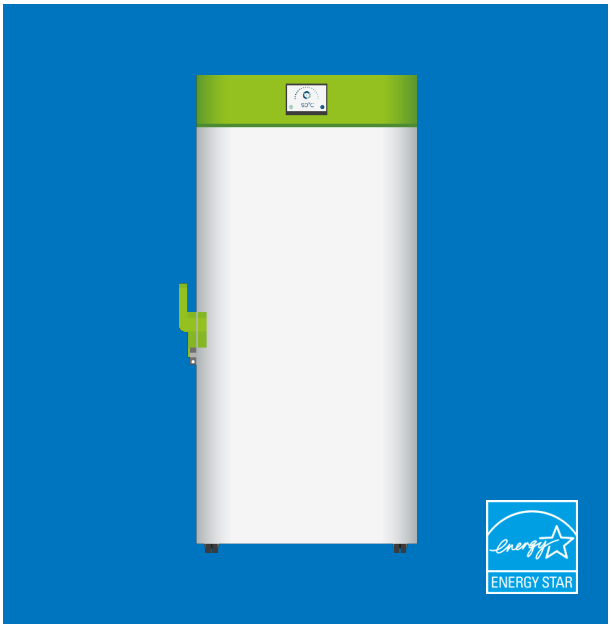
MODEL SU780XLE

Upright Ultra-Low Temperature Freezer

Stirling ULTRACOLD



Shown with optional inventory racks and five shelving units (standard). Interior dimensions accommodate optional inventory racks up to five standard boxes deep. Removable shelves are adjustable on ½"(12.7 mm) centers.

Making the industry's best-performing ULT freezer even better

- Provides a wider ultra-low temperature range from -20°C to -86°C
- ± 1°C Steady-state temperature variation over time
- 35 minute door opening recovery time to -80°C within +/-1°C of setpoint (when tested using the ENERGY STAR® Final Test Method door opening procedure)
- Connectivity available to BMS/BAS or 3rd-party monitoring system
- Real-time temperature display
- Largest storage capacity per sq. ft. of floor space
- Accepts universal power

The SU780XLE delivers strategic advantages across your entire research organization

Protecting your Research Materials

- Modulated cooling capacity eliminates on/off cycling
- 100% adaptive control - faster temperature pull-down and recovery
- Advanced Stirling engine technology with only two moving parts – no compressors to fail!
- Freezer warranty – seven year engine and thermosiphon protection, two years parts and labor coverage*

Protecting the Environment

- Uses up to 70% less energy than legacy compressor-based units
- Uses up to 45% less energy than similar sized ENERGY STAR® rated freezers
- Uses EPA SNAP-approved 100% natural refrigerants
- Waste reduction processes and environmentally friendly foam insulation blowing agent used in product manufacturing
- Significantly smaller operating carbon footprint than legacy compressor-based systems

Protecting your Operating Budget

- Reduces electric utility costs up to 70% when replacing legacy compressor-based freezers
- Significantly reduces heat output and HVAC cost of operations
- Reduces floor space, facilities, infrastructure, and backup power cost
- Lowest ongoing maintenance requirements and service costs

MODEL SU780XLE Specifications

Application, rating and electric data

Application	Storage of general (non-flammable) laboratory materials
Storage Volume	780 liters (27.5 cu.ft.)
Storage Capacity	600 standard 2" boxes in optional racks, Optional 700-box system, available separately
Temperature Range	-20°C to -86°C @ 32°C (90°F) ambient, adjustable to 1°C increments
Electric Power†	100-240VAC at 50/60Hz (Japan) 120-240VAC at 50/60Hz (All other regions)
Power Plugs Available	NEMA 5-15P plug requires standard NEMA 5-15R receptacle (120V); Length: 3048 mm (120 in.), or NEMA 6-15P plug requires standard NEMA 6-15R receptacle (240V); Length: 2997 mm (118 in.) *Specify when ordering*
Maximum Power (Current)	1200 watts (10 amps @120V, 5 amps @240V), nominal
Auto-Voltage Capability	120-240VAC at 50/60Hz (automatically adjusts)
Electric Supply Rating	15 amp or greater grounded circuit
Certification/ Agency Listing	cULus, CE, and ENERGY STAR®
Noise	<48 dB(A) at 1 meter from front of freezer in steady state operation
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)
Useful Life	12 years, nominal

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	One 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
Temperature Log	30 days available graphically
Battery Back-up	12 hour control battery back-up for touchscreen
Internet Connectivity	Optional Ethernet connection transmitting in BACnet™ or MQTT protocols 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) 90 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: Right side of top cover, upward
Defrost Method	Manual

Performance data

Steady State Energy Use (ENERGY STAR® Final Test Method)	6.67 kWh/day at -75°C (Weighted Average)
Pull-Down from 25°C Ambient	6.5 hours at -80°C (Empty Cabinet)
Recovery from Door Opening (ENERGY STAR® Final Test Method)	35 minutes at -80°C
Warm-up Profile	2.5 hours to -60ºC at -80°C (Empty Cabinet) 6.5 hours to -40ºC at -80°C (Empty Cabinet)
Heat Dissipation	981 BTU/h (load to HVAC) at -80°C (Empty Cabinet)

Dimensions and construction

Interior (H x D x W)	1542 x 705 x 740 mm / (60.7 x 27.8 x 29.1 in.)
Exterior (H x D x W)	1994 x 870 x 915 mm / (78.5 x 34.3 x 36 in.)
Net Weight, Five Shelves No Load	297 kg (655 lbs.)
Shipping (H x D x W)	2134 x 1092 x 1168 mm / (84 x 43 x 46 in.)
Shipping Weight	347 kg (765 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	5 stainless steel, adjustable in 12.7 mm (0.5 in.) increments
Inner Doors	3 insulated with magnetic latches
Options	Chart recorder, CO_2 and LN2 back-up systems, additional shelves, international plug(s), 4-20mA temperature output

ASHRAE BACnet®

* Labor warranty coverage available in the U.S. and Canada.
† There is no need for special wiring or a 20 amp breaker on a 120V line.

Stirling ULTRACOLD

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