



# VIP ECO

Natural Refrigerants -86°C Upright Freezer

528 L











# Cost-saving and environmentally friendly sample storage within an optimal footprint

The MDF-DU502VH VIP ECO -86°C Upright Freezer provides maximum sample storage capacity within an optimum footprint combined with natural refrigerants to minimise energy consumption, reduce environmental impact and save money.

# **Efficient Refrigeration**

Naturally occurring hydrocarbon (HC) refrigerants provide more efficient cooling due to their high latent heat of evaporation. As well as improved performance this leads to reduced power consumption and energy costs.

# **Inverter Technology**

The MDF-DU502VH VIP ECO ULT Freezer contains Inverter Compressors that maximise cooling performance under different conditions, and contribute to reducing the energy consumption of the freezer.

# **Intelligent Interface**

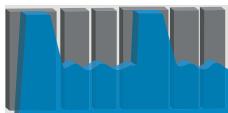
The EZlatch makes access to stored samples even easier.

A colour LCD touch panel allows full user control, even with gloved hands, while the USB port makes transferring logged data to a PC simple and convenient.



### **Environmentally Friendly**

Ideal for laboratories looking to reduce their carbon footprint and environmental impact to comply with sustainability policies.



#### **Uniform Sample Storage**

Inverter compressors provide optimum stability, while quality of design ensures reliability. Ideal for samples that are sensitive to temperature fluctuations.



#### **Easy Data Monitoring**

Important information such as freezer temperature, door opening times and alarm history is logged for monitoring in GLP applications.

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# **Inverter Compressors**

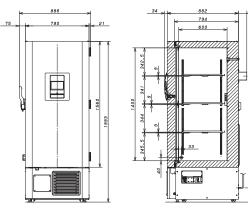
While conventional freezers use single speed compressors which cycle on and off, the MDF-DU502VH VIP ECO ULT Freezer contains inverter compressors that can run at different speeds to maximise cooling performance under different conditions. Combined with hydrocarbon refrigerants, these compressors ensure the most efficient energy use and reduced heat output.

#### Efficient & Flexible Sample Storage

The combination of VIP PLUS vacuum insulation and an enhanced cabinet design with insulated outer door, ensures optimum temperature uniformity, while the reduced wall thickness maximizes storage capacity. Multiple shelf configurations allow a variety of storage options. Organize your samples byźtransferring your current inventory racks.

#### **Innovative Cabinet Design**

The enhanced cabinet design with chamfered edges reduces footprint for use in multi freezer laboratories.



MDF-DU502VH-PF



The MDF-DU502VH-PE is certified as a Class IIa Medical Device (93/42/EEC and 2007/47/EC) for medical purposes of storing human cells, organs, plasma and DNA.

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PHC Europe B.V.

Model Number		MDF-DU502VH-PE
External Dimensions (W x D x H) <sup>1)</sup>	mm	790 x 882 x 1993
Internal Dimensions (W x D x H)	mm	630 x 600 x 1400
Volume	litres	528
Net Weight	kg	246
Capacity	2" boxes	384
Performance		
Cooling performance <sup>2</sup>	°C	-86
Temperature setting range	°C	-50 to -90
Temperature control range <sup>2)</sup>	°C	-50 to -86
Control		
Controller		Microprocessor, non-volatile memory
Display		LCD Touch Screen
Temperature sensor		Pt-1000
Refrigeration		
Refrigeration system		Cascade
Compressors	W	2 x 750
Refrigerant		HC
Insulation material		PUF / VIP Plus
Insulation thickness	mm	80
Construction		
Exterior Material		Painted Steel
Interior Material		Painted Steel
Outer Door	qty	1
Outer Door Lock	9.7	Y
Inner Doors	qty	2
Shelves	qty	3
Max. load - per shelf	kg	50
Max. load - total <sup>3</sup>	kg	415
Vacuum release port	rg	2 (1 automatic, 1 manual)
Access Port	atv	2 (Tautomatic, Emandati
Access Port Position	qty	back x 1, bottom x 2
Access Port Diameter	Ø	17
Casters	Ø mm	4 (2 leveling feet)
Alarms	qty (V – Vieus	-
Power Failure	(V = VISUa	al Alarm, B = Buzzer Alarm, R= Remote Alarm)  V-B-R
High Temperature		V-B-R
Low Temperature		V-B-R
Filter		V-B
Door open		V-B
Electrical and Noise Level		000
Power Supply		
D 0 .: //	V	230
Power Consumption <sup>4)</sup>	kWh/24h	6.7
Frequency	kWh/24h Hz	6.7 50
Frequency Noise Level <sup>5)</sup>	kWh/24h	6.7
Frequency Noise Level <sup>5)</sup> Options	kWh/24h Hz dB [A]	6.7 50 < 52
Frequency Noise Level <sup>5)</sup> Options Small Inner Door Kit	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>6)</sup>
Frequency Noise Level <sup>5 </sup> Options  Small Inner Door Kit  Small Inner Door Kit	kWh/24h Hz dB [A]	6.7 50 < 52 MDF-5ID5-PW <sup>6)</sup> MDF-5ID4-PW
Frequency Noise Level <sup>5 </sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>6)</sup>
Frequency Noise Level <sup>5 </sup> Options  Small Inner Door Kit  Small Inner Door Kit	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>6</sup> MDF-5ID4-PW MDF-UB7-PW
Frequency Noise Level <sup>5 </sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>6)</sup> MDF-5ID4-PW
Frequency Noise Level <sup>5)</sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up  Temperature recorders	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>6</sup> MDF-5ID4-PW MDF-UB7-PW
Frequency Noise Level <sup>5)</sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up  Temperature recorders  - Circular type	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>4</sup> MDF-5ID4-PW MDF-UB7-PW
Frequency Noise Level <sup>5)</sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up  Temperature recorders  - Circular type  - Chart paper	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52 MDF-5ID5-PW <sup>6</sup> MDF-5ID4-PW MDF-UB7-PW MTR-G85C-PE <sup>7</sup> RP-G85-PW
Frequency Noise Level <sup>5 </sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up  Temperature recorders  - Circular type  - Chart paper  - Ink pen	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52  MDF-5ID5-PW*  MDF-5ID4-PW  MDF-UB7-PW  MTR-G85C-PE 71  RP-G85-PW  PG-R-PW
Frequency Noise Level <sup>5)</sup> Options  Small Inner Door Kit  Small Inner Door Kit  Liquid CO <sub>2</sub> back-up  Temperature recorders  - Circular type  - Chart paper  - Ink pen  - Continuous strip type	kWh/24h  Hz  dB [A]  set of 5	6.7 50 < 52  MDF-5ID5-PW <sup>6</sup> MDF-5ID4-PW  MDF-UB7-PW  MTR-G85C-PE <sup>7</sup> RP-G85-PW  PG-R-PW  MTR-85H-PW <sup>7</sup>

and other external projections - See dimensions drawings for

full details.

Air temperature measured at freezer centre, ambient temperature +30°C, no load.

Max. load is the total of the load distributed over all shelves [3] and chamber bottom surface. The weight is the maximum load for chamber inside and does not account for maximum load on casters equipped with product.

Typical data - individual units may vary and power consumption will depend on loading and operating conditions. Freezer set-point

supply.

Nominal value - Background noise 20dB[A].

Value - Background noise 20dB[A].

Supply: Bush - Background noise 20dB[A].

MDF-5ID5-PW and additional shelf.

Requires sensor cover MTR-DU700SF-PW.



Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.