



MDF-MU539HL-PA

# Biomedical ECO Freezer, -30°C

MDF-MU539HL-PA  
17.8 cu.ft. | 504 L



The PHCbi brand -30°C Biomedical ECO Freezer provides a stable and reliable environment for storing of enzymes, vaccines, pharmaceutical products and other biomedical materials with uniform temperatures. The freezer incorporates a manual defrost that eliminates temperature fluctuation during operation. Configurable temperature ranges from -20°C to -30°C. The double door design only exposes half the stored product when one door is open.

## 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.

## Safe Sample Storage

The double door design exposes only half the stored product when one door is open. A standard door latch lock adds security, and an optional padlock can be installed to expand the envelope of protection. Protection and safety features include heavy duty, door-mounted sealing gaskets to eliminate cold air loss. High and low temperature deviation alarms warn of temperature setpoint violations and door ajar events.

## 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, a high performance inverter compressor, DC condenser fan 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 30°C, with a wide tolerance for high ambient temperatures.



## 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 -30°C. Audible and flashing visual alarm lights supplement the setpoint deviation system to warn of parameter violations, or loss of power.



## Smart Cabinet Design

Space-saving design allows more installation options in crowded laboratories or warm hallways. The cabinet includes 5 adjustable wire shelves. Optional open top bins can be added to hold common 2" or 3" freezer boxes, as well as miscellaneous goods. High density CFC-free and low GWP foamed-in-place insulation creates a temperature resistant wall structure. Painted steel interior surfaces simplify cleaning.



**Stored Product Protection**

The two door Biomedical ECO freezer creates a stable temperature environment in a space-saving upright cabinet designed for flexible storage.

**Manual Defrost Condensate Removal**

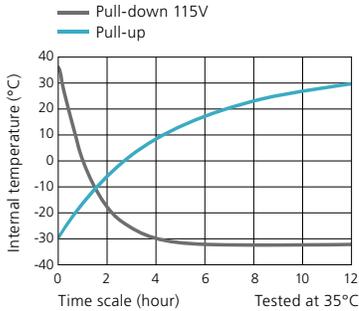
Occasional manual defrosting maintains the most efficient performance. An integrated condensate drain hose permits easy removal of water and stows out of the way when not in use.



Model MDF-MU539HL-PA shown with optional storage bins.

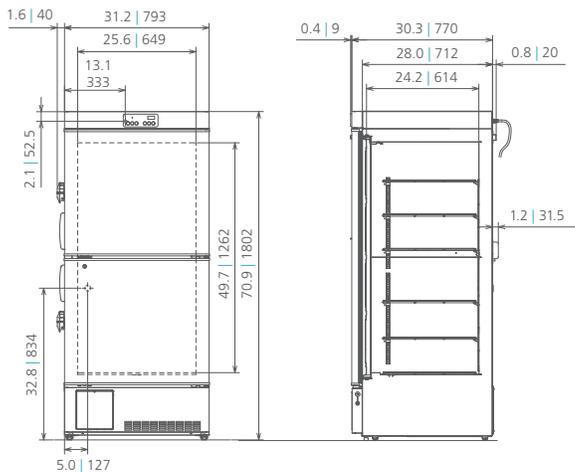
**Temperature Uniformity**

Stored product creates a thermal mass that enhances interior temperature uniformity. Multiple interior cold wall surfaces remove heat quickly and efficiently while maintaining uniformity.



**Dimensions**

Unit : inch | mm



Model Number		MDF-MU539HL-PA
Exterior Dimensions (W x D x H) <sup>1)</sup>	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 49.7   649 x 614 x 1262
Volume	cu. ft.   liters	17.8   504
Net Weight	lbs   kg	317.5   144
Capacity (2" boxes) Bin   Freezer	qty	24   288
Capacity (3" boxes) Bin   Freezer	qty	16   192
Bin Capacity	qty	12
<b>Performance</b>		
Warranty <sup>2)</sup>		2 years parts / labor, 3 years compressor parts
Cooling Performance <sup>3)</sup>	°C	-30
Temperature Setting Range	°C	-18 to -35 in 1°C increments
Temperature Control Range <sup>3)</sup>	°C	-20 to -30 in 1°C increments
<b>Control</b>		
Controller		Microprocessor, touchpad data entry, password protected
Display		LED
Temperature Sensor		Thermistor
<b>Refrigeration</b>		
Refrigeration System		Cold wall
Compressor	W	(1) 250 (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
<b>Construction</b>		
Exterior and Interior Material		Painted steel
Door	qty	2
Outer Door - Key Lock	qty	1 (one lock for each door)
Additional Door Lock	qty	Door latch with hasp for padlock
Wire Shelves, Vinyl Coated	qty	6 (5 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	396.6   180
Access Port	qty	(1) Standard
Access Port Position		Back wall, left hand corner (facing unit)
Access Port Diameter	inches   mm	1.1   30
Casters	qty	4
Leveling Feet		2 (on front of base)
<b>Alarms (V=Visual, B=Buzzer, R=Remote Alarm)</b>		
Power Failure		V-B-R
High Temperature		V-B-R
Low Temperature		V-B-R
<b>Electrical and Noise Level</b>		
Power Supply		115V, 60Hz, 1Ø, NEMA 5-15R, requires NEMA 5-15R receptacle
Noise Level <sup>4)</sup>	dB(A)	42
<b>Options</b>		
Storage Bin <sup>5)</sup>	Sold in sets of 2	MDF-055C-PW (6 sets per cabinet maximum)
<b>Temperature Recorders</b>		
Circular Type	6", 7 Day Circular	MTRC954
Chart Paper	52 charts per box	C740306REV
Ink Pen	pack of 6	R252
<b>Optional Communication System</b>		
Wireless, Cloud-Based, Automatic Data Management		LabAlert® Monitoring System

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

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

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

<sup>4)</sup> Nominal value - Background noise 20 dB(A)

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

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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