

MDF-DU700ZHA-PA, 115V
MDF-DU700ZH-PA, 220V

FrostLess

Natural Refrigerant -86°C Freezer

25.6 cu.ft. | 725 L



MDF-DU700ZHA-PA



Experience the quality of PHCbi brand ultra-low temperature storage. The FrostLess ultra-low freezer ensures the reliability and energy efficiency modern laboratories demand with less frost build-up. The cutting-edge thermal insulation design helps combat frost build-up to reduce freezer stress and preserve high performance.

Frost Resistant Inner Doors

Frost accumulation may cause damage and deterioration of freezer components. The all new thermal insulation design prevents large amounts of frost buildup on the outside of the inner doors of the FrostLess ultra low freezer, reducing maintenance requirements. Less frost buildup puts less stress on the outer door and latching mechanism to help preserve optimal performance.

ENERGY STAR® Certified¹

Smart compressors, natural refrigerants and integrated electronics combine to lower your facility's operating costs.

7.9 kWh/day*, steady state at -80°C in a 24°C ambient

6.2 kWh/day*, steady state at -70°C in a 24°C ambient

The use of environmentally friendly, natural refrigerants minimize environmental impact without compromising ultra-low temperature performance, helping achieve sustainability goals.

* 3rd party test lab data

Control and Monitoring

An eye level, door mounted 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 temperature log is expressed in graphic form over time. Optional cloud services for remote monitoring are available.



Frost Mitigation

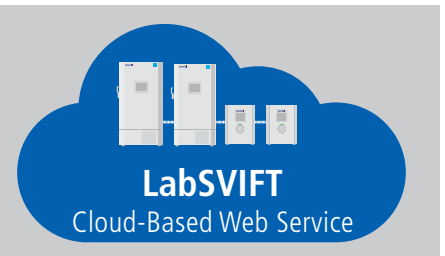
Using the residual heat from the refrigeration system, the perimeter heater under the gasket allows for gentle warmth reducing ice buildup on the door gasket. Less frost build-up reduces manual labor and improves lab workflow.

* Red color used for illustrative purposes.



EZlatch

The EZlatch is our holistic approach to accessing the freezer. This feature is engineered to tolerate frequent door openings and simplify freezer access through one-handed operation.



LabSVIFT Cloud Services

Obtain remote monitoring of critical freezer functions including:

- Real time chamber temperature
- Alarm conditions
- Door openings
- Ambient temperature
- Audit trails (optional)



MDF-DU700ZHA

Legacy Model

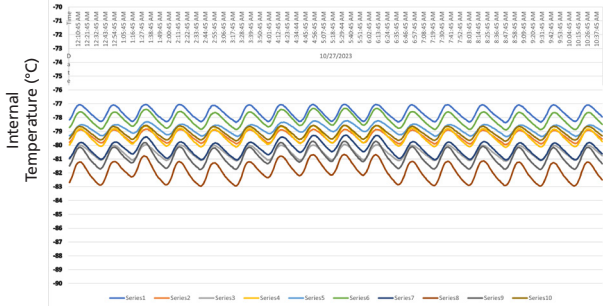
Unit on the left represents reduction in frost build-up compared to our legacy models.

Meet Sustainability and Budget Goals

The use of energy efficient, natural refrigerants combined with an inverter-controlled compressor, lowers operational costs, environmental impact, and total cost of ownership.

Temperature Uniformity Data:

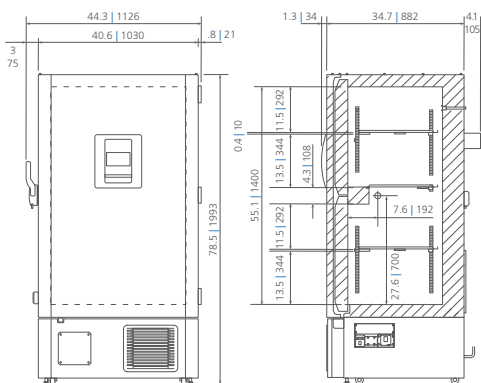
-80°C setpoint at 23°C ambient temperature, empty freezer



