

# TECHNICAL DATA SHEET

## MODEL ULT25NEU

Portable Ultra-Low Temperature Storage



### SPECIFICATIONS

|                              |  |
|------------------------------|--|
| Application                  | Storage of general (non-flammable) laboratory materials  |
| Storage Volume               | 25 liters (0.9 cu.ft.)   |
| Storage Capacity             | 18 standard 2" boxes   |
| Temperature Range            | -20°C to -86°C @ 32°C (90°F) ambient, uniformity +/- 3°C at -80°C top to bottom, adjustable in 1°C increments<br>Default temperature setting is -80°C. Preset options are -86°C, -40°C and -20°C.  |
| Electric Power               | 100V to 240VAC at either 50 or 60Hz or 12V DC from mobile source   |
| Maximum Power (Current)      | 280 watts (4 amps @ 120VAC, 2 amps @ 240VAC, 15 amps @ 12V DC)   |
| Auto-Voltage Capability      | 100V to 240V, 50 or 60 Hz  |
| Electric Supply Rating       | 15 amp or greater grounded circuit   |
| Power Plugs Available        | NEMA 5-15P plug requires standard NEMA 5-15R receptacle (120V); Length: 2261 mm (89 in.), or<br>NEMA 5-15P plug requires standard NEMA 5-15R receptacle (120V); Length: 3048 mm (120 in.), or<br>NEMA 6-15P plug requires standard NEMA 6-15R receptacle (240V); Length: 2997 mm (118 in.)<br><i>Specify when ordering</i> |
| Certification/Agency Listing | CE, cTUVus   |
| Noise                        | Advanced noise abatement, <45 dB(A) at 1 meter   |
| Indoor/Outdoor Use           | Indoor use only  |
| Environmental Conditions     | Non-corrosive, non-flammable, non-explosive, indoor use, altitude up to 2,000m, temperature 5°C to 40°C (41°F to 104°F), maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% at 40°C   |

### REFRIGERATION SYSTEM

|                       |  |
|-----------------------|--|
| Cooling Engine        | Helium charged free-piston Stirling engine with continuous modulation  |
| Heat Transport System | Gravity driven thermosiphon  |
| Refrigerant           | R-170 (Ethane) 10-12 g   |
| Evaporator            | Cold wall (inner liner)  |
| Heat Rejection        | Finned heat exchanger with forced air cooling<br>Air inlet: Right front side of unit<br>Air outlet: Below control panel on front of mechanical compartment |
| Defrost Method        | Manual   |

### CONTROLLER

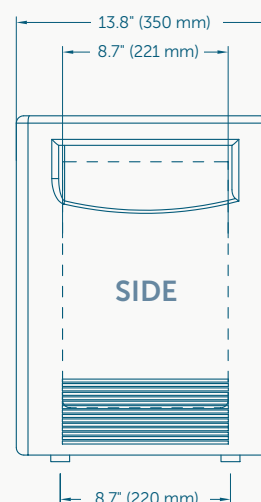
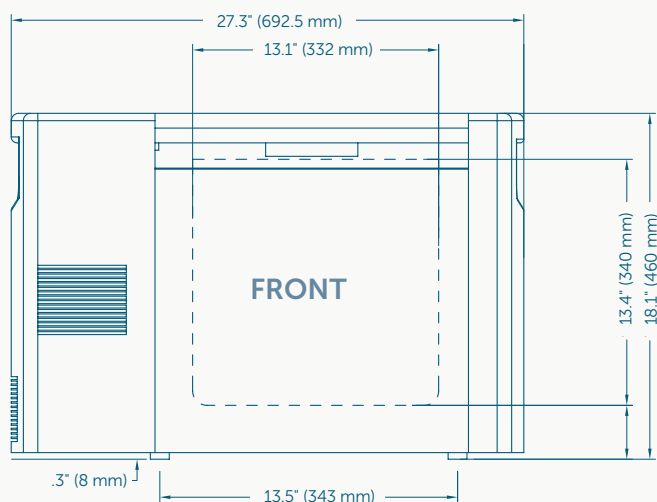
|                       |  |
|-----------------------|--|
| Controller Type       | Microprocessor controls  |
| Security              | Lockable lid   |
| Warm and Cold Alarms  | Setpoint $\pm$ 10°C  |
| Control Sensor        | One RTD (PT100 Class A)  |
| Dry Contacts          | Optional   |
| Internet Connectivity | Optional SenseAnywhere wireless temperature monitoring and logging |

### PERFORMANCE DATA

|   |  |
|---|--|
| Steady State Energy Use at 25°C Ambient | < 2.8 kWh/day (average power 118 watts) at -80°C (Empty Cabinet)           |
| Pull-Down from 25°C Ambient             | 4 hours at -80°C (Empty Cabinet)   |
| Recovery from 1 minute lid opening      | 20 minutes to -80°C (Empty Cabinet)  |
| Warm-up Profile                         | 30 minutes to -60°C (Empty Cabinet)<br>70 minutes to -40°C (Empty Cabinet) |
| Heat Dissipation                        | 403 BTU/h (load to HVAC) at -80°C (Empty Cabinet)                          |

## DIMENSIONS AND CONSTRUCTION

|                                 |   |
|---------------------------------|---|
| Interior (L x W x D)            | 332 x 221 x 340 mm   (13.1 x 8.7 x 13.4 in.)  |
| Exterior (L x W x D)            | 692.5 x 350 x 460 mm   (27.3 x 13.8 x 18.1 in.)   |
| Net Weight, Empty               | 21 kg (46 lbs.), nominal  |
| Shipping Dimensions (L x W x D) | 762 x 457 x 559 mm   (30 x 18 x 22 in.)   |
| Shipping Weight                 | 24 kg (53 lbs.)   |
| Insulation                      | High performance vacuum insulated panels and polyurethane foam  |
| Gasket Heater                   | Continuous operation when the power cord is connected   |
| Options                         | Plastic Utility Bin, AC Power Cords, Mobile Power DC Cord, Sub-Lid, Certificate of Calibration, Temperature Mapping Validation, Remote Alarm Contacts |



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**ULT25NEU Ultra-Low  
Temperature Freezer**

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**STIRLING POWER**