation:** +3.4 C / -3.6 C

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**Front View**

- 1: -76.7 C  
- 2: -76.4 C  
- 3: -76.9 C  
- 4: -76.6 C  
- 5: -76.9 C  
- 6: -79.7 C  
- 7: -79.3 C  
- 8: -79.5 C  
- 9: -79.8 C  
- 10: -79.7 C  
- 11: -81.2 C  
- 12: -81.1 C  
- 13: -81.3 C  
- 14: -81.0 C  
- 15: -81.3 C  
- 16: -81.4 C  
- 17: -81.3 C  
- 18: -81.4 C  
- 19: -81.3 C  
- 20: -81.6 C  
- 21: -79.8 C  
- 22: -79.5 C  
- 23: -80.8 C  
- 24: -80.6 C  
- 25: -80.1 C  
- 26: -81.1 C  

**Probe Location:**

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LOCATION OF CONTROLS

*Chart recorder/Back up systems are stand alone on 300 models.

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