



MDF-DU502VH-PA | FZR19-ULT-220

VIP® ECO

ENERGY STAR® Certified
Natural Refrigerant -86°C Freezer

MDF-DU502VH-PA, 220V | FZR19-ULT-220
MDF-DU502VHA-PA, 115V | FZR19-ULT-115

18.6 cu.ft. | 528 L



Ideal for new or replacement installations requiring a 115V or 220V connection, the VIP ECO 18.6 cu.ft. (528 L) upright ultra-low temperature freezer delivers the lowest daily energy usage.¹⁾ Performance, reliability and energy efficiency combine to secure your most valuable biological samples.

Performance and Reliability

The robust refrigeration system provides dependable cooling and temperature performance through specialty engineered heat transfer components and time tested natural refrigerants. Reserve refrigeration power assures exceptionally fast temperature recovery following door openings. Performance and reliability are never compromised when it comes to storing your valued products.

Energy Efficient,¹⁾ Balanced Power

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

- 0.35 kWh/cu.ft. Daily Energy Consumption
- 6.75 kWh/day, Steady State at -80°C
- 5.20 kWh/day, Steady State at -70°C

Temperature Uniformity

- ±1.38°C at -80°C
- ±2.51°C at -70°C

Security 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, plus an internal time/temperature log is expressed in graphic form.



Natural Refrigerants

Natural refrigerants minimize environmental impact without jeopardizing ultra-low temperature freezer performance.



EZlatch

EZlatch is the centerpiece of a holistic access and frost mitigation system. Simplified one-handed operation maintains the integrity of the door seal to assure energy efficiency.



Ease of Use

A full function display panel includes audible and visual warnings, unit diagnostics, temperature and door opening history.

VIP^{ECO} -86°C ULT Upright Freezer



The outer door gasket is easily removed and replaced without tools while the freezer remains in operation.

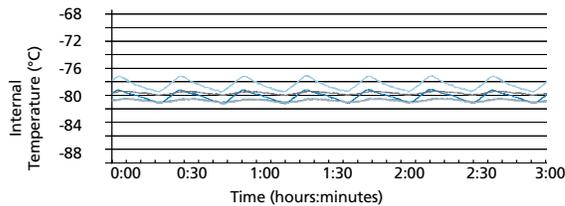
Model MDF-DU502VH-PA | FZR19-ULT-220

Efficient Sample Storage

The upright cabinet design employs patented VIP Plus insulated panels that offer space efficiency. This allows the freezer cabinet to maximize storage space, holding up to 384, 2" boxes within a 7.49 sq.ft. (0.70 m²) footprint.

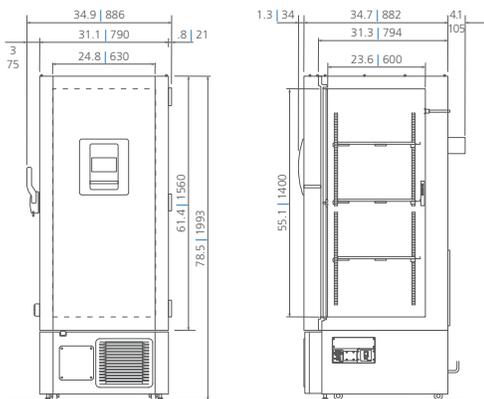
Temperature Uniformity Data:

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



Dimensions

Unit : inch | mm



*Note: External cabinet depth of 37.5" (952 mm) permits passage through a standard 38" (965 mm) doorway when rear stand-off brackets are removed, four screws. Bracket removal is not required for 40" (1016 mm) doorway.

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Model Number	MDF-DU502VH-PA FZR19-ULT-220	MDF-DU502VHA-PA FZR19-ULT-115
External Dimensions (W x D x H) ¹⁾	inches mm 31.1 x 34.7 x 78.5 790 x 882 x 1993	
Internal Dimensions (W x D x H)	inches mm 24.8 x 23.6 x 55.1 630 x 600 x 1400	
Volume	cu.ft. liters 18.6 528	
Net Weight	lbs kg 542 246	
Capacity (2" boxes)	qty 384	
Capacity (3" boxes)	qty 256	
Inventory Racks (2" boxes)	qty 16	
Inventory Racks (3" boxes)	qty 16	
Performance		
Warranty ²⁾	5 years parts and labor	
Cooling Performance ³⁾	°C -86	
Temperature Setting Range ³⁾	°C -50 to -90 in 1° increments	
Temperature Control Range ³⁾	°C -50 to -86 in 1° increments	
Control		
Controller	Microprocessor, touchscreen data entry, password protected	
Display	LCD color touchscreen	
Temperature Sensor	Pt-1000	
Refrigeration		
Refrigeration System	Synchronized variable speed cascade system	
Compressors	W (2) 750, variable speed	
Refrigerant	High-stage R-290 natural refrigerant Low-stage R-170 natural refrigerant	
Insulation Thickness, Material	inches mm 3.1 80, foamed-in-place + VIP Plus vacuum insulated panels	
Construction		
Exterior Material	Painted electrogalvanized steel	
Interior Material	Powder coated electrogalvanized steel	
Outer Door	qty 1 (key lock with provision for optional pad lock)	
Inner Doors	qty 2 (insulated, ABS, stainless steel frames, positive latches)	
Shelves	qty 3 (adjustable)	
Shelf Dimensions (W x D)	inches mm 24.2 x 21.0 615 x 534	
Max. Load per Shelf	lbs kg 110 50	
Auto Vacuum Relief	qty 1: in door	
Manual Vacuum Relief	qty 1: lower left side	
Access Ports	qty 3: upper back wall (back-up system), bottom left (recorder sensor), bottom right (access)	
Access Port Diameter	inches mm 0.6 17	
Casters	qty 4 (2 leveling feet on front base)	
Alarms (V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power Failure	V-B-R	
Temperature (High and Low)	V-B-R	
Sensor Failure	V-B-R	
Filter Alarm	V-B	
Door Open	V-B	
Battery Check	V	
Remote Alarm Contacts	DC 30V 2A (normally open, normally closed, common)	
Electrical and Noise Level		
Power Supply	220V, 1Ø, NEMA 6-15P, requires NEMA 6-15R receptacle 115V, 1Ø, NEMA 5-20P, requires NEMA 5-20R receptacle	
Noise Level ⁴⁾	dB(A) 46	
Options		
Inner Door Kit with 5 Smaller Doors ⁵⁾	MDF-SID5-PW	
Inner Door Kit with 4 Smaller Doors ⁵⁾	MDF-SID4-PW	
Liquid CO ₂ Back-Up System	MDF-UB7-PW	
Temperature Recorder		
Circular Type	6", 7 day circular MTRC954	
Chart Paper	52 charts per box C7100386REV	
Ink Pen	pack of 6 R252	
Optional Communication System		
Wireless, Cloud-Based, Automatic Data Management	LabAler [®] Monitoring System	

¹⁾ Exterior dimensions of main cabinet only, excluding 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⁾ Actual value, background noise 20 dB(A)

⁵⁾ Installation of small inner door kit may affect usable storage capacity

Specifications are subject to change without notice.

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



PHC Corporation of North America

