



MDF-U443-PE

# Biomedical

-40°C Plasma Freezer

426 L



## The ideal freezing environment for the preservation of fresh frozen plasma

The Biomedical -40°C Freezer provides secure storage of valuable research and clinical samples.

### Effective Temperature Control

Microprocessor controls ensure that the set temperature is maintained regardless of ambient conditions. With a temperature range that can be set anywhere between -15°C to -40°C.

### Stable & Uniform Temperature Design

Temperature uniformity throughout the freezer ensures that all samples can be stored in identical conditions. The forced Air Circulation technology quickly restores temperature uniformity following routine door openings.

### Ease of Use & Intelligent Security

A comprehensive visual and audible alarm system with remote alarm contacts ensures users are aware of any abnormalities and can take appropriate actions.



### Uniform Sample Storage

A powerful fan ensures temperature uniformity throughout the freezer cabinet. High freezing power increases temperature uniformity.



### Stable Environment

The environment that is unaffected by fluctuations in ambient temperature ensuring stable conditions for storage of plasma and DNA.



### Safe & Secure Storage

Multiple safety systems such as high/low temperature audible and visual alarms, remote alarm, door open alarm and keyed door locks.

# Biomedical -40°C Plasma Freezer



Custom made drawers upon request

## Easy to read digital display

Temperature readings are displayed and controlled in the range of -15°C to -40°C.

## Automatic Compressor Cycling

Compressor ON - OFF cycles are regulated automatically in response to cooling demand to minimise compressor running time and to save energy.

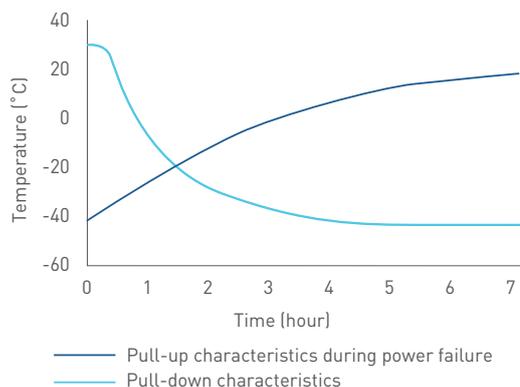
## Audible and flashing LED Visual alarms

Audible and flashing LED visual alarms with remote alarm contacts are in place in case of power failure, high or low temperature condition, or during any thermal sensor abnormality.

## Interior

The stainless steel interior is easy to clean. Two transparent acrylic inner doors minimises cold air leakage. Shelf location can be freely adjusted to match size of stored items.

## Performance data



### EEA, Switzerland and Turkey only



#### For medical use

The MDF-U443-PE is certified as a Class IIa Medical Device (93/42/EEC and 2007/47/EC). Applicable countries: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Ireland, Italy, Liechtenstein, Luxembourg, Malta, the Netherlands, Spain, Switzerland and the United Kingdom only



#### For laboratory use

Applicable countries: EEA countries, Switzerland and Turkey

Model Number		MDF-U443-PE	
External dimensions [W x D x H] <sup>1)</sup>	mm	800 x 832 x 1810	
Internal dimensions [W x D x H]	mm	640 x 615 x 1090	
Volume	litres	426, 300 FFP packs (300 ml)	
Net weight	kg	213	
Capacity	2" boxes	256	
Performance			
Cooling performance <sup>2)</sup>	°C	-40 <sup>3)</sup>	
Temperature setting range	°C	-15 to -44	
Temperature control range <sup>2)</sup>	°C	-15 to -40	
Control			
Controller		Microprocessor, non-volatile memory	
Display		LED	
Temperature sensor		Thermistor	
Refrigeration			
Refrigeration system*		Cascade + forced air circulation	
Compressors	W	H:400/L:750	
Cooling circuit		High Stage	Low Stage
Refrigerant		R-513A	R-449A
Refrigerant weight	g	250	145
GWP of refrigerant for each cooling circuit		631	1397
Total Refrigerant weight (CO <sub>2</sub> equivalent)	t	0.360	
Insulation material		PUF	
Insulation thickness	mm	70	
Construction			
Exterior material		Painted Steel	
Interior material		Stainless Steel	
Outer door	qty	1	
Outer door lock		Y	
Innerdoors	qty	2 (acrylic)	
Shelves	qty	5	
Containers/baskets	kg	-	
Max. load - per shelf/container/basket	kg	50	
Max. load - total	kg	200	
Access port	qty	1	
- position		Left	
- diameter	Ø mm	40	
Interior fluorescent lamp		Y	
Casters	qty	4 (2 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	
Door open		V-B	
Electrical and noise level			
Power supply		230V 50Hz single phase	
Noise level <sup>4)</sup>	dB [A]	51	
Options			
Storage systems		Custom made drawer systems upon request	
Temperature recorders			
• Circular type		N.A.	
• Continuous strip type		MTR-4015LH-PE (-40°C to +14°C)	MTR-85H-PW (-100°C to +50°C)
- Chart paper		RP-40-PW	RP-85-PW
- Ink pen		Included in the recorder	DF-38FP-PW
- Recorder housing		MPR-S30-PW	N.A.

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> Air temperature measured at freezer centre, ambient temperature +35°C, no load.

<sup>4)</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.



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[www.phchd.com/eu/biomedical](http://www.phchd.com/eu/biomedical)