PHCbi

MDF-DU503VH

MDF-DU703VH

VIP ECO SMART

Natural Refrigerants Ultra-Low Temperature Freezer

-86°C to -40°C

ECO natural refrigerants | IC+ inverter compressor | VIP PLUS vacuum insulation | EZlatch door handle | electronic door lock

528 L / 729 L

Cost-saving and environmentally friendly sample storage now upgraded with additional features for improved usability.

The **VIP ECO SMART** -86°C to -40°C upright freezer, along with conventional Password Protection, now offers Face Recognition, coupled with an Electric Lock for enhanced access control. Energy-saving is also further improved by using natural refrigerants combined with an inverter compressor.

Natural refrigerants and inverter technology

Naturally ocurring 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.

New & larger control panel with multiple features

Larger display improves visibility, increasing from 7.0 Inches to 10.1 Inches (1.4 times larger in size & 1.6 times higher in resolution), compared to conventional models.

MDF-DU502/702VH

MDF-DU503/703VH

The ergonomic "EZlatch" now coupled with "Electric Lock"

The ergonomically designed "Ezlatch" door handle, as the name suggests, allows for secure door opening / closing with minimal force.

Newly added "Electric Lock" automatically unlocks/locks the door keys, making access to stored samples much easier.

Energy efficient performance

PERFORMANCE

Natural refrigerants, compressors and integrated electronics combine to lower operating costs compared to existing models by up to 53%*. Freezer operation is managed by effectively balancing temperature performance and energy management.

* Compared to conventional model (MDF-DU700VH-PE)
  Power source: AC 220 V/230 V/240 V 50 Hz, AT 23°C

Intelligent interface

The newly designed control panel with rearranged layout and icons greatly enhances usability.
The touchscreen method has also changed from the resistive method to the capacitive method, enabling comfortable use even with lab gloves on.
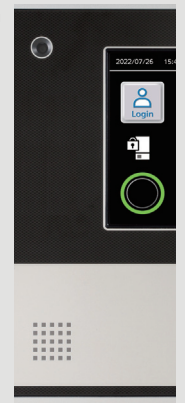
Various login methods to suit every scenario
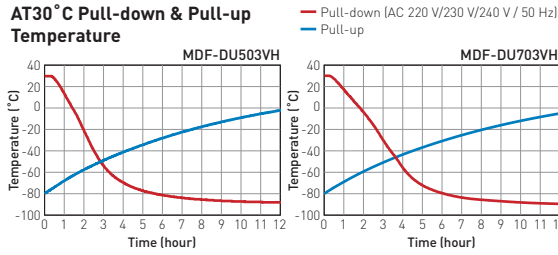
1. Password Protection

UP to 100 accounts registrable, each with individual passwords.

2. Face Recognition

Take a picture of your face and register it. Once the camera recognizes you, you will automatically be logged in.
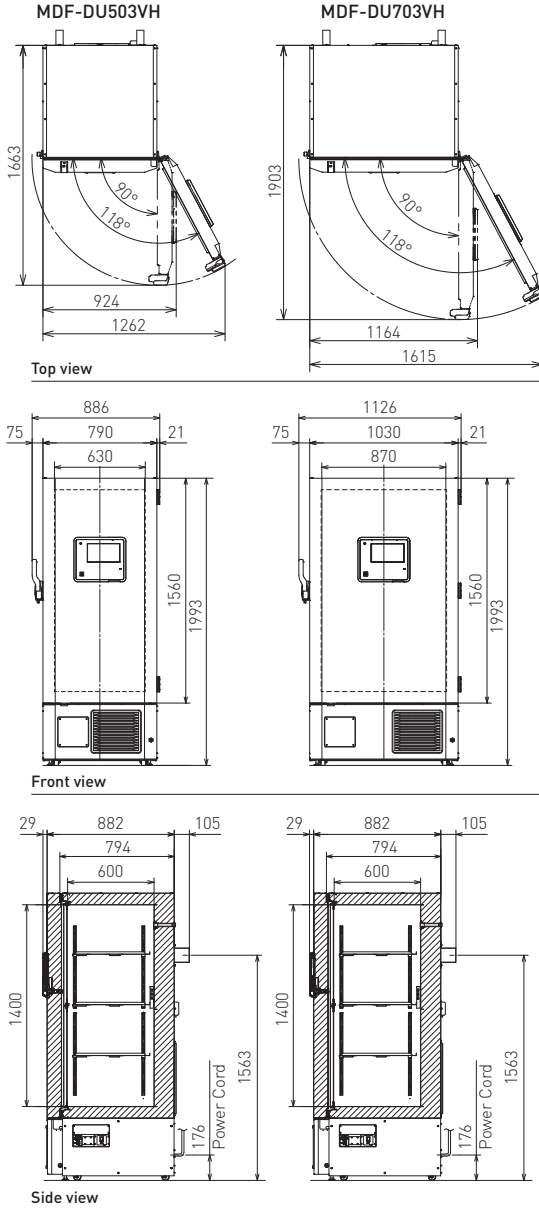
PHC Corporation, Biomedical Division

