

VIP® ECO

MDF-DC102VH-PA -86°C 115V Compact Ultra Low Temperature Chest Freezer with Natural Refrigerants



Temperature Range -40°C to -86°C

Technical
Data Sheet

General Specifications		
Volume	cu.ft. liters	3.0 84
Temperature Control Range	°C	-40 to -86
External Dimensions (W x D x H)	inches mm	22 x 27.1 x 39.1 558 x 688 x 993
Internal Dimensions (W x D x H)	inches mm	15.9 x 19.3 x 16.8 405 x 490 x 426
Footprint	ft² m²	4.17 0.38
Inner Lid	qty	1
Power Supply (Dual Voltage)		115V, 60HZ, NEMA 5-15P, 8 ft cord length, requires NEMA 5-15R receptacle
Factory Certification		ISO9001, ISO13485, ISO14001
NRTL Testing Lab Mark		QPS Listed
Net Weight	lbs kg	187.3 85
Noise Level ¹⁾	dB(A)	52

Storage Specifications		
Racks per Freezer	qty	6
2" Boxes per Freezer	qty	42
3" Boxes per Freezer	qty	30

¹⁾ Actual value, background noise 20 dB(A).

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

Refrigeration	
Refrigeration System	Auto cascade
Compressors	550 watt (completely enclosed reciprocating type)
Condenser	Filter Less: wire and tube
Evaporator	Tube on sheet type (cold wall)
Refrigerant	Mixed HC refrigerant (R-600/R-170/R-50)

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 foam with keyed door lock.
Access Port	Inner diameter: 17 mm (0.67 in.), 2 positions (back x 1, bottom x 1)
Inner Lid Material	Styrene foam



Front view of model MDF-DC102VH-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	4.51 kWh/day 5.43 kWh/day
Steady State (no door openings)	
Setpoint -70°C Setpoint -80°C	4.44 kWh/day 5.36 kWh/day
MDEC (max. daily energy consumption)	1.87 kWh/day/cu.ft.
Performance	
Interior Uniformity	
Setpoint -70°C Setpoint -80°C	±3°C ±3°C
Average Steady State Temperature ³⁾	
Setpoint -70°C Setpoint -80°C	-70.54°C -80.56°C
Refrigeration System Heat Rejection ⁴⁾	
Setpoint -70°C Setpoint -80°C	810 BTU/Hr 1177 BTU/Hr
Pull-Down Time from 30°C Ambient	
Setpoint -70°C Setpoint -80°C	1.9 hours 2.5 hours
Warm-Up Time to -40°C	
Setpoint -80°C, empty cabinet	~2.4 hours

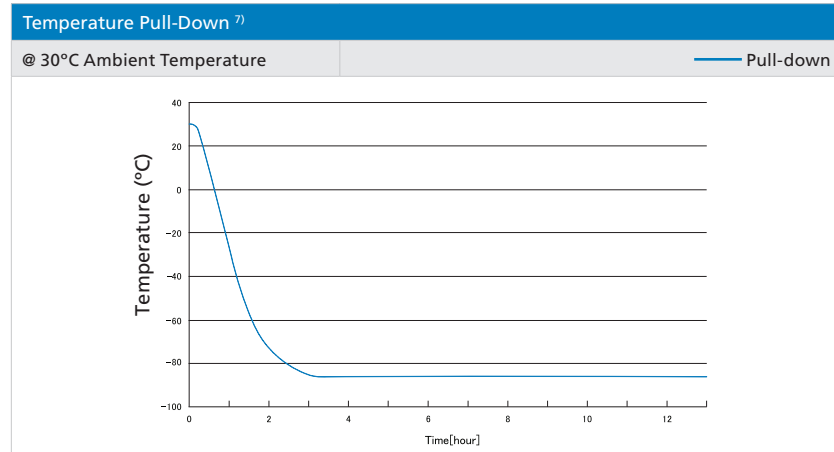
¹⁾ Energy consumption EPA Test, Version 1.1, Section 7, Reporting, G2c.

²⁾ Based on inner door opening time of 15 seconds per ENERGY STAR testing protocol with all mapped temperature points to within ±5°C of setpoint.

³⁾ Overall average for all recorded interior temperature measurements at setpoints of -70°C or -80°C.

⁴⁾ Based on standard calculations.

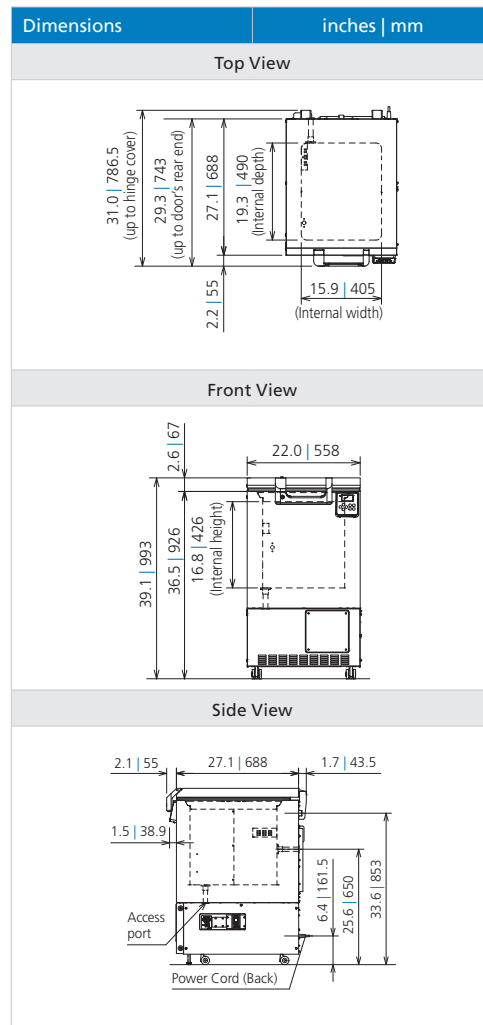
Test results based on independent, third-party testing at the time of publication. This equipment has been tested to ENERGY STAR standards by our testing company. Detailed test results are available, including additional testing.



¹⁾ The data reflects performance metrics rather than official product specifications. Results from technical data sheet tests should not be used to establish regulatory parameters for specific customer applications.

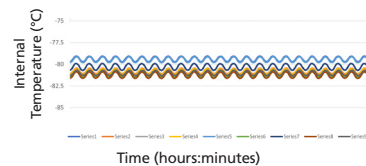
²⁾ The performance of the freezer will depend on factors such as the volume of customer products, storage configuration, selected options, operating conditions, test methods, and adherence to recommended maintenance practices.

³⁾ Ongoing product improvements may lead to changes or omissions in this technical data sheet without prior notice. PHC Corporation of North America disclaims responsibility for any damage, injury, loss, or expenses arising from the misuse of the information provided.



Temperature Uniformity Data ¹⁾

-80°C Setpoint at 23°C Ambient Temperature, Empty Freezer



Lines represent actual data at multiple interior locations.

¹⁾ 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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