



MDF-MU549DHL-PA

Biomedical ECO Freezer, -40°C

MDF-MU549DHL-PA
16.9 cu.ft. | 479 L



This -40°C Biomedical ECO Dual Chamber Freezer is designed for storage of enzymes, vaccines, pharmaceutical products and other biomedical materials at uniform temperatures. High performance refrigeration systems provide responsive cooling. A manual defrost function eliminates temperature fluctuation. Each chamber operates over a range of -20°C to -40°C, with separate setpoint in 1°C increments. The two door design minimizes exposure to stored product.

Natural Refrigerants and Inverter Technology

Naturally occurring hydrocarbon [HC] refrigerants have minimal effect on the environment and are compliant with environmental legislation for climate control. Combined with inverter technology, these refrigerants also provide more efficient cooling without compromising cooling performance, ambient tolerance and recovery speeds following door openings.

Smart Cabinet Design

Two door access allows more flexibility for secure sharing among labs. Each chamber includes three wire shelves, two adjustable and one fixed. Optional open top bins can be added to hold common 2" or 3" freezer boxes, as well as miscellaneous packaging. High density CFC-free and low GWP foamed-in-place insulation creates a temperature resistant wall structure. Doors are lockable. Painted steel interior surfaces simplify cleaning.

ENERGY STAR® Qualified

Power consumption at rated storage temperatures confirms significant energy saving performance of the Biomedical ECO natural refrigerant platform. Power data published herein is based on internal results of production freezer testing prior to submittal for independent third-party evaluation similar to that now applied to other ENERGY STAR Certified PHCbi freezers in the same class.



Energy Efficient Performance

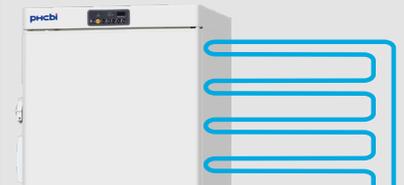
Natural refrigerant, high performance inverter compressors, DC condenser fans and integrated electronic controls combine to manage overall performance, protect stored product and lower operating costs by up to 28%* compared to conventional models. Performance is rated at 115V, AC, ambient temperature 40°C, with a wide tolerance for high ambient temperatures.

*Compared to conventional models. Power source: 115V 60Hz, Ambient temperature 30°



Microprocessor Controller and Alarms

The microprocessor-based temperature control system with LED display maintains accurate setpoint temperature to within 1°C over a range of -20°C to -40°C. Each chamber can be controlled independently. Temperature display for each chamber can be shown simultaneously or individually. Audible and flashing visual alarm lights supplement the setpoint deviation system to warn of parameter violations and loss of power.



High Performance Refrigeration

The refrigeration systems and variable speed inverter compressor responds to demand for cooling based on temperature setpoint, frequency of door openings, ambient temperature in the location and heat intrusion through the composite insulated walls. Strategic integration of embedded cooling coils creates a uniform cold-wall surface for fast response at temperatures as low as -40°C top to bottom.



Model MDF-MU549DHL-PA shown with optional storage bins.



Product Protection

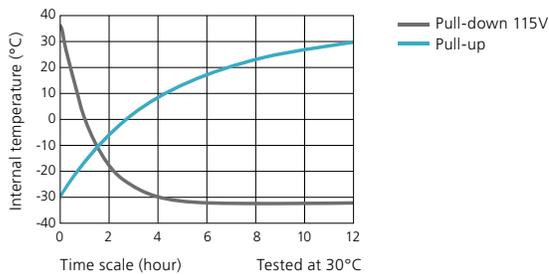
The Model MDF-MU549DHL-PA -40°C upright Biomedical ECO freezer with two independent chambers offers stable temperature and utility value when cabinet sharing is desired.

Flexibility and Convenience

Optional large open top bins, six per chamber, allows for storage of 2" and 3" high freezer inventory boxes or other types of containers. Cleaning is made easy with the painted steel interior and exterior. One key lock for each door. One-handed door latch operation permits easy opening and closing. Each door latch lock offers added security as an optional padlock can be installed.

