

## TwinGuard

-86°C Chest Freezers

575 | 715 L



PHCbi's *TwinGuard* -86°C chest freezers deliver the unsurpassed level of safety and sample security that is critical for valuable biological samples alongside exceptional ease of use and data monitoring.

MDF-DC700VX-PE

### Ultimate Sample Protection

The Dual Cooling System offers the highest level of protection through the use of two independent refrigeration systems. If one system unexpectedly fails the other can maintain the freezer in the -70°C range.

### Improved Temperature Performance

*TwinGuard* chest freezers maintain better temperature stability and uniformity during routine door openings than equivalent upright models as less cold air leaves the freezer while the door is open.

### Enhanced Use & Intelligent Security

A colour LCD touch panel allows full user control, even with gloved hands, while the USB port makes transferring logged data to a PC convenient. The filterless design of the freezers reduces routine maintenance.



Dual Cool Compressors

### Valuable Sample Storage

Securely store valuable and irreplaceable samples with the utmost confidence that they won't be lost in the case of compressor failure.



### Temperature Sensitivity

Enhanced uniformity and greatly reduced risk of sample degradation as a result of temperature fluctuation during freezer failure.



### Restricted Access Laboratories

Significantly extended critical time to react to any sudden mechanical failure. Ideal for high security applications.

# TwinGuard -86°C Chest Freezers



## Dual Cooling System

Two independent refrigeration systems, with CoolSafe compressors, provide a reliable and exceptionally stable -86°C ultra-low temperature environment.

In the case of an unexpected failure of one cooling circuit, the other circuit will maintain the freezer in the -70°C range, protecting samples until service can be arranged.

## Microprocessor Control with Touch Screen Display

An LCD touch screen displays freezer temperature and important status information while a USB port allows logged data to be easily transferred to a PC.

When set to ECO mode, the microprocessor controller will establish an overlapping cycle of the two refrigeration systems based on the load status of the freezer, significantly reducing energy consumption.

## Efficient Sample Storage

The use of highly efficient VIP Plus insulation combined with a newly designed refrigeration system layout ensures the most efficient use of space for up to 30%\* more 2" box storage capacity.

\*MDF-DC500VX compared with previous equivalent PHCbi models.

## Filterless Design

The filterless construction of the freezers reduces routine maintenance time by eliminating the need for regular cleaning of filters.

Model Number		MDF-DC500VX-PE	MDF-DC700VX-PE
External dimensions (W x D x H) <sup>1)</sup>	mm	2010 x 845 x 1070	2300 x 845 x 1070
Internal dimensions (W x D x H)	mm	1190 x 640 x 756	1480 x 640 x 756
Volume	litres	575	715
Net Weight	kg	328	358
Capacity	2" boxes	416	520
<b>Performance</b>			
Cooling performance <sup>2)</sup>	°C	-86	
Temperature setting range	°C	-50 to -90	
Temperature control range <sup>2)</sup>	°C	-50 to -86	
<b>Control</b>			
Controller		Microprocessor, non-volatile memory	
Display		LCD Touch Screen	
Temperature sensor		Pt-1000	
<b>Refrigeration</b>			
Refrigeration system*		Independent Dual-Cooling	
Compressors	W	2 x 1100	
Refrigerant		MU-NC500	MU-NC700
Refrigerant weight	g	515	550
GWP of refrigerant for each cooling circuit		5139	5370
Total Refrigerant weight (CO <sub>2</sub> equivalent)	t	5.293	5.907
Insulation material		PUF / VIP Plus	
Insulation thickness	mm	70/135	
<b>Construction</b>			
Exterior material		Painted Steel	
Interior material		Stainless Steel	
Outer lid	qty	1	
Outer lid lock		Y	
Inner lid		3 pieces (Styrofoam)	
Access Port	qty	1	
- position		Back	
- diameter	∅ mm	17	
<b>Alarms (R = Remote Alarm, V = Visual Alarm, B = Buzzer Alarm)</b>			
Power failure		V-B-R	
High temperature		V-B-R	
Low temperature		V-B-R	
Filter		Filterless design	
Lid open		V-B	
<b>Electrical and Noise Level</b>			
Power supply	V	230	
Frequency	Hz	50	
Noise level <sup>3)</sup>	dB [A]	52	
<b>Options</b>			
Liquid CO <sub>2</sub> back-up		MDF-UB5-PW	
Temperature recorders			
- Circular type		MTR-G85C-PE	
- 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.

<sup>1)</sup> Exterior dimensions of main cabinet only, excluding handle and other external projections - See dimensions drawings on website for full details.  
<sup>2)</sup> Air temperature measured at freezer centre, ambient temperature +30°C, no load  
<sup>3)</sup> Nominal value - Background noise 20dB(A)

\* Complies with Art. 11, Annex III of F-Gas Regulation (EU) No 517/2014. Contains fluorinated greenhouse gases in hermetically sealed equipment. This extended statement informs the user that these specific products [which contain fluorinated greenhouse gases in quantities of 5 tonnes of CO<sub>2</sub> equivalent or more, but less than 10 tonnes] do not require leak testing under the regulation, Article 4.



The MDF-DC500&700VX freezers are certified as a Class IIa Medical Device (93/42/EEC and 2007/47/EC) for medical purposes of storing cells, tissues, organs and embryos.



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