



TwinGuard

-86°C Ultra-Low Temperature Freezer



528 L / 729 L

Ultra-low temperature storage solution for valuable samples. TwinGuard equipped with new Dual Cooling System.

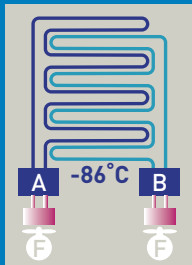
New TwinGuard adopts optimised Dual Cooling System and new cabinet design with enhanced insulation performance and storage capacity.

Superior cooling performance focused on reliability and safety suitable even for mass sample storage like biobank use.

Ultimate Sample Protection

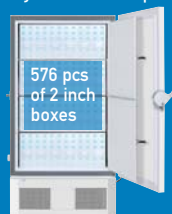
New optimised Dual Cooling System "TwinGuard" comprised of independent dual cooling circuits realises -86°C and one side of the cooling circuits maintains chamber temperature at -70°C.

The freezer can minimise risk of compromising valuable samples.



Efficient Sample Storage

New cabinet design combines an insulated outer door with superior storage efficiency and an inner door designed for uniform temperature distribution. This improves storage efficiency approximately 10% (576 pcs of 2-inch Cryo boxes can be stored in the MDF-DU702VX) while maintaining the same footprint as conventional models.



Intelligent Interface

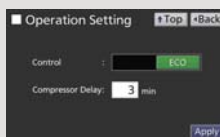
The newly developed ergonomic "EZlatch" door handle makes access to stored samples even easier. Intuitive and intelligible large colour LCD touchpanel is provided.



ECO operation and energy saving

Model Number	Operation mode	Energy-saving rate*1	Conventional Model No.
MDF-DU502VX	Normal	18%	MDF-U500VX
	ECO	22%	
MDF-DU702VX	Normal	19%	MDF-U700VX
	ECO	22%	

Improved insulating performance cuts power consumption approximately 22%*2 compared to conventional models when the ECO mode is selected, thanks to the effective combination of VIP Plus insulation and the next-generation cabinet.



Flexible shelf layout



The inner space offers flexible storage, allowing either three or four shelves*3 and chamber bottom to be used. Also, an inner door with four or five small doors (optional) is available.

Reliable controllability and data log function



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.

*1 Power consumption per 2 inch box. Power source: 230V 50Hz, AT 23°C

*2 Compared to conventional models. Power consumption per 2 inch box. Power source: 230V 50Hz, AT 23°C

*3 Three shelves equipped as standard.

TwinGuard -86°C Ultra-Low Temperature Freezer

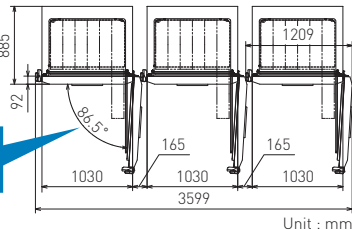
Approximately 110mm*1 installation width can be reduced when installing 3 units in line compared to conventional units.

The "Chamfer-design" body front features a chamfered edge for reduced installation space when compared to conventional models in a multiple unit installation. The design is especially suitable for a biobank or similar application.



*1 Comparison of MDF-DU702VX and the conventional MDF-U700VX product.

Comparison condition:
Minimum width required when installing 3 units in line. This prevents outer doors from contacting each other for door openings/closings.



Opening the inner door to 90 degrees lets storage racks be removed.

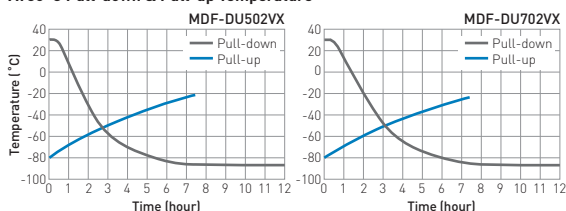
User friendly for daily operation with newly developed vacuum release port and fivefold gasket

Newly developed automatic vacuum release port and fivefold gasket are adopted. Automatic release of negative pressure and reduced frost realise user friendliness even for frequent door opening.

