

MDF-DC700VXC-PA

TwinGuard®

-86°C Ultra-Low Temperature Chest Freezer

25.3 cu.ft. | 715 L



MDF-DC700VXC-PA

The patented TwinGuard -86°C chest freezer is powered by a unique concept of two independent auto-cascade cooling circuits that work together, both independently and concurrently, to provide continuity in stored product protection over a range of real world conditions.

Ultimate Sample Protection

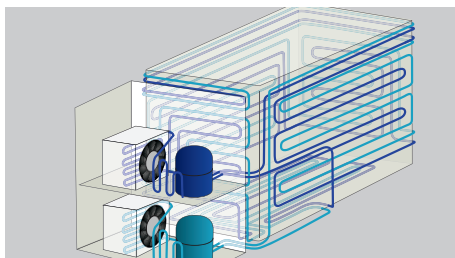
The dual cooling system offers the highest level of sample protection through the use of two independent refrigeration systems that maintain -86°C temperature. The two circuits work together for fast temperature recovery, while the secondary system keeps the temperature at -70°C if a service event occurs.

Efficient Sample Storage

The use of VIP® Plus cabinet and lid insulation, combined with a newly designed refrigeration system layout ensures a capacity of 520, 2" storage boxes, utilizing less floor space than competitive units.

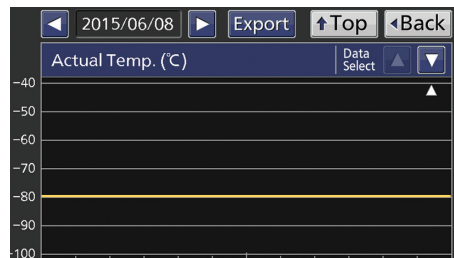
Security Control and Monitoring

A color LCD touchscreen allows full user control while the USB port makes transferring logged data to a PC convenient. All performance attributes are displayed and an internal time/temperature log is expressed in graphic form.



Valuable Sample Storage

With two independent systems, each sustaining ultra-low temperatures, your samples remain safe. Optional CO₂ backup provides an extra layer of protection.



Predictive Maintenance

Performance monitoring ensures the freezer is operating within specification. This protects the compressors and condenser fans. External stress on the compressors or fans, due to ambient temperature abnormality or excess load, is displayed for immediate notification.



Ease of Use

The display panel includes a comprehensive alarm system with audible and visual warnings, unit diagnostics and running temperature log.



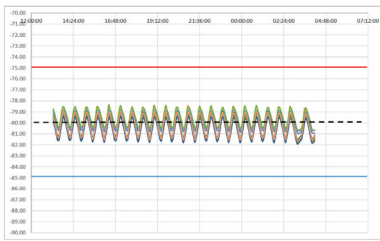
Model MDF-DC700VXC-PA

Improved Temperature Performance

The TwinGuard -86°C chest freezer design provides optimal temperature stability and uniformity during routine lid openings, minimizing the loss of cold air even when the freezer lid is open.

Temperature Uniformity Data:

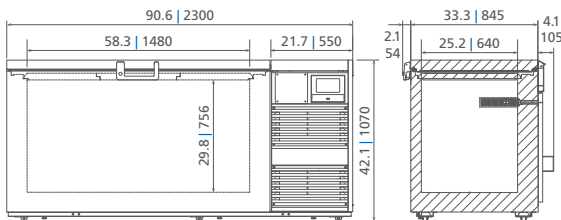
-80°C setpoint at 23°C ambient temperature, empty freezer



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.

Dimensions

Unit : inch | mm



Model Number		MDF-DC700VXC-PA
External Dimensions (W x D x H) ¹⁾	inches mm	90.6 x 37.6 x 42.1 2300 x 955 x 1070
Internal Dimensions (W x D x H)	inches mm	58.3 x 25.2 x 29.8 1480 x 640 x 756
Volume	cu.ft. liters	25.3 715
Net Weight	lbs kg	807 366
Capacity (2" boxes)	qty	520
Capacity (3" boxes)	qty	360
Inventory Racks (2" boxes)	qty	40
Inventory Racks (3" boxes)	qty	40
Performance		
Temperature Control Range Cooling Performance ²⁾	°C	-50 to -86 -86
Cooling Performance ²⁾	°C	-70
Service Event (System A or B)		
Uniformity	°C	±5 (-80 Set point)
BTU Nominal	Per Hour	4041
Noise ³⁾	dB(A)	52
Control		
Controller		Microprocessor, USB data retrieval, password protected
Display		LCD color touchscreen
Temperature Sensor		Pt-1000
Refrigeration		
Refrigeration System	qty	2 (auto-cascade)
Compressors	W	(2) 1100
Refrigerant		Mixed HC/HFC blended
Insulation Thickness, Material	inches mm	2.8 70, foamed-in-place + VIP Plus vacuum insulated panels
Construction		
Exterior Material		Painted steel
Interior Material		Stainless steel
Lid	qty	1 (key lock)
Sub Lids	qty	3 (insulated, foamed styrene)
Access Ports	qty	1: back wall
Access Port Diameter	inches mm	0.6 17
Casters	qty	6 (3 leveling feet)
Alarms (V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power Failure		V-B-R
Temperature (High and Low)		V-B-R
Sensor Failure		V-B-R
Door Open		V-B-R
Battery Check		V
Fan Motor Check		V
Cooling Circuit Abnormality		V-B-R
Remote Alarm Contacts		DC 30V 2A (normally open, normally closed, common)
Electrical		
Power Supply		208V-230V, 1Ø, 60Hz, NEMA 6-15P, requires NEMA 6-15R receptacle
Voltage Booster		Standard, automatic, built-in
Max Amps		8
Options		
Liquid CO ₂ Back-Up System		MDF-UB5-PW
Liquid Nitrogen Back-Up System		MDF-UB5-PW-LN2
Circular Type	6", 7 day circular	MTR-G85C w/ mounting plate MTR-85H
Chart Paper	5 charts per box	RP-G85-PW
Ink Pen	pack of 2	PG-R-PW
Optional Communication System		
Wireless, Cloud-Based, Automatic Data Management		LabAlert® Monitoring System [†] LabSVIFT -Gen2
4-20 mA		MTR420MAL- Loop Powered* MTR420MAC - Equipment Powered*
Certifications and Warranty		
Certification		QPS Listed
Warranty ⁴⁾		5 years parts and Labor

¹⁾ Exterior dimensions of cabinet excluding handle, rear stand-off brackets and other external projections. Consult sales rep for doorway entry instructions, less than 37.6".

²⁾ Air temperature measured at freezer center, ambient temperature +30°C, no load. Internal test data.

³⁾ Nominal value, background noise 20 dB(A)

⁴⁾ Current warranty offered at time of printing and may be subject to change; US and Canada only

* Manufactured by others

Specifications are subject to change without notice.

For latest specification information contact PHC Corporation of North America at info@us.phcd.com.

