



MDF-DU901VHL

Natural Refrigerants and Inverter Technology

Naturally occuring hydrocarbon [HC] refrigerants have minimal effect on the environment and are compliant with environmental legislation for climate control. Combined with inverter technology, these refrigerants also provide more efficient cooling without compromising cooling performance, ambient tolerance and recovery speeds following door openings.

VIP ECO

Large Volume

-86°C Ultra-Low Temperature Freezers with Natural Refrigerants



845 L

Cost-saving and environmentally friendly sample storage with an optimal footprint.

Both **VIP ECO** models are large volume high performance -86°C upright freezers ideal for use in biorepositories or facilities where bulk storage of sensitive biological is managed. Natural refrigerants minimise its energy consumption to reduce environmental impact. **VIP ECOs** allow a footprint of just 1m² for maximum storage.

Maximum Sample Storage

The use of space-saving patented VIP PLUS insulated panels within the freezer cabinet allows a capacity of up to 616 2" boxes inside a footprint of just 1 m² for maximum storage. The freezer's conventional depth allows for easy installation.

Ergonomic Design

The computer designed EZlatch is central to an overall freezer access system. This is comprised of the outer and inner doors, door gaskets, positive inner and outer door latches and a vacuum relief port. These individual components together assure comfortable operation, sample security,

temperature integrity and control of frost build-up.





Energy efficient performance

Natural refrigerants, compressors and integrated electronics combine to lower operating costs by up to 45%*. Freezer operation is managed by effectively balancing temperature performance and energy management.

* Compared to conventional models. Power source: 220V/230V/240V 50Hz, Ambient temperature 30°C



High capacity sample storage

As sample volumes in biorepositories and biobanks increase exponentially, the high capacity storage chamber offers space for expansion and overflow from crowded smaller freezers.



Reliable controllability and data log function

The large colour LCD touchpanel is accurately controlled even with a gloved hand, while the USB port makes transferring logged data of product's operational status to a PC convenient.

> Life Science Innovator Since 1966

PHC Corporation, Biomedical Division

VIP ECO -86°C Ultra-Low Temperature Freezers with Natural Refrigerants



Inverter Compressors

While conventional freezers use a single-speed compressor's on/off cycle, our VIP ECO ultra-low temperature freezers use 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.

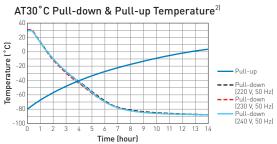
VIP Plus Insulated Panels

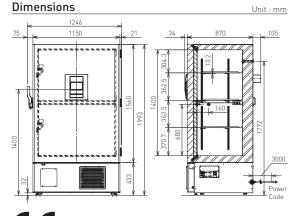
Inside-out engineering starts with a VIP Plus insulation composite which results in an efficient, thin-wall cabinet. Insulated inner doors improve temperature uniformity and cold air loss during door openings and extended warm-up times during power outages.

Temperature Uniformity

As interior air temperature stabilises at the desired set point, large mass storage volume sustains tight temperature uniformity of the load inside the insulated cabinet.

