

VIP® ECO

MDF-DU702VH-PA ENERGY STAR® Certified Upright Ultra-Low Temperature Freezer



Technical Data Sheet

General Specifications		
Volume	cu.ft.   liters	25.7   729
Temperature Control Range	°C	-50 to -86
External Dimensions (W x D x H)	inches   mm	40.6 x 34.7 x 78.5   1030 x 882 x 1993
Internal Dimensions (W x D x H)	inches   mm	34.3 x 23.6 x 55.1   870 x 600 x 1400
Footprint	ft²   m²	9.78   .91
Stainless Steel Shelf (adjustable)	qty	3
Power Supply		220V, 1Ø, NEMA 6-15P, requires NEMA 6-15R receptacle
Factory Certification		ISO9001, ISO13485, ISO14001
NRTL Testing Lab Mark		QPS Listed
Net Weight	lbs   kg	613   278
Noise Level*	dB(A)	46

Storage Specifications		
Racks per Freezer	qty	24
Racks per Shelf	qty	6
2" Boxes per Freezer	qty	576
3" Boxes per Freezer	qty	384

\*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 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) 750 watt variable speed compressors (completely enclosed reciprocating type)
Condenser	<b>High-stage:</b> fin and tube type <b>Low-stage:</b> shell and tube type
Evaporator	<b>High-stage:</b> cascade type <b>Low-stage:</b> tube on sheet type (cold wall)
Refrigerant	<b>High-stage:</b> R-290 natural refrigerant <b>Low-stage:</b> 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-DU702VH-PA shown with additional shelf



# VIP ECO Upright Ultra-Low Temperature Freezer

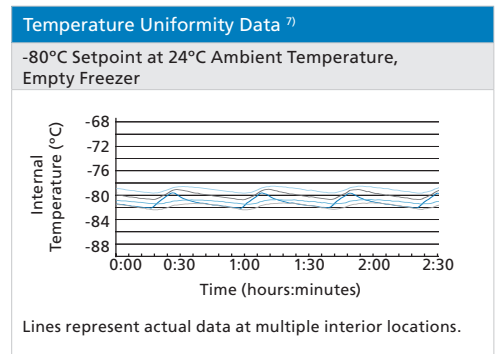
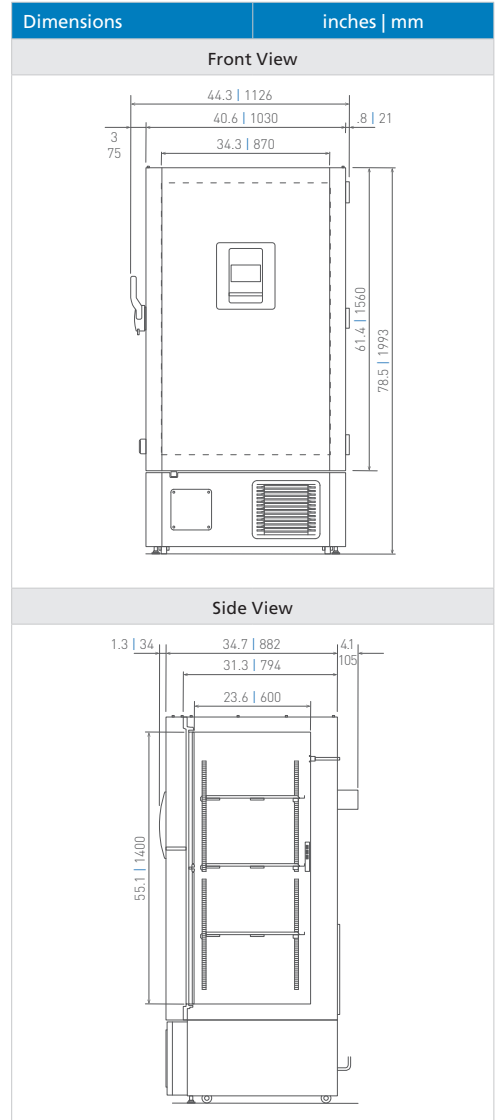
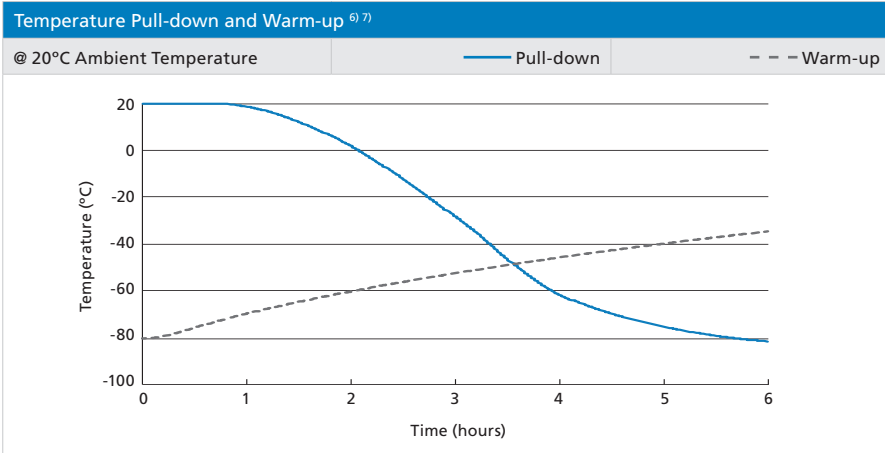
## ENERGY STAR – Certification Number 4787624501

