



## TwinGuard

-86°C Ultra-Low Temperature Freezers



575 L / 715 L

PHCbi's **TwinGuard** -86°C chest freezers deliver the unsurpassed level of safety and sample security that is critical for valuable biological sample storage alongside exceptional ease of use and data monitoring.

### Ultimate Sample Protection

The Dual Cooling System "TwinGuard" comprised of independent dual cooling circuits delivers -86°C, and one side of the cooling circuits maintains a chamber temperature at -65°C. The freezer minimises the risk of compromising valuable samples.

### Improved Temperature Performance

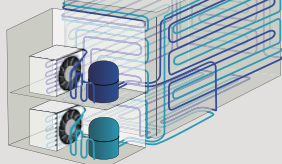
**TwinGuard** chest freezers maintain better temperature stability and uniformity during routine door openings than equivalent upright models as less cold air escapes the freezer while the door is open.

### Enhanced Use & Intelligent Security

A colour LCD touch panel allows full user control, even with gloved hands, while the USB port makes transferring logged data to a PC convenient. The filterless design of the freezers reduces routine maintenance.

## TwinGuard

Dual Cooling Compressors



### Valuable Sample Storage

With two independent systems, each sustaining ultra-low temperatures, your samples remain safe. Optional CO<sub>2</sub> backup provides an extra layer of protection.



### Predictive Maintenance

Performance monitoring ensures the freezer is operating within specifications. This protects the compressors and condenser fans. External stress on the compressors or fans, due to ambient temperature abnormality or excess load, is displayed for immediate notification.



### Restricted Access Laboratories

Significantly extended critical time to react to any sudden mechanical failure. Ideal for high security applications.

# TwinGuard

-86°C Ultra-Low Temperature Freezers



MDF-DC500VX

## Filterless Design

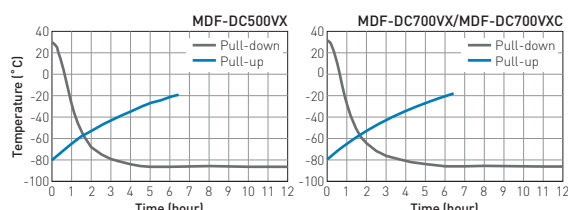
The filterless construction of the freezers reduces routine maintenance time by eliminating the need for regular cleaning of filters.

## Improved Temperature Performance

The TwinGuard -86°C chest freezer design provides optimal temperature stability and uniformity during routine lid openings, minimizing the loss of cold air even when the freezer lid is open.

