

VIP® ECO

MDF-DU901VHA-PA ENERGY STAR® Certified Large Capacity Upright Ultra Low Temperature Freezer



General Specifications		
Volume	cu.ft. liters	29.8 845
Temperature Control Range	°C	-50 to -86
External Dimensions (W x D x H) ¹⁾	inches mm	45.3 x 34.3 x 78.5 1150 x 870 x 1993
Internal Dimensions (W x D x H)	inches mm	39.8 x 23.6 x 55.1 1010 x 600 x 1400
Footprint	ft ² m ²	10.79 1
Stainless Steel Shelf (adjustable)	qty	3
Power Supply		115V, 60Hz, 1Ø, NEMA 5-20P, requires NEMA 5-20R receptacle
Factory Certification		ISO9001, ISO13485, ISO14001
NRTL Testing Lab Mark		QPS Listed
Net Weight	lbs kg	723 328
Noise Level ²⁾	dB(A)	52

Storage Specifications		
Racks per Freezer	qty	28
Racks per Shelf	qty	7
2" Boxes per Freezer	qty	672
3" Boxes per Freezer	qty	448

¹⁾ Exterior dimensions of cabinet excluding handle, rear stand-off brackets and other external projections. Consult product web page for doorway entry instructions, less than 36": www.phc.com/us/biomedical/preservation/ultra-low-freezers/mdf-du901vha-pa

²⁾ Actual value, background noise 20 dB(A).

Multiple options are available for racking including side opening and front loading trays. The information provided is for the most common racks. We also offer double height racks and other configurations, as well as customized racking for cryoboxes and other containers. Please speak to your local representative for more information.

Refrigeration	
Refrigeration System	Synchronized variable differential cascade system
Compressors	(2) 1000 watt – Variable speed compressors (completely enclosed reciprocating type)
Condenser	High-Stage: fin and tube type Low-Stage: shell and tube type
Evaporator	High-Stage: patented reverse flow heat exchanger Low-Stage: tube on sheet type (cold wall)
Refrigerant	High-Stage: R-290 natural refrigerant Low-Stage: R-170 natural refrigerant, trace natural R-601

Cabinet Construction	
Insulation	Rigid polyurethane foamed-in-place + VIP Plus® vacuum insulated panels: 3.1" (80 mm) thick
Exterior Material	Painted electrogalvanized steel
Interior Material	Powder coated electrogalvanized steel
Outer Door	Painted electrogalvanized steel exterior, Rigid polyurethane foamed-in-place + VIP Plus® vacuum insulated panels with EZlatch, key lock, will accommodate padlock
Vacuum Relief	2: one in door (auto release), one in lower left (manual release)
Inner Doors	2 (insulated, ABS, stainless steel frames, positive latches)



Model MDF-DU901VHA-PA showing insulated inner doors and EZlatch access.

