

# Cryogenic

-150°C Chest Freezer

231 L



MDF-C2156VAN-PE

## The most uniform storage temperatures for cryopreservation solutions

The MDF-C2156VAN **Cryogenic** Freezer offers unparalleled safety, reliability and uniform temperatures well below -135°C for ideal long-term cryopreservation solutions.

### Optimum Sample Storage

The use of patented space saving VIP PLUS panels within the freezer cabinet provides a reduced wall thickness for maximum interior volume. This results in a capacity of up to 150 2" boxes.

### Reliable Technologies

Compressors that are specifically designed for ultra-low temperature applications are employed in the proven cascade refrigeration system ensuring the highest levels of performance and reliability.

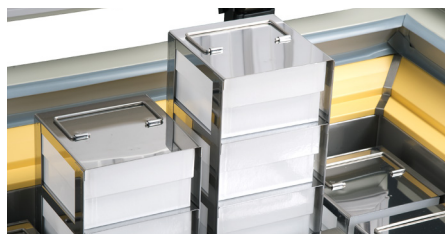
### Ease of Use & Intelligent Security

All alarm functions, self-diagnostic notifications and a graphical display of temperature performance over time are available in the specially designed LCD control panel.



### Uniform Sample Storage

The uniform and stable temperatures provided are ideal for storage of cells, tissues and other important biological samples.



### Dry Storage

The highest levels of protection for valuable samples, without the risks of cross contamination and vertical temperature gradients.



### Easy Monitoring

The blue display provides a clear view of the temperature and gives a notification in the case of abnormalities.

# Cryogenic -150°C Chest Freezer



## Application Specific Design

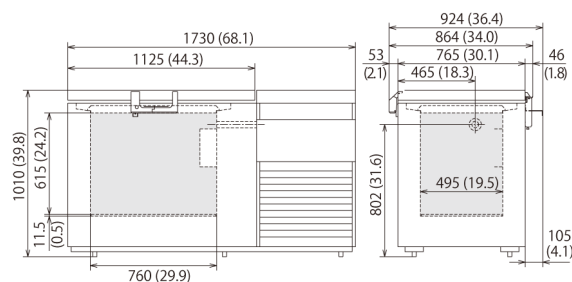
Due to the extended operation of compressors within ultra-low temperature freezers, lubricant oil is essential to reduce wear, prevent abrasions and seizure and therefore maintain the highest levels of freezer performance. However, when lubricant oil circulates within the refrigeration circuit, it can cause piping to become clogged, resulting in compressor damage. Incorporating a high-efficiency oil separator, **Cryogenic -150°C** freezers effectively separate lubricant oil from refrigerant, increasing the durability of the compressors and offering a reliable ultra-low temperature environment.

## High Storage Capacity

**Cryogenic** freezers with VIP PLUS insulation provide up to 30% more storage capacity than a conventionally insulated freezer without increasing the footprint.

## Microprocessor Control

Managed and monitored by an integrated microprocessor controller with a comprehensive alarm system and diagnostic functions.



Model Number		MDF-C2156VAN-PE	
External dimensions (W x D x H) <sup>1)</sup>	mm	1730 x 765 x 1010	
Internal dimensions (W x D x H)	mm	760 x 495 x 615	
Volume	litres	231	
Net weight	kg	318	
Capacity			
- aluminium racks	2" boxes	150	
- stainless steel racks	2" boxes		
Performance			
Cooling performance <sup>2)</sup>	°C	-150	
Temperature setting range	°C	-125 - -152	
Temperature control range <sup>2)</sup>	°C	-125 - -150	
Control			
Controller		Microprocessor, non-volatile memory	
Display		LCD	
Temperature sensor		Pt-1000	
Refrigeration			
Refrigeration system*		Cascade	
Compressors	W	2 x 1100	
Cooling circuit		High Stage	Low Stage
Refrigerant		R-407D	MU-N721
Refrigerant weight	g	470	1627
GWP of refrigerant for each cooling circuit		846.1	6952
Total Refrigerant weight (CO <sub>2</sub> equivalent)	t	6.647	
Insulation material		PUF / VIP Plus	
Insulation thickness	mm	135	
Construction			
Exterior material		Painted Steel	
Interior material		Aluminium	
Outer Lid	qty	1	
Outer Lid Lock		Y	
Inner Lid	qty	2 pieces	
Max. load - total	kg	207	
Access Port	qty	1	
- position		Right	
- diameter	∅ mm	40	
Casters	qty	6 (3 leveling feet)	
Alarms (R = Remote Alarm, V = Visual Alarm, B = Buzzer Alarm)			
Power Failure		V-B-R	
High Temperature		V-B-R	
Low Temperature		V-B-R	
Filter		V-B	
Lid open		V-B	
Electrical and Noise Level			
Power supply	V	230	
Frequency	Hz	50	
Noise level <sup>3)</sup>	dB [A]	51	
Options			
Liquid N <sub>2</sub> back-up		Supplied as standard	
Temperature recorders			
- Continuous strip type		MTR-155H-PW	
- Chart paper		RP-155-PW	
- Ink pen		DF-38FP-PW	
- Recorder housing		MDF-S30150-PW	
Storage case		MDF-49SC-PW	

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], capacity.

\* 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.



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