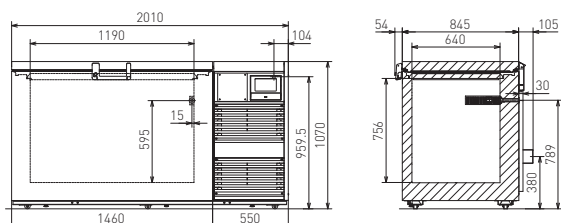
## Performance Data

AT30°C Pull-down & Pull-up Temperature

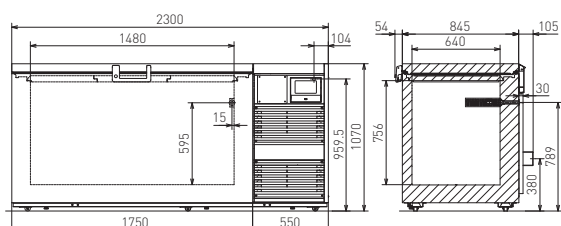


## Dimensions

Unit : mm



MDF-DC500VX



MDF-DC700VX  
MDF-DC700VXC

| Model Number                                   |                         | MDF-DC500VX-PE   | MDF-DC700VX-PE    | MDF-DC700VXC-PA |
|--|-------------------------|--|-------------------|-----------------|
| External dimensions (W x D x H) <sup>1)</sup>  | mm                      | 2010 x 845 x 1070  | 2300 x 845 x 1070 |                 |
| Internal dimensions (W x D x H)                | mm                      | 1190 x 640 x 756   | 1480 x 640 x 756  |                 |
| Volume   | litres                  | 575  | 715               |                 |
| Net weight                                     | kg                      | 328  | 358               | 366             |
| Capacity                                       | 2" boxes                | 416  | 520               |                 |
| Performance                                    |                         |  |                   |                 |
| Cooling performance <sup>2)</sup>              | °C                      | -86  |                   |                 |
| Temperature setting range                      | °C                      | -50 to -90   |                   |                 |
| Temperature control range <sup>2)</sup>        | °C                      | -50 to -86   |                   |                 |
| Control  |                         |  |                   |                 |
| Controller                                     |                         | Microprocessor, non-volatile memory  |                   |                 |
| Display  |                         | LCD Touch Screen   |                   |                 |
| Temperature sensor                             |                         | Pt-1000  |                   |                 |
| Refrigeration                                  |                         |  |                   |                 |
| Refrigeration system                           |                         | Independent Dual-Cooling   |                   |                 |
| Compressors                                    | W                       | 2 x 1100   |                   |                 |
| Refrigerant                                    |                         | HFC mixed  |                   |                 |
| Insulation material                            |                         | PUF / VIP PLUS   |                   |                 |
| Construction                                   |                         |  |                   |                 |
| Exterior material                              |                         | Painted Steel  |                   |                 |
| Interior material                              |                         | Stainless Steel  |                   |                 |
| Outer doors/lid                                | qty                     | 1  |                   |                 |
| Outer door lock                                |                         | Y  |                   |                 |
| Inner doors/lid                                |                         | 3 pieces (Styrofoam)   |                   |                 |
| Access port                                    | qty                     | 1  |                   |                 |
| Access port position                           |                         | Back   |                   |                 |
| Access port diameter                           | Ø mm                    | 17   |                   |                 |
| Alarms   |                         | (V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)   |                   |                 |
| Power failure                                  |                         | V-B-R  |                   |                 |
| High temperature                               |                         | V-B-R  |                   |                 |
| Low temperature                                |                         | V-B-R  |                   |                 |
| Filter   |                         | Filterless design  |                   |                 |
| Door open                                      |                         | V-B  |                   |                 |
| Electrical and Noise Level                     |                         | MDF-DC500VX-PE   | MDF-DC700VX-PE    | MDF-DC700VXC-PA |
| Power supply                                   | V                       | 230 / 240  |                   | 220             |
| Frequency                                      | Hz                      | 50   |                   | 60              |
| Noise level <sup>3)</sup>                      | dB (A)                  | 52   |                   |                 |
| Options  |                         |  |                   |                 |
| Liquid CO <sub>2</sub> back-up                 |                         | MDF-UB5-PW   |                   |                 |
| Temperature recorders                          | - Circular type         | MTR-G85C-PE<br>— Chart paper: RP-G85-PW<br>— Ink pen: PG-R-PW                                      |                   |                 |
|  | - Continuous strip type | MTR-85H-PW<br>— Chart paper: RP-85-PW<br>— Ink pen: DF-38FP-PW<br>— Recorder housing: MDF-S3085-PW |                   |                 |
| Optional Communication Systems                 |                         |  |                   |                 |
| Ethernet interface [LAN] <sup>4)</sup>         |                         | MTR-L03-PW   |                   |                 |
| Digital interface [RS232C/RS485] <sup>4)</sup> |                         | MTR-480-PW   |                   |                 |
| Quality Management System                      |                         |  |                   |                 |
| Certification                                  |                         | ISO9001  |                   |                 |

<sup>1)</sup> External 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]

<sup>4)</sup> Only for MTR-5000 (data acquisition system) users.

**Caution:** PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents stored in the product.



Preservation Equipment, Experimental Environment Equipment, Dispensary Equipment, Culturing Equipment and Drying & Sterilising Equipment for General Laboratory use  
The management of the design, development, production and servicing of the above.  
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