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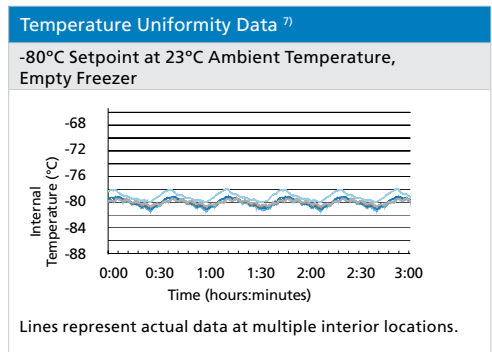
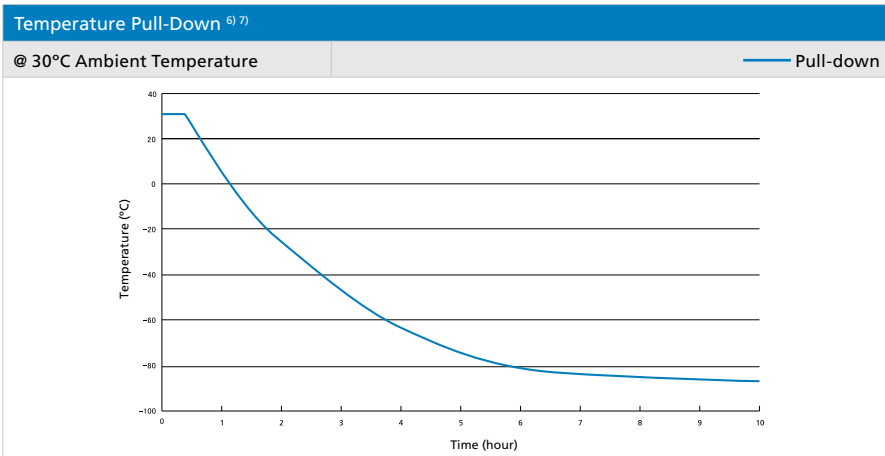
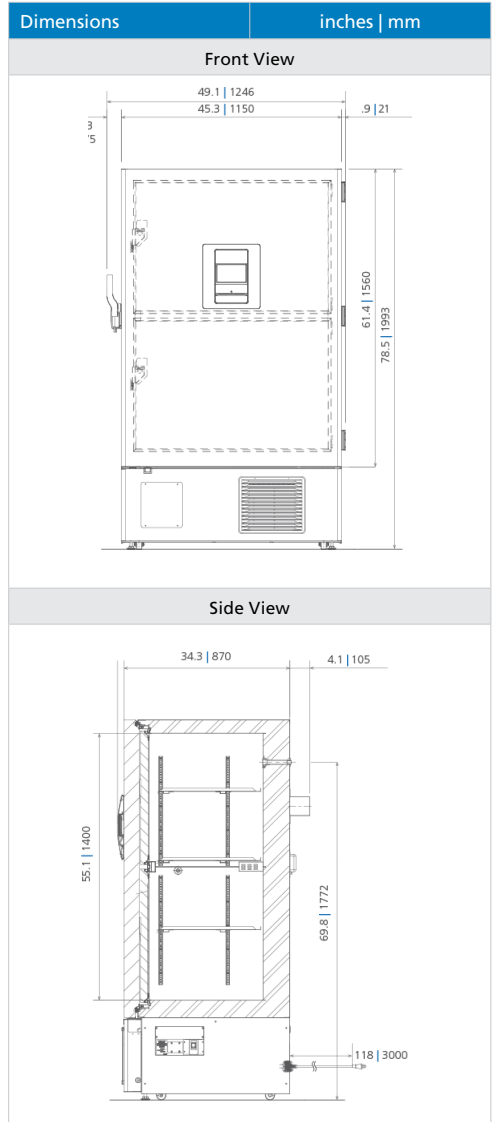
ENERGY STAR – Certification Number 4789267856

MDF-DU901VHA-PA

Performance Characteristics	
24°C Ambient, empty chamber, measured at center of chamber	
Energy Consumption ¹⁾	
Daily Consumption (6x door openings) ²⁾	
Setpoint -70°C Setpoint -80°C	7.2 kWh/day 9.5 kWh/day
ENERGY STAR Composite ³⁾ ~ -75°C	8.6 kWh/day
Steady State (no door openings)	
Setpoint -70°C Setpoint -80°C	7.6 kWh/day 10.1 kWh/day
ENERGY STAR Composite ³⁾ ~ -75°C	8.9 kWh/day
MDEC (maximum daily energy consumption)	
Daily	8.6 kWh/day/29.8 cu.ft. = 0.29 kWh/day/cu.ft.
Steady State	8.9 kWh/day/29.8 cu.ft. = 0.30 kWh/day/cu.ft.
Performance	
Interior Uniformity	
Setpoint -70°C Setpoint -80°C	±2.37°C ±2.17°C
Average Steady State Temperature ⁴⁾	
Setpoint -70°C Setpoint -80°C	-69.38°C -80.53°C
Temperature Recovery ^{2) 5)}	
Setpoint -70°C Setpoint -80°C	10 minutes 18 minutes
Refrigeration System Heat Rejection ⁶⁾	
Setpoint -70°C Setpoint -80°C	1080 BTU/Hr 1436 BTU/Hr
Pull-Down Time from 20°C Ambient	
Setpoint -70°C Setpoint -80°C	4.5 hours 6 hours

¹⁾ Energy consumption per day, EPA Test, Version 1.1, Section 7, Reporting, G2c.
²⁾ Based on inner door opening time of 15 seconds per ENERGY STAR testing protocol with all mapped temperature points to within ±5C of setpoint.
³⁾ Calculation of ENERGY STAR based on performance of setpoints -70°C or -80°C.
⁴⁾ Overall average for all recorded interior temperature measurements at setpoints of -70°C or -80°C.
⁵⁾ Temperature recovery to ±5°C of setpoint.
⁶⁾ Based on standard calculations.

Based on independent, third-party testing at time of publication. ENERGY STAR test results for submitted products can be compared for performance across the competitive market. Results are published on the ENERGY STAR website at www.energystar.gov. See Certification Number 4789267856. Detailed test results are available, including additional tests at ambient temperature of 20°C and 30°C.



⁷⁾ Data points available upon request.
Specifications are subject to change without notice.
 For latest specification information contact PHC Corporation of North America at info@us.phchd.com.



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