Performance Data





External dimensions (W x D x H) ¹¹ mm Internal dimensions (W x D x H) mm /olume litres Net weight kg Capacity 2" boxes Performance Cooling performance ²¹ °C Femperature setting range °C Femperature control range ²¹ °C Control Controller O Controller O Control	1150 x 87 1010 x 60 84 32 61 -8 -50 to -50 to -70 t	00 x 1400 15 18 16 16 16 16 16 16 16 16 16 16	
nternal dimensions (W x D x H) mm /folume litres Volume litres Value weight kg Capacity 2" boxes Performance 2" boxes Performance °C Control °C Control °C Controller °C Display °C remperature sensor °C Refrigeration °C Compressors W Refrigerant °C nsulation material °C neterior material °C Outer door qty Outer door lock °C nener doors qty Access port qty	1010 x 60 84 32 61 	00 x 1400 15 18 16 16 16 16 16 16 16 16 16 16	
Volume litres Vet weight kg Capacity 2" boxes Performance 2" boxes Performance °C Cooling performance ²¹ °C Cemperature setting range °C Control C Controller O Display O remperature sensor C Refrigeration C Compressors W Refrigeration material O nsulation material O Duter door lock O nner doors qty Shelves qty Max. load - per shelf kg Vaccess port Qty	84 32 32 61 -50 to -50 to -70	45 28 6 6 6 6 6 7 7 10 10 10 10 10 10 10 10 10 10	
Capacity 2" boxes Performance 2" boxes Performance °C Cooling performance ²¹ °C Temperature setting range °C Temperature control range ²¹ °C Control °C Controller °C Display °C Temperature sensor Refrigeration Refrigeration system °C Compressors W Refrigerant °C nsulation material °C nsulation thickness mm Construction °C Exterior material °C Outer door lock °C nner doors qty Max. load - per shelf kg Vaccess port qty	32 61 -8 -50 to -50 to -70 to	28 6 6 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
Capacity 2" boxes Performance 2" boxes Performance °C Cooling performance ²¹ °C Temperature setting range °C Temperature control range ²¹ °C Control °C Controller °C Display °C Temperature sensor Refrigeration Refrigeration system °C Compressors W Refrigerant °C nsulation material °C nsulation thickness mm Construction °C Exterior material °C Outer door lock °C nner doors qty Max. load - per shelf kg Vaccess port qty	61 -8 -50 to 50 to 50 to LCD Tou Pt-1 Case 2 x 1 Case 2 x 1 Rigid polyurethane fo 7 Paintee Paintee Paintee 1 Y 2 pieces (i 3 (stainte	6 6 9-90 9-86 In-volatile memory chpanel 000 C am (PUF) / VIP PLUS 0 1 Steel 1 Steel 1 Steel	
Performance °C Cooling performance ²¹ °C Temperature setting range °C Temperature control range ²¹ °C Control °C Control °C Controller °C Display °C Temperature sensor °C Refrigeration Refrigeration Refrigeration system °C Compressors W Refrigerant °C Insulation material °C Sonstruction °C Exterior material °C Outer door lock °C Inner doors qty Max. load - per shelf kg Yacuum release port °C Access port position °C	8 -50 tr -50 tr Microprocessor, no LCD Tou Pt-1 Caso 2 x 1 Caso 2 x 1 H Rigid polyurethane fo 70 Painted Painted Painted 1 Y 2 pieces (i 3 (stainted	6 -90 -86 volatile memory chpanel 000 	
emperature setting range °C remperature control range 21 °C Control °C Display °C remperature sensor °C Refrigeration °C Refrigeration system °C Compressors W Refrigerant °n nsulation material °n nsulation thickness mm Construction °n Exterior material °n Outer door lock °n nner doors qty Outer door lock °n nner doors qty Max. load - per shelf kg Vacuum release port °n Access port position °n	-50 to -50 to -50 to Microprocessor, no LCD Tou Pt-1 Case 2 x 1 M Rigid polyurethane fo 70 Paintee Paintee Paintee 2 pieces (i 3 (staintee	o -90 o -86 in-volatile memory chpanel 000 cade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
emperature setting range °C remperature control range 21 °C Control °C Display °C remperature sensor °C Refrigeration °C Refrigeration system °C Compressors W Refrigerant °n nsulation material °n nsulation thickness mm Construction °n Exterior material °n Outer door lock °n nner doors qty Outer door lock °n nner doors qty Max. load - per shelf kg Vacuum release port °n Access port position °n	-50 to Microprocessor, no LCD Tou Pt-1 Case 2 x 1 H Rigid polyurethane fo 7/ Paintee Paintee Paintee 1 Y 2 pieces (i 3 (staintee	o -86 in-volatile memory chpanel 000 cade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Temperature control range 21 °C Control Control Controller Display Display Controller Display Controller Refrigeration Refrigeration Refrigeration system Controller Dompressors W Refrigerant Construction Exterior material Construction Duter door qty Duter door lock Construction Shelves qty Max. load - per shelf kg Vacuum release port Cocess port position	-50 to Microprocessor, no LCD Tou Pt-1 Case 2 x 1 H Rigid polyurethane fo 7/ Paintee Paintee Paintee 1 Y 2 pieces (i 3 (staintee	o -86 in-volatile memory chpanel 000 cade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Controller Image: Section and the section and th	LCD Tou Pt-1 Case 2 x 1 H Rigid polyurethane fo 7/ Paintee Paintee Paintee 1 Y 2 pieces (i 3 (stainte	chpanel 000 ade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Display Image: Second State St	LCD Tou Pt-1 Case 2 x 1 H Rigid polyurethane fo 7/ Paintee Paintee Paintee 1 Y 2 pieces (i 3 (stainte	chpanel 000 ade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