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



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Model Number		MDF-DU700ZHA-PA MDF-DU700ZH-PA
External Dimensions (W x D x H) ¹⁾	inches mm	40.6 X 34.7 x 78.5 1030 x 882 x 1993
Internal Dimensions (W x D x H)	inches mm	34.3 x 23.9 x 55.1 870 x 607 x 1400
Volume	cu.ft. liters	25.6 725
Net Weight	lbs kg	622 282
Box Capacity	2" 3"	528 336
2" Racks	qty	(12) SUR 624 and (12) SUR 524 or (12) SDR 624 and (12) SDR 524
3" Racks	qty	(12) SUR 434 and (12) SUR 334 or (12) SDR 434 and (12) SDR 334
Performance		
Temperature Control Range	°C	-40 to -86
Uniformity ²⁾	°C	±5 (-80 Set point)
Power Consumption	kWh/Day	7.9 (-80°C Steady state)
BTU Nominal	Per Hour	1118
Noise Level ³⁾	dB(A)	52
Ambient Temperature Operating Range	°C	+5 to +30
Control		
Controller		Microprocessor with non-volatile memory, USB data retrieval
Digital Temperature Display		LCD Touchscreen
Controller Security		Screen lock w/ password protection
Temperature Sensor		RTD
Refrigeration		
Cooling Method		Cold Wall (Synchronized variable speed cascade system)
Compressors	High Stage Low Stage	920 W Variable 920 W Variable
Refrigerant Type (Natural Refrigerant)	High Stage Low Stage	R-290 R-170
Insulation		Rigid polyurethane foam (PUF) + VIP Plus vacuum insulated panels
Construction		
Exterior Material		Painted Steel
Interior Material		Painted Steel
Outer Door	qty	1 lock with set of 2 keys (provision for optional pad lock)
Inner Doors	qty	2 VIP insulated with latch
Shelves	qty	2 Stainless Adjustable Dedicated Center Shelf
Shelf Dimensions (W x D)	inches mm	2 Stainless Adjustable: 33.7 x 21 855 x 534 1 Dedicated Center: 33.7 x 18.1 855 x 461
Max. Load per Shelf	lbs kg	110 50
Access Ports, Qty, Position, Diameter	qty	3: upper wall (back-up system), bottom left (recorder sensor), bottom right (access) 0.6 in 17mm
Casters Leveling Legs	qty	4 2
Vacuum Release	qty	1 Manual
Alarms (V= Visual Alarm, B= Buzzer Alarm, R= Remote Alarm, A= Adjustable, L= Logged)		
Power Failure		V-B-R-L
Temperature (High and Low)		V-B-R-L-A
Sensor Failure		V-B-R-L
Door Open		V-B-L
Maintenance Alert		V-L
Remote Alarm Contacts		DC 30V 2A (normally open, normally closed, common)
Electrical		
Power Supply		115V, 60HZ, NEMA 5-15P, 8 ft cord length 220V, 60HZ, NEMA 6-15P, 8 ft cord length
Running Amps Max Amps		2.2 10.5
Options		
Circular Type Chart Recorders		MTR-G85A (115V) MTR-G85C (220V)
Chart Paper/ Ink Pen		RP-G85-PW / PG-R-W
Backup System		MDF-UB7-PW MDF-UB7-PW-LN2
Optional Communication System		
Wireless, Cloud-Based, Automatic Data Management		LabSVIFT® LabAlert® V-SAFER®
4-20mA Output Module		MTR420MAL- Loop Powered® MTR420MAC- Equipment Powered® MTR-420MA-PW
Certifications and Warranty		
Certification		QPS Listed and Energy Star
Warranty ⁵⁾		5 years parts and labor

¹⁾ Exterior dimensions of cabinet excluding handle, rear stand-off brackets and other external projections.

²⁾ Factory testing at ambient temperature of 23°C using 17 points.

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

⁴⁾ Requires MTR-480 to operate as Gen 2 on LabSVIFT System.

⁵⁾ 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. Performance data herein is based on independent testing at time of publication.

