



MDF-MU339HL-PA

# Biomedical ECO Freezer, -30°C

MDF-MU339HL-PA  
13.0 cu.ft. | 369 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 practical size saves space in the laboratory. An occasional manual defrost, if required, eliminates minor temperature fluctuations during operation. Configurable temperature ranges from -20°C to -30°C.

## 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

Protection and safety features include heavy duty, door-mount sealing gasket to eliminate cold air loss. High and low temperature deviation alarms warn of temperature setpoint violations and door ajar events. A standard door latch lock adds security, and an optional padlock can be installed to expand the envelope of protection.

## ENERGY STAR® Certified <sup>1)</sup>

These biomedical freezers utilize unique high performance laboratory and clinical grade refrigeration systems to provide dependable cooling by balancing temperature performance and energy management. Power data is from third party lab testing and can be found on the ENERGY STAR site.



## Energy Efficient Performance

Natural refrigerant, a high performance inverter compressor and integrated electronics 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.

<sup>1)</sup> <https://www.energystar.gov/productfinder/product/certified-lab-grade-refrigeration/details/2371438>



### Stored Product Protection

The single door Biomedical ECO freezer creates stable temperature storage in a space-saving cabinet.

### Manual Defrost Condensate Removal

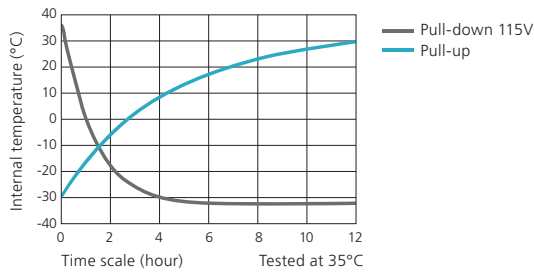
Occasional manual defrosting maintains the most efficient freezer performance. An integrated condensate drain hose permits easy removal of water and stows out of the way when not in use.



Model MDF-MU339HL-PA shown with optional storage bins.

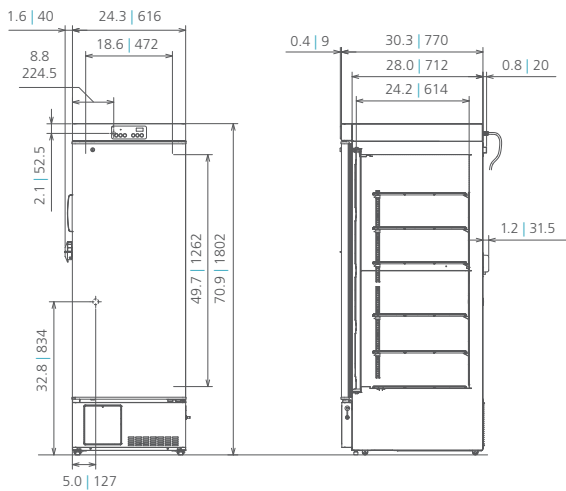
### Temperature Uniformity

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-MU339HL-PA   |
|--|--------------------|--|
| Exterior Dimensions (W x D x H) <sup>1)</sup>    | inches   mm        | 24.3 x 30.3 x 70.9   616 x 770 x 1802  |
| Interior Dimensions (W x D x H)                  | inches   mm        | 18.6 x 24.2 x 49.7   472 x 614 x 1262  |
| Volume   | cu. ft.   liters   | 13.0   369   |
| Net Weight                                       | lbs   kg           | 269   122  |
| Capacity (2* boxes) Bin   Freezer                | qty                | 36   216   |
| Capacity (3* boxes) Bin   Freezer                | qty                | 24   144   |
| Bin Capacity                                     | qty                | 6  |
| Performance <sup>2) 3) 4)</sup>                  |                    |  |
| Temperature Control Range                        | °C                 | -20 to -30 in 1°C Increments   |
| Uniformity                                       | ±                  | 4  |
| Power Consumption                                | kWh/day            | 2.03   |
| BTU Nominal                                      | Per hour           | 341  |
| Noise Level <sup>5)</sup>                        | dB(A)              | 42   |
| Control  |                    |  |
| Controller                                       |                    | Microprocessor, touchpad data entry, password protected                      |
| Display  |                    | LED  |
| Temperature Sensor                               |                    | Thermistor   |
| Refrigeration                                    |                    |  |
| Refrigeration System                             |                    | Cold wall  |
| Compressor                                       | W                  | (1) 250 (variable speed - inverter driven)                                   |
| Refrigerant                                      |                    | CFC-free R-290 - 65 grams  |
| 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                | 1  |
| Outer Door - Key Lock                            | qty                | 1  |
| Additional Door Lock                             | qty                | Door latch with provision for padlock  |
| Wire Shelves, Vinyl Coated                       | qty                | 6 (5 adjustable)   |
| Shelf Dimension (W x D)                          | inches   mm        | 17.6 x 20.1   447 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)   |
| Alarms (V=Visual, B=Buzzer, R=Remote Alarm)      |                    |  |
| Power Failure                                    |                    | V-B-R  |
| High Temperature                                 |                    | V-B-R  |
| Low Temperature                                  |                    | V-B-R  |
| Electrical                                       |                    |  |
| Power Supply                                     |                    | 115V, 60Hz, 1Ø, NEMA 5-15P; requires NEMA 5-15R receptacle - 8 ft power cord |
| Max Amps   |                    | 2.1  |
| Options  |                    |  |
| Storage Bin <sup>6)</sup>                        | Sold in sets of 2  | MDF-03SC-PW  |
| Circular Type                                    | 6", 7 Day Circular | MTR-G85A-PA w/ fixing plate MPR-S7-PW  |
| Chart Paper                                      | 55 charts per box  | RP-G85-PW  |
| Ink Pen  | pack of 2          | PG-R-PW  |
| Optional Communication System                    |                    |  |
| Wireless, Cloud-Based, Automatic Data Management |                    | LabSVIFT Gen 2   LabAlert Monitoring System *                                |
| 4-20mA output module                             |                    | MTR-420MA-PA   MTR420MAL- Loop Powered *   MTR420MAC - Equipment Powered*    |
| Certifications and Warranty                      |                    |  |
| Certification                                    |                    | QPS listed and ENERGY STAR   |
| Warranty <sup>7)</sup>                           |                    | 3 years and parts and labor  |

<sup>1)</sup> External dimensions of main cabinet only. Excluding the door handle and other external projections  
<sup>2)</sup> 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.  
<sup>3)</sup> 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.  
<sup>4)</sup> 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.  
<sup>5)</sup> Nominal value- Background noise 20 dB(A)  
<sup>6)</sup> Optional Bin, interior base dimensions 16.45" (418 mm) W x 21.65" (550 mm) F to B, height 6.2" (157.5 mm) H  
<sup>7)</sup> Current warranty offered at time of printing and may be subject to change; US and Canada only.  
 \* Manufactured by others



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