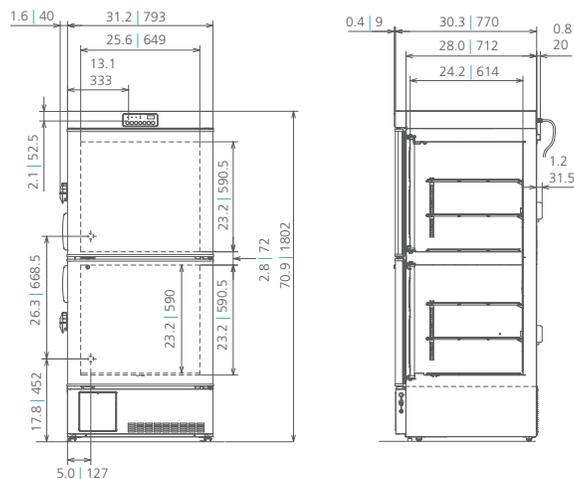
Temperature Uniformity Data

As interior air temperature stabilizes at the desired setpoint, large mass storage volume assures close temperature uniformity at all locations within the insulated cabinet.



Dimensions

Unit : inch | mm



MDF-MU549DHL-PA

Model Number		MDF-MU549DHL-PA
Exterior Dimensions (W x D x H) ¹⁾	inches mm	31.2 x 30.3 x 70.9 793 x 770 x 1802
Interior Dimensions (W x D x H)	inches mm	25.6 x 24.2 x 23.6 649 x 614 x 600 (each chamber)
Volume	cu. ft. liters	16.9 479 (total) (8.46 239.5 each chamber)
Net Weight	lbs kg	363.8 165
Capacity (2" boxes) Bin Freezer	qty	24 144 per chamber (288 total freezer)
Capacity (3" boxes) Bin Freezer	qty	16 96 per chamber (192 total freezer)
Bin Capacity	qty	6 per chamber (12 total)
Performance		
Warranty ²⁾		2 years parts / labor, 3 years compressor parts
Cooling Performance ³⁾	°C	-40
Temperature Setting Range	°C	-18 to -45 in 1°C increments
Temperature Control Range ³⁾	°C	-20 to -40 in 1°C increments
Control		
Controller		Microprocessor, touchpad data entry, password protected
Display		LED
Temperature Sensor		Thermistor (one for each chamber)
Refrigeration		
Refrigeration System		Cold wall
Compressor	W	(2) 400 (inverter type)
Refrigerant		CFC-free R-290
Defrost		Manual
Insulation Material		Rigid polyurethane, foamed-in-place, low GWP
Insulation Thickness	inches mm	2.8 70
Construction		
Exterior and Interior Material		Painted steel
Door	qty	2
Outer Door - Key Lock	qty	1 (one lock for each door)
Additional Door Lock	qty	2 (Door latch with hasp for padlock)
Wire Shelves, Vinyl Coated	qty	6 (4 adjustable)
Shelf Dimension (W x D)	inches mm	24.6 x 20.1 624 x 510
Max. Load per Shelf	lbs kg	66.1 30
Max. Load - Total Freezer	lbs kg	198.4 90 per chamber (396.8 180 total freezer)
Access Port	qty	2 standard (one each chamber)
Access Port Position		Back wall, left hand corner (facing unit)
Access Port Diameter	inches mm	1.2 30
Casters	qty	4
Leveling Feet		2 (on front of base)
Alarms (V=Visual, B=Buzzer, R=Remote Alarm)		
Power Failure		V-B-R
High Temperature		V-B-R
Low Temperature		V-B-R
Electrical and Noise Level		
Power Supply		115V, 60Hz, 1Ø, NEMA 5-15P, requires NEMA 5-15R receptacle
Noise Level ⁴⁾	dB(A)	42
Options		
Storage Bin ⁵⁾	Sold in sets of 2	MDF-055C-PW (6 sets per cabinet maximum)
Temperature Recorders		
Circular Type Two Pen	6", 7 Day Circular	MTRC955
Chart Paper ⁶⁾ -40°C to 30°C	52 charts per box	C740306REV
Red Ink Pen	pack of 6	R252
Blue Ink Pen	pack of 6	R253
Optional Communication System		
Wireless, Cloud-Based, Automatic Data Management		LabAlert® Monitoring System

¹⁾ External dimensions of main cabinet only. Excluding the door handle and other external projections

²⁾ Current warranty offered at time of printing and may be subject to change; US and Canada only

³⁾ Air temperature measured at freezer center, ambient temperature +30°C, no load

⁴⁾ Nominal value - Background noise 20 dB(A)

⁵⁾ Optional Bin, interior base dimensions 11" (280 mm) W x 21.65" (550 mm) F to B, height 6.2" (157.5 mm) H

⁶⁾ Other ranges available upon request

Specifications are subject to change without notice.

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



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