



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.



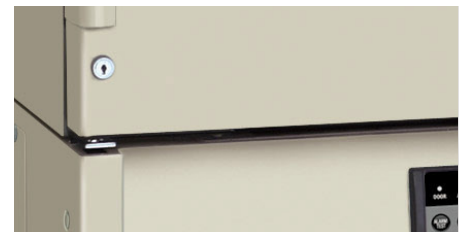
### Uniform Sample Storage

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.

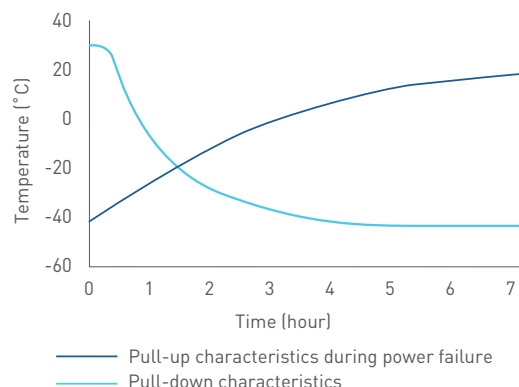
## Audible and flashing LED Visual alarms

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<br>(-40°C to +14°C )      | MTR-85H-PW<br>(-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].

\* Contains fluorinated greenhouse gases.

# PHC Europe

A Member of PHC Group

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