MDF-DU702VH-PA

Performance Characteristics	
<b>24°C Ambient, empty chamber, measured at center of chamber</b>	
Energy Consumption <sup>1)</sup>	
<b>Daily Consumption (6x door openings) <sup>2)</sup></b>	
Setpoint -70°C   Setpoint -80°C	6.72 kWh/day   9.00 kWh/day
ENERGY STAR Composite <sup>3)</sup> ~ -75°C	7.87 kWh/day
<b>Steady State (no door openings)</b>	
Setpoint -70°C   Setpoint -80°C	6.19 kWh/day   8.40 kWh/day
ENERGY STAR Composite <sup>3)</sup> ~ -75°C	7.30 kWh/day
<b>MDEC (maximum daily energy consumption)</b>	
Daily	7.87 kWh/day/25.74 cu.ft. = 0.31 kWh/day/cu.ft.
Steady State	7.30 kWh/day/25.74 cu.ft. = 0.28 kWh/day/cu.ft.
Performance	
<b>Interior Uniformity</b>	
Setpoint -70°C   Setpoint -80°C	±5°C   ±5°C
<b>Average Steady State Temperature <sup>4)</sup></b>	
Setpoint -70°C   Setpoint -80°C	-69.38°C   -80.53°C
<b>Temperature Recovery <sup>2) 5)</sup></b>	
Setpoint -70°C   Setpoint -80°C	8 minutes   8 minutes
<b>Refrigeration System Heat Rejection <sup>6)</sup></b>	
Setpoint -70°C   Setpoint -80°C	810 BTU/Hr   1109 BTU/Hr
<b>Pull-Down Time from 20°C Ambient</b>	
Setpoint -70°C   Setpoint -80°C	4.5 hours   5.5 hours
<b>Warm-up Time to -40°C</b>	
Setpoint -80°C, empty cabinet	~5 hours

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

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](http://www.energystar.gov). See Certification Number 4787624501. Detailed test results are available, including additional tests at ambient temperature of 20°C and 30°C with and without simulated loads.



<sup>7)</sup> 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](mailto:info@us.phchd.com).



PHC Corporation of North America  
 1300 Michael Drive, Suite A, Wood Dale, IL 60191  
 Toll Free USA (800) 858-8442, Fax (630) 238-0074  
[www.phchd.com/us/biomedical](http://www.phchd.com/us/biomedical)

