



MDF-DU500ZH-PE

MDF-DU700ZH-PE

## FrostLess

Natural Refrigerants -86°C Upright Freezer

525 L / 725 L



### Cost-saving, environmentally friendly sample storage with reduced frost accumulation.

The MDF-DU500ZH-PE and MDF-DU700ZH-PE FrostLess -86°C Upright Freezers with reduced frost build-up on the inner doors. Provides optimum sample storage capacity within a compact footprint combined with natural refrigerants to minimise energy consumption, reduce environmental impact and save money.

#### FrostLess Technology

The improved packing, insulation materials, and the heated pipe frame of the inner door gasket result in reduced manual labor for freezer maintenance. Less ice will build up on the inner doors and the need for defrosting the freezer is reduced.

#### Reducing Frost Growth

The new FrostLess freezers from PHCbi minimise frost build up and with that the time needed for regular maintenance. Reducing frost buildup is critical for smooth running of the freezer, accessibility of the samples and preventing damage of samples.

#### Efficient Refrigeration

Naturally occurring hydrocarbon (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.



#### Test Conditions

Environment Condition:  
Temp./Humidity: 30°C/80%.  
Door Opening/Closing: 150 times,  
30 sec/n. Period: 30 days. No Load.



#### New Thermal Insulation

The new design of the inner doors with VIP panels and the new thermal insulation technology of the frame suppresses frost growth.



#### Environmentally Friendly

Ideal for laboratories looking to reduce their carbon footprint and environmental impact to comply with sustainability policies.

# FrostLess

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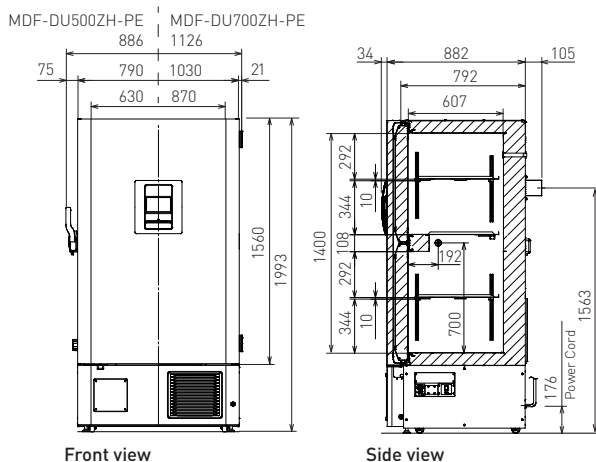


## Inverter Compressors

While conventional freezers use single speed compressors which cycle on and off, the MDF-DU500ZH and MDF-DU700ZH freezers contain 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.

## Innovative Cabinet Design

The enhanced cabinet design with chamfered edges reduces footprint for use in multi freezer laboratories.



Model Number		MDF-DU500ZH-PE	MDF-DU700ZH-PE
<b>Dimensions</b>			
External dimensions (WxDxH) <sup>1)</sup>	mm	790 x 882 x 1993	1030 x 882 x 1993
Internal dimensions (WxDxH)	mm	630 x 607 x 1400	870 x 607 x 1400
Volume	litres	525	725
Net weight	kg	248	282
Capacity	2" boxes	352	528
<b>Performance</b>			
Cooling performance <sup>2)</sup>	°C		-86
Temperature setting range	°C		-40 to -90
Temperature control range <sup>2)</sup>	°C		-40 to -86
<b>Control</b>			
Controller		Microcomputer control system	
Display		LCD Touch Screen	
Temperature sensor		Pt 1,000 Ω	
<b>Refrigeration</b>			
Cooling method		Cascade	
Compressors	W	2 x 920	
Refrigerant		HC	
Insulation material		PUF / VIP Plus	
Insulation thickness	mm	80	
<b>Construction</b>			
Exterior material		Painted Steel	
Interior material		Painted Steel	
Outer door	qty	1	
Outer door lock		Y	
Inner doors	qty	2	
Shelves	qty	2 adjustable, 1 dedicated	
Max. load - per shelf	kg	50	
Max. load - total <sup>3)</sup>		418	520
Access port	qty	3	
- position		back x 1, bottom x 2	
- diameter	∅ mm	17	
Casters	qty	4 (2 leveling feet)	
<b>Alarms</b>		<b>(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)</b>	
Power failure		V-B-R	
High temperature		V-B-R	
Low temperature		V-B-R	
Filter		V	
Door open		V-B	
<b>Electrical and Noise Level</b>			
Power Supply	V	220/230/240	
Frequency	Hz	50	
Noise Level <sup>4)</sup>	dB(A)	52	
<b>Options</b>			
Liquid CO <sub>2</sub> back-up		MDF-UB7-PW	
Temperature recorders			
- Circular type		MTR-G85C-PE <sup>5)</sup>	
- Chart paper		RP-G85-PW	
- Ink pen		PG-R-PW	
- Continuous strip type		MTR-85H-PW <sup>5)</sup>	
- Chart paper		RP-85-PW	
- Ink pen		DF-38FP-PW	
- Recorder housing		MDF-S3085-PW	

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 for full details.

2) Air temperature measured at freezer centre, ambient temperature +30°C, no load.

3) Max. load is the total of the load distributed over all shelves (3) and chamber bottom surface. The weight is the maximum load for chamber inside and does not account for maximum load on casters equipped with product.

4) Nominal value - Background noise 20dB(A).

5) Requires sensor cover MTR-DU700SF-PW.

# PHC Europe

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