



MDF-DU502VH-PA

# VIP® ECO

ENERGY STAR® Certified  
Natural Refrigerant -86°C Freezer

MDF-DU502VH-PA, 220V  
MDF-DU502VHA-PA, 115V

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.<sup>1)</sup> 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,<sup>1)</sup> 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.

<sup>1)</sup> Based on independent third-party testing at time of publication. ENERGY STAR test results for submitted products can be compared for performance across the competitive market. For results see the ENERGY STAR website [www.energystar.gov/productfinder/product/certified-lab-grade-refrigeration/details/2303094](http://www.energystar.gov/productfinder/product/certified-lab-grade-refrigeration/details/2303094). See Certification Number 4788321237.





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

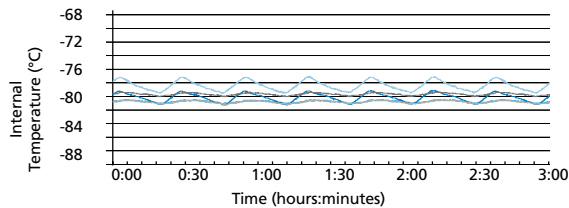
Model MDF-DU502VH-PA

### 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 m<sup>2</sup>) footprint.

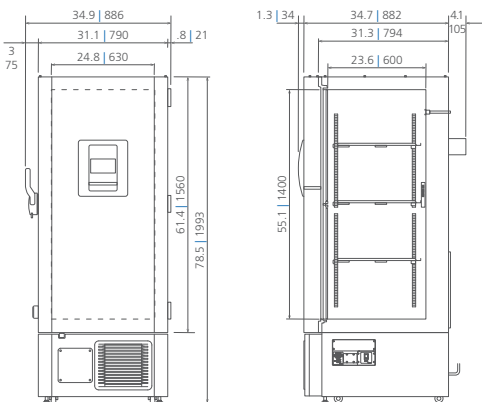
### Temperature Uniformity Data:

-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.

Model Number	MDF-DU502VH-PA	MDF-DU502VHA-PA
External Dimensions (W x D x H) <sup>1)</sup>	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 <sup>2)</sup>		5 years parts and labor	
Cooling Performance <sup>3)</sup>	°C	-40 to -86	-50 to -86
Temperature Setting Range <sup>3)</sup>	°C	-40 to -90 in 1° increments	-50 to -90 in 1° increments
Temperature Control Range <sup>3)</sup>	°C	-40 to -90 in 1° increments	-50 to -90 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 <sup>4)</sup>	dB(A)	46	

Options		
Inner Door Kit with 5 Smaller Doors <sup>5)</sup>		MDF-5ID5-PW
Inner Door Kit with 4 Smaller Doors <sup>5)</sup>		MDF-5ID4-PW
Liquid CO <sub>2</sub> 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		LabAlert® Monitoring System

<sup>1)</sup> Exterior dimensions of main cabinet only, excluding 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> Actual value, background noise 20 dB(A)  
<sup>5)</sup> Installation of small inner door kit may affect usable storage capacity