emperature sensor Refrigeration Refrigeration system Compressors W Refrigerant nsulation material nsulation thickness mm Construction Exterior material Duter door Quter door lock nner doors qty Shelves qty Vax. load - per shelf kg Vacuum release port qty Access port position gty	LCD Tou Pt-1 Case 2 x 1 H Rigid polyurethane fo 7/ Paintee Paintee Paintee 1 Y 2 pieces (i 3 (stainte	chpanel 000 ade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
emperature sensor Refrigeration Refrigeration system Compressors W Refrigerant nsulation material nsulation thickness mm Construction Exterior material Duter door Quter door lock nner doors qty Shelves qty Vax. load - per shelf kg Vacuum release port qty Access port position gty	Pt-1 Case 2 x 1 H Rigid polyurethane fo 7 Paintee Paintee Paintee 1 Y 2 pieces (i 3 (staintee	ade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Refrigeration Refrigeration system Compressors W Refrigerant Image: Complexity of the system Insulation material Image: Complexity of the system Insulation thickness mm Construction Exterior material Duter door qty Duter door lock Image: Complexity of the system Inner doors qty Shelves qty Max. load - per shelf kg Vacuum release port Image: Complexity of the system Access port position Image: Complexity of the system	Case 2 x 1 H Rigid polyurethane fo 7 Painted Painted 1 Y 2 pieces (i 3 (stainted	ade 000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Refrigeration system Compressors W Refrigerant Image: Compression of the system Insulation material Image: Compression of the system Insulation thickness mm Construction Image: Compression of the system	2 x 1 H Rigid polyurethane fo 7 Painted Painted 1 Y 2 pieces (i 3 (stainte	000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Compressors W Refrigerant Image: Second Sec	2 x 1 H Rigid polyurethane fo 7 Painted Painted 1 Y 2 pieces (i 3 (stainte	000 C am (PUF) / VIP PLUS 0 d Steel d Steel	
Refrigerant	H Rigid polyurethane fo 7 Painted Painted Painted 1 Y 2 pieces (i 3 (stainte	C am (PUF) / VIP PLUS 0 d Steel d Steel	
nsulation material msulation material msulation thickness mm construction Exterior material construction attributer door qty Duter door lock construction cons qty Shelves qty Max. load - per shelf kg facuum release port construction qty Access port position construction constru	Rigid polyurethane fo 7 Painted Painted Painted 1 Y 2 pieces (i 3 (stainte	am (PUF) / VIP PLUS D d Steel d Steel	
nsulation thickness mm Construction Exterior material Duter door qty Duter door lock nner doors qty Shelves qty Max. load - per shelf kg Vacuum release port Access port position	Painteo Painteo Painteo 1 Y 2 pieces (i 3 (stainte	0 d Steel d Steel	
Construction Exterior material Interior material Duter door Quter door lock Inner doors Qty Shelves qty Max. load - per shelf Kaccess port Access port position	Paintec Paintec 1 Y 2 pieces (i 3 (stainte	d Steel d Steel	
Exterior material Interior material Duter door qty Duter door lock	Painted 1 Y 2 pieces (i 3 (stainte	d Steel	
nterior material dysection of the section of the se	Painted 1 Y 2 pieces (i 3 (stainte	d Steel	
Duter door qty Duter door lock	1 Y 2 pieces (i 3 (stainle	,	
Duter door lock Image: Constraint of the second s	Y 2 pieces (i 3 (stainle	, ,	
nner doors qty Shelves qty Max. load - per shelf kg Vacuum release port qty Access port position	2 pieces (i 3 (stainle		
Shelves qty Max. load - per shelf kg Vacuum release port Access port qty Access port position	3 (stainle		
Max. load - per shelf kg /acuum release port kcess port Access port position qty		ss steel)	
Access port qty Access port position	51		
Access port qty Access port position	Y		
Access port position	2		
	Back, E		
	17		
Casters qty	4 (2 level		
Alarms	(V = Visual Alarm, B = Buzze		
Power failure	V-E		
High temperature	V-B-R		
_ow temperature	V-E		
ilter			
Door open	V-	В	
Electrical and Noise Level	MDF-DU901VHL-PE	MDF-DU901VHA-PA	
Power supply V	220/230/240	115	
Frequency Hz	50	60	
Noise level ³⁾ dB (A)	5		
Dptions			
Small inner door kit set of 2	MDF-9ID-P	MDF-9ID-PW (max 2) 4)	
.iquid CO2 back-up	MDF-UB7-PW		
nventory rack	IR-224U-PW, IR-220U-PW		
- Circular type	MTR-G85C-PE ^{SI} MTR-G85A-PA ^{SI} - Chart paper: RP-G85-PW - Ink pen: PG-R-PW		
e Sincelar type 		MTR-85H-PW ^{5]} - Chart paper: RP-85-PW	
	- Ink pen: DF-38FP-PW - Recorder housing: MDF-S3085-PV		

Certification 1) Exterior dimensions of main cabinet only, excluding handle and other external projections

^{2]} Air temperature measured at freezer centre, ambient temperature 30°C, no load.

Ethernet interface (LAN) 6]

Quality Management System

- ^{3]} Nominal value Background noise 20 dB[A]. 4) Installation of small inner door kit may effect usable
- storage capacity. 5) Requires sensor cover MTR-DU700SF-PW.

^{6]} Only for MTR-5000 (data acquisition system) users.

· Appearance and specifications are subject to change without notice

MTR-L03-PW

Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents of the product.



(220/230/240 V, 50 Hz)

Preservation Equipment, Experimental Environment Equipment, Dispensary Equipment, Culturing Equipment and Drying & Sterilising Equipment for General Laboratory use



1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma 370-0596, Japan







PHC Corporation Biomedical Division is certified for: Environmental management system:



PHC Corporation

https://www.phchd.com/global/biomedical/ Printed in Japan 1115-2019-11-AA