



# TECHNICAL DATA SHEET


## MODEL SU105UE

Compact Ultra-Low Temperature Freezer



### SPECIFICATIONS

#### → Application, rating and electric data

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

#### → Controller

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

#### → Refrigeration system

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

## SPECIFICATIONS (CONTINUED)

### → Performance data

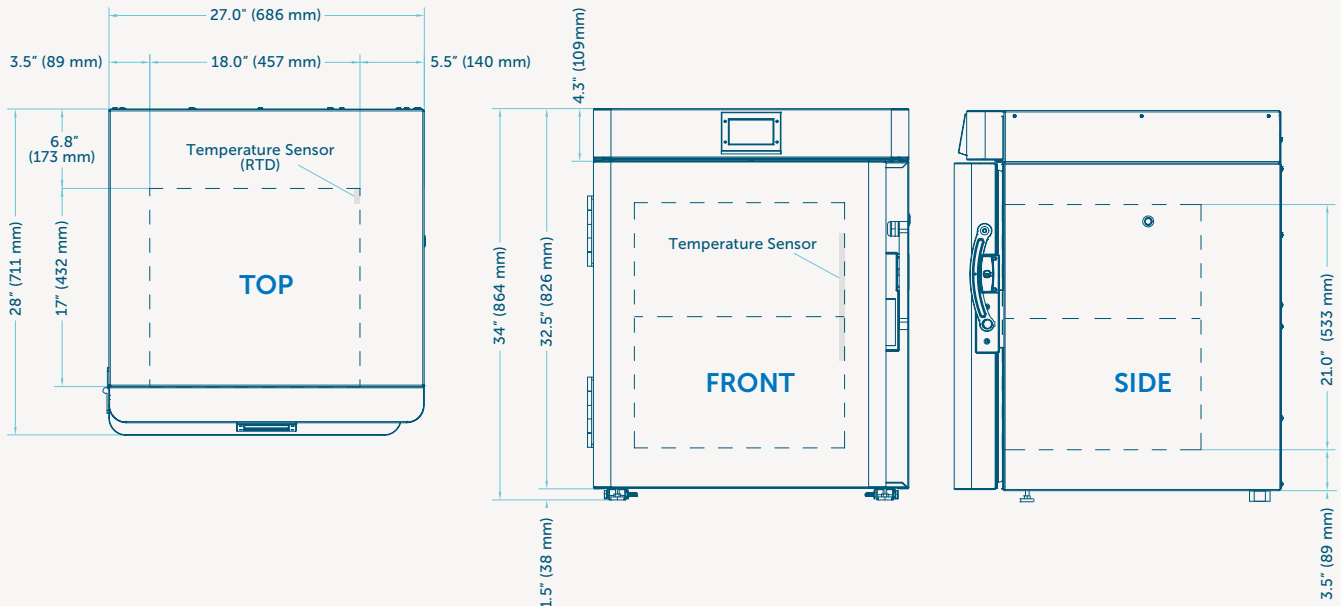
Steady State Energy Use	< 4 kWh/day at -80°C
Pull-Down from 25°C Ambient	12 hours to -80°C (Empty Cabinet)
Recovery from Door Opening (ENERGY STAR® Final Test Method)	40 minutes at -80°C
Warm-up Profile	2 hours to -60°C at -80°C (Empty Cabinet) 5.2 hours to -40°C at -80°C (Empty Cabinet)
Heat Dissipation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



Stirling Ultracold 6000 Poston Road, Athens, Ohio 45701, USA  
 T 740.274.7900 / 1.855.274.7900 | F 740.274.7901 | [www.stirlingultracold.com](http://www.stirlingultracold.com)

©2024 Stirling Ultracold, Global Cooling, Inc. All Rights Reserved.

Global Cooling technology is manufactured under U.S. and International patents. Stirling Ultracold is a trademark of Global Cooling, Inc. Specifications subject to change without notice. Refer to [www.stirlingultracold.com](http://www.stirlingultracold.com) for the latest specifications.



STIRLING POWER