PHCbi

VIP ECO

VDW
Crucial Temperature Solutions

Natural Refrigerants -86°C Upright Freezer   845 L

VIP PLUS vacuum insulation

ECO natural refrigerants

IC+ inverter compressor

MDF-DU901VHL-PE

Cost-saving and environmentally friendly sample storage within an optimal foot print

The MDF-DU901VHL-PE **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.

Maximum Sample Storage

The use of space saving patented VIP PLUS panels within the freezer cabinet allows a capacity of up to 672 2" boxes inside a footprint of just 1m^2 for maximum storage. The freezer's conventional depth allows for easy installation.

Efficient Refrigeration

Naturally occurring hydro-carbon (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.
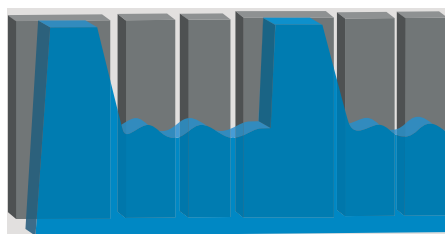
Intelligent Interface

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.

High Capacity Sample Storage
Ideal for high volume and long term sample storage in biobanks and biorepositories.

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.

PHC Europe B.V.

VIP -86°C Upright Freezer

Inverter Compressors

While conventional freezers use single speed compressors which cycle on and off, the MDF-DU901VHL **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.
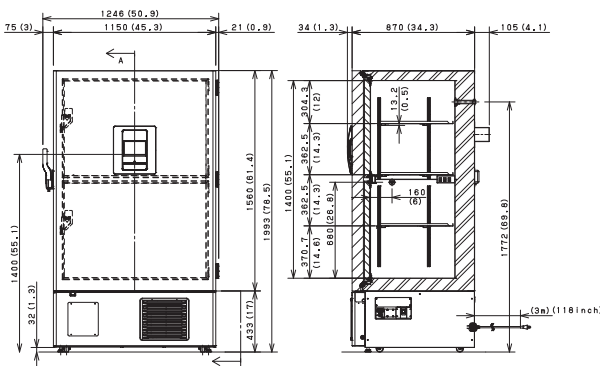
Highest Box Capacity

The use of highly efficient VIP PLUS insulation optimizes interior volume in the smallest footprint possible. This ensures the most efficient use of space for up to 40%* more 2" box storage capacity within the same footprint.

*MDF-DU901VHL-PE compared with PHCbi model with an equivalent footprint.

Microprocessor Control with Touch Screen Display

Managed and monitored by an integrated micro-processor controller with a comprehensive alarm system and self- diagnostic functions. Freezer temperature and important status information are clearly displayed and logged, with the possibility to export the data to USB.

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Model Number		MDF-DU901VHL-PE
External dimensions (W x D x H)[1]	mm	1150 x 870 x 1993
Internal dimensions (W x D x H)	mm	1010 x 600 x 1400
Volume	litres	845
Net weight	kg	328
Capacity	2" boxes	672
Performance		
Cooling performance [2]	°C	-86
Temperature setting range	°C	-50 to -90
Temperature control range [2]	°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 1000
Refrigerant		HC
Insulation material		PUF / VIP Plus
Insulation thickness	mm	70
Construction		
Exterior material		Painted Steel
Interior material		Painted Steel
Outer door	qty	1
Outer door lock		Y
Inner doors	qty	2 pieces (insulated)
Shelves	qty	3
Max. load - per shelf	kg	50
Max. load - total	kg	150
Vacuum release port		Y
Access port	qty	2
- position		Back, Bottom
- diameter	Ø mm	17
Casters	qty	4 (2 leveling feet)
Alarms		(R = Remote Alarm, V = Visual Alarm, B = Buzzer Alarm)
Power Failure		V-B-R
High Temperature		V-B-R
Low Temperature		V-B-R
Filter		V
Door open		V-B
Electrical and noise level		
Power Supply	V	230
Power consumption[3]	kWh/24h	8.7
Frequency	Hz	50
Noise level[4]	dB [A]	52
Options		
Small inner door kit	set of 2	MDF-9ID-PW (max 2) [5]
Liquid CO₂ back-up		MDF-UB7-PW
Temperature recorders		
- Circular type		MTR-G85C-PE [6]
- Chart paper		RP-G85-PW
- Ink pen		PG-R-PW
- Continuous strip type		MTR-85H-PW
- Chart paper		RP-85-PW
- Ink pen		DF-38FP-PW
- Recorder housing		MDF-S3085-PE

Appearance and specifications are subject to change without notice.

[1] Exterior dimensions of main cabinet only, excluding handle and other external projections - See dimensions drawings on website for full details.
[2] Air temperature measured at freezer centre, ambient temperature +30°C, no load.
[3] Typical data - individual units may vary and power consumption will depend on loading and operating conditions. Freezer set-point -80°C, ambient temperature 23°C, unloaded, 230V 50Hz power supply.
[4] Nominal value - Background noise 20dB[A].
[5] Installation of small inner door kit may effect usable storage capacity.
[6] Requires sensor cover MTR-DU700SF-PW.