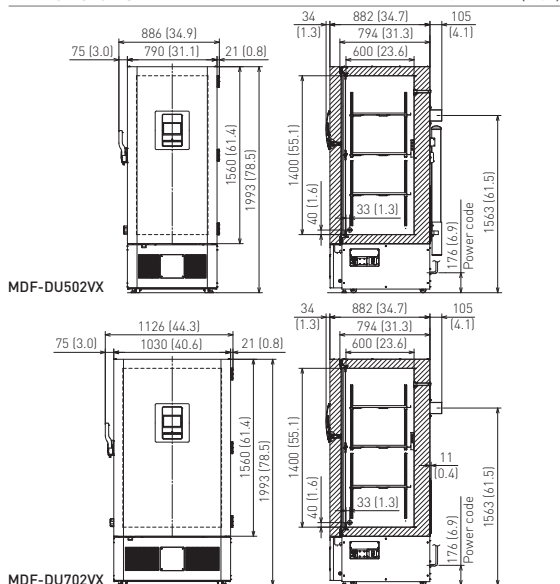


Performance Data

AT30°C Pull-down & Pull-up Temperature



Dimensions



Preservation (freezers, refrigerators) and Culturing (incubators) Equipment
The management of the design, development, production, sales support, and servicing of the above.
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Panasonic Healthcare Co., Ltd. Biomedical Division is certified for:
Environmental management system: ISO14001

Model Number	MDF-DU502VX-PE	MDF-DU502VX-PB	MDF-DU702VX-PE	MDF-DU702VX-PB	
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 285		328		
Capacity ²⁾	2" boxes 384		576		
Performance					
Cooling performance ³⁾	°C		-86		
Temperature setting range	°C		-50 to -90		
Temperature control range ³⁾	°C		-50 to -86		
Control					
Controller	Microprocessor, non-volatile memory				
Display	LCD Touchpanel				
Temperature sensor	Pt-1000				
Refrigeration					
Refrigeration system	Independent Dual-Cooling				
Compressors	W	2 x 1100			
Refrigerant	HFC mixed				
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	Y				
Inner doors	qty	2 pieces			
Shelves	qty	3 [stainless steel]			
Max. load - per shelf	kg	50			
Max. load - total	kg	415 ⁴⁾	515 ⁴⁾		
Vacuum release port	2 [1 automatic, 1 manual]				
Access port	qty	3			
Access port position	3 locations [rear x 1, bottom x 2]				
Access port diameter	∅ mm	17			
Casters	qty	4 [2 leveling feet]			
Alarms [V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm]					
Power failure	V-B-R				
High temperature	V-B-R				
Low temperature	V-B-R				
Filter	Filterless design				
Door open	V-B				
Electrical and Noise Level					
Power supply	V	230 / 240	220	230 / 240	220
Frequency	Hz	50	50	50	50
Noise level ⁵⁾	dB (A)	52			
Options					
Small inner door kit	set of 5	MDF-5ID5-PW ⁶⁾	MDF-7ID5-PW ⁶⁾		
	set of 4	MDF-5ID4-PW	MDF-7ID4-PW		
Liquid CO2 back-up	MDF-UB7-PW				
Inventory rack	IR-224U-PW, IR-316U-PW				
Temperature recorders	- Circular type	MTR-G85C-PE ⁷⁾	- Chart paper: RP-G85-PW - Ink pen: PG-R-PW		
	- Continuous strip type	MTR-85H-PW ⁷⁾	- Chart paper: RP-85-PW - Ink pen: DF-38FP-PW - Recorder housing: MDF-S3085-PW		
Optional Communication Systems					
Digital interface [RS232C/RS485] ⁸⁾	MTR-480-PW				
Ethernet interface [LAN] ⁸⁾	MTR-L03-PW				

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⁾ Max. load allowed for chamber interior - total shelves (3) and chamber bottom, excluding load on casters mounted on product.
⁵⁾ Nominal value - Background noise 20dB(A).
⁶⁾ Installation of small inner door kit may effect usable storage capacity.
⁷⁾ Requires sensor cover MTR-DU700SF-PW.
⁸⁾ Only for MTR-5000 (data acquisition system) users.
Caution: Panasonic Healthcare Co., Ltd. guarantees this product under certain warranty conditions. However, please note that Panasonic Healthcare Co., Ltd. shall not be responsible for any loss or damage to the contents of the product.

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