Life Science
Innovator
Since 1966

VIP ECO SMART

Natural Refrigerants
Ultra-Low Temperature Freezer

Performance Data

AT30˚C Pull-down & Pull-up Temperature

— Pull-down (AC 220 V/230 V/240 V / 50 Hz)
— Pull-up

MDF-DU503VH

MDF-DU703VH

Dimensions

Unit : mm

MDF-DU503VH

Top view

MDF-DU703VH

Top view

Front view

Side view

Model Number[7]		MDF-DU503VH-PE/-PK MDF-DU503VHA-PA	MDF-DU703VH-PE/-PK MDF-DU703VHA-PA
External dimensions (W x D x H)[1]	mm	790 x 882 x 1993	1030 x 882 x 1993
Internal dimensions (W x D x H)	mm	630 x 600 x 1400	870 x 600 x 1400
Volume	litres	528	729
Net weight	kg	241	276
Capacity[2]	2″ boxes	384	576
Performance			
Cooling performance[3]	°C	-86 to -40	
Temperature setting range	°C	-90 to -40	
Temperature control range[3]	°C	-86 to -40	
Control			
Controller		Microcomputer control system	
Display		LCD Digital display	
Temperature sensor		Platinum resistance (Pt 1,000 Ω)	
Refrigeration			
Refrigeration system		Cascade	
Compressors	W	High stage side; Hermetic type, Output: 750 W Low stage side; Hermetic type, Output: 750 W	
Refrigerant		HC	
Insulation		Rigid polyurethane foamed-in place + Vacuum insulation panel	
Construction			
Exterior material		Painted Steel	
Interior material		Painted Steel	
Outer door	qty	1	
Outer door lock		Y	
Inner doors	qty	2	
Shelves	qty	3	
Max. load – per shelf	kg	50	
Vacuum release port		1 (automatic)	
Access port	qty	3	
Access port position		3 (back x1, bottom x2)	
Access port diameter	Ø mm	17	
Casters	qty	4 (2 leveling feet)	
Alarms	**(V = Visual Alarm, B = Buzzer Alarm, M = Message, R = Remote Alarm)**		
Power failure		V-B-M-R	
High temperature		V-B-M-R	
Low temperature		V-B-M-R	
Filter		V-M	
Door open		V-B-M	

Electrical and Noise Level		MDF-DU503VH-PE MDF-DU703VH-PE	MDF-DU503VH-PK MDF-DU703VH-PK	MDF-DU503VHA-PA MDF-DU703VHA-PA
Power supply	V	220/230/240, 220/230	220	115
Frequency	Hz	50 / 60	60	60
Noise level[4]	dB (A)	52		

Options		MDF-DU503VH-PE/-PK MDF-DU503VHA-PA	MDF-DU703VH-PE/-PK MDF-DU703VHA-PA
Small inner door kit	set of 5	MDF-5ID5-PW[5]	MDF-7ID5-PW[5]
	set of 4	MDF-5ID4-PW	MDF-7ID4-PW
Liquid CO₂ back-up		MDF-UB9-PW	
Inventory rack		IR-224U-PW, IR-316U-PW	
Temperature recorders - Circular type		MTR-G85C-PE/MTR-G85A-PA[6]	- Chart paper: RP-G85-PW - Ink pen: PG-R-PW
Temperature recorders - Continuous strip type		MTR-85H-PW[6]	- Chart paper: RP-85-PW - Ink pen: DF-38FP-PW - Recorder housing: MDF-S3085-PW
Recorder sensor cover		MTR-DU700SF-PW	
Optional Communication Systems			
Digital interface (RS232C/RS485)		MTR-480-PW	
Ethernet interface (LAN)		MTR-L03-PW	

Quality Management System	MDF-DU503VH-PE / MDF-DU503VHA-PA MDF-DU703VH-PE / MDF-DU703VHA-PA	MDF-DU503VH-PK MDF-DU703VH-PK
Certification	ISO9001	ISO13485

[1] Exterior dimensions of main cabinet only, excluding handle and other external projections.
[2] Usable storage capacity of 2″ boxes when the original 3 trays installed.
[3] Air temperature measured at freezer centre, ambient temperature 30˚C, no load.
[4] Nominal value - Background noise 20 dB[A].
[5] Installation of small inner door kit may effect usable storage capacity.
[6] Requires sensor cover MTR-DU700SF-PW.
[7] MDF-DU503VH, MDF-DU703VH are for laboratory use.
• Appearance and specifications are subject to change without notice.
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.

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