

MODEL VAULT100™ PRO

Upright Ultra-Low Temperature Freezer



Making our best-performing ULT freezer even better

- -100°C to -20°C temperature range
- Best steady-state temperature uniformity in the market (GxP 20-position probe placement): 6°C at -80°C, 4°C at -70°C, 2.5°C at -40°C, 2°C at -20°C
- Quick change, no hot work refrigeration system
- When operating at setpoints down to -100°C, your samples may never be exposed to temperatures above -70°C during or after a typical door opening
- An updated interface shows freezer health analytics
- Designed with a 360-degree sustainability approach
- Largest storage volume per sq. ft. of floor space
- Accepts universal power

The VAULT100PRO delivers strategic advantages across your entire organization

Protecting what you value most

- Modulated cooling capacity eliminates on/off cycling
- 100% adaptive control - faster temperature pull-down and recovery
- Best in class MTBF with advanced Stirling engine technology, just two moving parts - no compressors to fail!
- Freezer warranty - six year engine and thermosiphon protection, plus all labor (US only) and parts

Protecting the Environment

- Uses up to 45% less energy than similar sized ENERGY STAR® rated freezers
- Uses EPA SNAP-approved 100% natural refrigerants
- Efficient Stirling engine releases 30% less heat to HVAC than compressor based systems
- Lowest ACT Ecolabel through My Green Lab

Protecting your Operating Budget

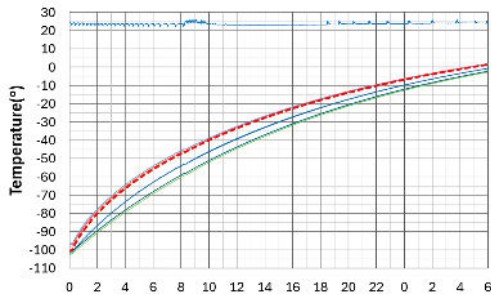
- Significantly reduces heat output and HVAC cost of operations
- Reduces floor space, facilities, infrastructure, and backup power cost
- Lowest ongoing maintenance requirements and service costs
- Quick change refrigeration system allows replacement in under/within 1 hour

MODEL VAULT100™PRO Specifications

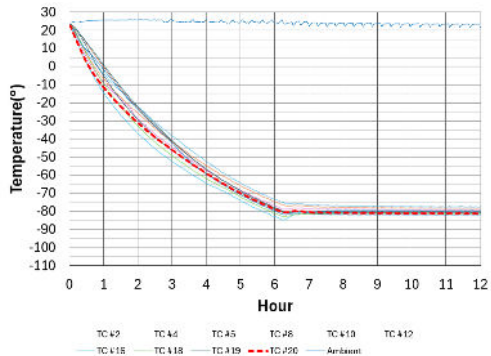
→ Application, rating and electric data

Application	Storage of general (non-flammable) laboratory materials
Storage Volume	795 liters (28 cu.ft.)
Storage Capacity	600 standard 2" boxes in optional racks, Optional 700-box system, available separately
Temperature Range	-100°C to -20°C (-148°F to -4°F) adjustable to 1°C increments
Electric Power	120-240VAC at 50/60Hz
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.) <i>Specify when ordering</i>
Maximum Power (Current)	1200 watts (10 amps @120V, 5 amps @240V), nominal
Auto-Voltage Capability	120-240VAC at 50/60Hz (accepting universal inputs)
Electric Supply Rating	15 amp or greater grounded circuit
Certification/ Agency Listing	cULus, CE, and ENERGY STAR®
Noise	< 42 dB(A) at 1 meter from front of freezer in steady state operation
Internet Connectivity	Optional Ethernet connection transmitting in BACnet™

Warm-up - 2 shelves



Pulldown to -80°C



→ Refrigeration system

Cooling Engine	Helium-charged (10-gr) free-piston Stirling engine with continuous modulation and quick change capability
Heat Transport System	Gravity driven thermosiphon
Refrigerant	R-170 (Ethane) 105 grams (3.7 oz)
Evaporator	Cold wall (inner liner)
Heat Rejection	Finned heat exchanger with forced air cooling. Air inlet: Right side of top cover, through air filter Air outlet: Left side of top cover, upward
Defrost Method	Manual

→ Performance data

Steady State Energy Use (ENERGY STAR® Final Test Method)	6.6 kWh/day at -75°C
20-Position Temperature Uniformity†	6°C* at -80°C
Door Opening Recovery (Energy Star® Final Test Method)	26 minutes to SS at -80°C
Pull-Down from 25°C Ambient	6.0 hours @ ambient to -80°C
Warm-up Profile	2.7 hours to -60°C at -80°C (Empty Cabinet) 7.8 hours to -40°C at -80°C (Empty Cabinet)
Heat Dissipation	825 Btu/h @ steady state at -75°C. 978 Btu/h @ steady state at -75°C (6 door openings)

→ Dimensions and Construction

Interior (H x D x W)	1542 H x 706 D x 732 mm W (60.7 x 27.8 x 28.8 in.)
Exterior (H x D x W)	1996 H x 871 D x 915 mm W (78.6 x 34.3 x 36 in.)
Net Weight, Five Shelves No Load	300 kg (660 lbs.)
Shipping Weight	345 kg (760 lbs.)
Shelves	5 stainless steel, adjustable in 12.7 mm (0.5 in.) increments
Inner Doors	3 insulated with magnetic latches
Options	CO ₂ and LN ₂ back-up systems, additional shelves, international plug(s), 4-20 mA – Temperature transmitter: 0°C to -100°C (4-20mA), loop power (8 to 35 VDC) is required



† There is no need for special wiring or a 20-amp breaker on a 120V line
‡ ENERGY STAR® Final Test Method
* Within testing protocol margin of error



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REDEFINING COLD