

TwinGuard eco

Natural refrigerants

MDF-DU303VXH-PA Dual Cooling Natural Refrigerant -86°C Ultra-Low Temperature Freezer



Technical
Data Sheet

General Specifications		
Volume	cu.ft. liters	12.7 360
Temperature Control Range	°C	-40 to -86
External Dimensions (W x D x H)	inches mm	26.4 x 34.7 x 72.4 670 x 882 x 1838
Internal Dimensions (W x D x H)	inches mm	19.3 x 23.6 x 48.4 490 x 600 x 1230
Footprint	ft² m²	6.36 0.59
Stainless Steel Shelf (adjustable)	qty	3
Power Supply		208V-230V, 1Ø, NEMA 6-15P, requires NEMA 6-15R receptacle
Factory Certification		ISO9001, ISO13485, ISO14001
NRTL Testing Lab Mark		QPS listed
Net Weight	lbs kg	496 225
Noise Level*	dB(A)	52

Storage Specifications		
Racks per Freezer	qty	12
Racks per Shelf	qty	3
2" Boxes per Freezer	qty	240
3" Boxes per Freezer	qty	144

* 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 racking for cryoboxes and other containers. Please speak to your local representative for more information.

Refrigeration	
Refrigeration System	(2) Auto-cascade
Compressors	(2) 550 watt compressors (completely enclosed reciprocating type)
Condenser	Fin-less - filter less design
Evaporator	Tube on sheet type (cold wall)
Refrigerant	Mixed HC blend in each auto-cascade system (R-600/R-170/R-50) - 117.5g per compressor

Cabinet Construction	
Insulation	Rigid polyurethane foamed-in-place + VIP Plus® vacuum insulated panels: 3.1" (80 mm) thick
Exterior Material	Painted steel
Interior Material	Painted steel
Outer Door	1: key lock with provision for optional padlock
Vacuum Relief	2: one auto in door, one manual in side wall
Inner Doors	2 insulated with positive frame seal ABS, with stainless steel frames, positive latches



Model MDF-DU303VXH-PA showing insulated inner doors and EZlatch access.

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-86°C Ultra-Low Temperature Dual Cooling Upright Freezer

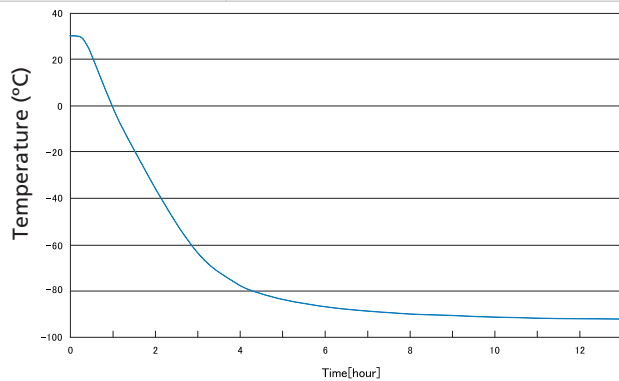
MDF-DU303VXH-PA

Performance Characteristics				
	23°C Ambient, empty chamber, measured at center of chamber			
Temperature Performance	-86°C			
Cooling Performance	-86°C			
Temperature Distribution Setpoint -80°C, center upper, center, lower of chamber	Within set value $\pm 5.0^\circ\text{C}$			
Pull-Down Time Empty cabinet	To -40°C 2 hr 25 mins (145.2 mins)	To -50°C 2 hrs 48 mins (168 mins)	To -70°C 3 hrs 30 mins (211 mins)	To -80°C 5 hrs (272 mins)
Power Consumption Setpoint -80°C	7.3 kWh/d			
Power Consumption Setpoint -70°C	5.8 kWh/d			
Temperature Uniformity Setpoint -80°C	$\pm 3.0^\circ\text{C}$			

Temperature Pull-Down

@ 30°C Ambient Temperature

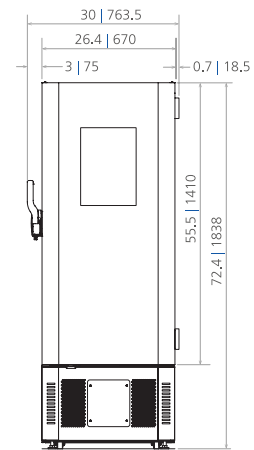
— Pull-down



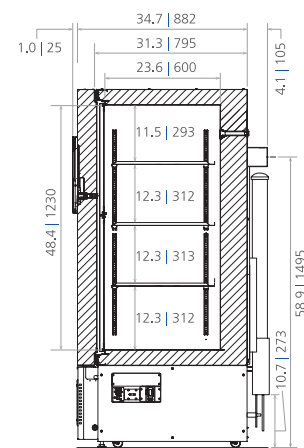
1. The data reflects performance metrics rather than official product specifications. Results from technical data sheet tests should not be used to establish regulatory parameters for specific customer applications.
2. The performance of the freezer will depend on factors such as the volume of customer 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 inches | mm

Front View

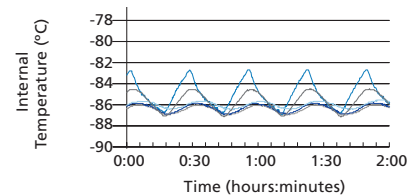


Side View



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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