



TECHNICAL DATA SHEET


MODEL SU105UE

Compact Ultra-Low Temperature Freezer



SPECIFICATIONS

→ Application, rating and electric data

Application	Storage of general (non-flammable) laboratory materials
Storage Volume	105 liters (3.7 cu.ft.)
Storage Capacity	72 standard 2" boxes in optional racks, available separately
Temperature Range	-86°C to -20°C, adjustable to 1°C increments
Electric Power†	100V to 240V (±10%) at either 50 or 60 Hz
Power Cord Options Available	Multiple options are available. Consult with your sales representative 
Maximum Power (Current)	300 watts (3 amps @120V, 1.5 amps @240V) (±10%) at either 50 or 60 Hz
Auto-Voltage Capability	100V to 240V, 50 or 60 Hz
Electric Supply Rating	15 amp or greater grounded circuit
Certification/Agency Listing	CE, cULus
Noise	Advanced noise abatement, <48 dB(A) at 1 meter
Indoor/Outdoor Use	Indoor use only
Application Environment	Non-corrosive, non-flammable, non-explosive
Ambient Operating Temp	5°C to 35°C (41°F to 95°F)

→ Controller

Interface	Graphic user touchscreen interface
Controller Type	Microprocessor with touchscreen input and display
Security	Lockable door. Optional PIN requirement built in
Warm and Cold Alarms	Fully adjustable
Control Sensor	RTD (PT100 Class A)
Event Log	All alarms, door openings
Dry Contacts	Normally closed, normally open, common; activated by power outage or any alarm condition (24 Vdc maximum/500mA maximum)
Temperature Log	30 days available graphically
Battery Back-up	12 hour control battery back-up for touchscreen (6V lead acid battery)
Internet Connectivity	Optional SenseAnywhere wireless temperature monitoring and logging

→ Refrigeration system

Cooling Engine	Helium charged free-piston Stirling engine with continuous modulation
Heat Transport System	Gravity driven thermosiphon
Refrigerant	R-170 (Ethane) 30–33 grams
Evaporator	Cold wall (inner liner)
Heat Rejection	Finned heat exchanger with forced air cooling. Air inlet: Above freezer door, below mechanical compartment. Air outlet: Underneath of rear right corner bottom
Defrost Method	Manual

SPECIFICATIONS (CONTINUED)

→ Performance data

Steady State Energy Use	< 4 kWh/day at -80°C
Pull-Down from 25°C Ambient	12 hours to -80°C (Empty Cabinet)
Recovery from Door Opening (ENERGY STAR® Final Test Method)	40 minutes at -80°C
Warm-up Profile	2 hours to -60°C at -80°C (Empty Cabinet) 5.2 hours to -40°C at -80°C (Empty Cabinet)
Heat Dissipation	569 BTU/h (load to HVAC) at -80°C (Empty Cabinet)

→ Dimensions and construction

Interior (H x D x W)	533 x 432 x 457 mm / (21 x 17 x 18 in.)
Exterior (H x D x W)	864 x 711 x 686 mm / (34 x 28 x 27 in.)
Net Weight, Empty	100 kg (220 lbs.)
Shipping (H x D x W)	1079.5 x 838.2 x 838.2 mm / (42.5 x 33 x 33 in.)
Shipping Weight	121 kg (266 lbs.)
Insulation	High performance vacuum insulated panels and polyurethane foam using Ecomate® environmentally friendly, SNAP-compliant blowing agent
Gasket Heater	User programmable duty cycle
Shelves	1 stainless steel, fixed position (removable)

† The freezer operates on nominal 120V or 240V, 50 or 60Hz AC, over a wide voltage range from 85V to 264V. There is no need for special wiring or a 20 amp breaker on a 120V line. Heat rejection is minimal. The cooling air is drawn in over the top of the door and warm air exits at the right rear of the cabinet.

DIMENSIONS

