Technical Data Sheet

Forma Ultra-Low Temperature Upright Freezer

MODEL RELEASE - 21
Thermo Fisher Scientific, Asheville, North Carolina

Specifications

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<th>Model Number</th>
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Application, Rating and Electrical Data

- **Application**: Storage of General (non-flammable) Laboratory Materials
- **Storage Volume**: 651.3 liters / 23.0 Cubic Feet
- **Temperature Rating**: -10°C to -40°C
- **Electrical Power**: 120V 60 Hz, 1 Phase
- **Instrument Rated Current**: 10 AMP
- **Building Supply Rating**: 15.0A dedicated grounded circuit. Protected by circuit breaker rated for inductive loads
- **Power Plug/Power Cord Length**: NEMA 5-15P / IEC Cords, 3.048 Meters (10 Feet)
- **Agency Listings**: UL, cUL, FDA
- **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 one-stage System
- **Compressor / Number**: Hermetic Compressor for Low Temperature Application / 1
- **Compressor Capacity***: 967 W
- **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 / Non-Flammable

Controller/Electrical System Configuration and Features

- **Controller Level**: Top
- **Power Switch**: On-Off with Circuit Breaker
- **Setpoint Security**: NO
- **Compressor Safe Guard**: High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection
- **Remote Alarm Terminals**: Single RTD (1000 ohm Platinum RTD)
- **Adjustable Warm/Cold Alarms**: Fully Adjustable
- **Auto-Voltage Safeguard**: Back/Boost System

Dimensions and Construction

- **Interior Dimensions (H x D x W)**: 1308 H x 645 D x 777 W mm (51.5 H x 25.4 D x 30.6 W in.)
- **Exterior Dimensions (H x D x W)**: 1978 H x 954 D x 1102 W mm (77.9 H x 37.5 D x 43.4 W in.)
- **Shipping Dimensions**: 2096 H x 1156 D x 1252 W mm (82.5 H x 45.5 D x 49.3 W in)
- **Insulation**: High Density Polyurethane Foam, R-30 (ft²·°F·hr/Btu)
- **Door Seal**: Silicone-Based High Performance Seal Gasket
- **Shelves / Capacity**: 3 Stainless Steel Shelves Adjustable in 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lbs.)
- **All-Direction Casters**: Standard with Locks
- **Unit Weight**: Approximately 333 kg / 735 lbs.
- **Other Options**: Electronic Recorder and CO2 or LN2 Back-Up System or Datalogger

Typical Performance Characteristics in 20 °C Ambient

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 Fisher 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
ULT-49 23 cuft Unit, 4 Inner-Shelves + Base, Single Outer Door

Temperatures are averages during >12 hours of cycle after reaching setpoint of -40°C

Top View of Shelves

Front View

Cabinet Average: -38.5°C  
Probe Average: -39.5°C  
Peak Variation: +4°C / -0.8°C

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