

## 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.

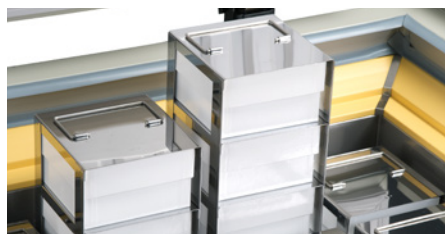
#### Ease of Use & Intelligent Security

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

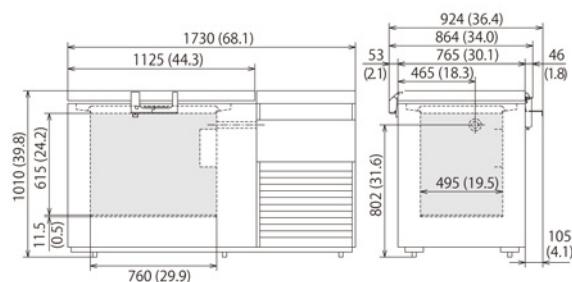
Due to the extended operation of compressors within ultra-low temperature freezers, lubricant oil is essential to reduce wear, prevent abrasions and seizure and therefore maintain the highest levels of freezer performance. However, when lubricant oil circulates within the refrigeration circuit, it can 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
Refrigerant		HFC mixed
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
Access Port Position		Right
Access Port Diameter	Ø 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
Optional communication systems		
Ethernet interface (LAN)		MTR-L03-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.

