VIP ECO
Natural Refrigerants Ultra-Low Temperature Freezer
-86°C to -40°C

528 L / 729 L

Cost-saving and environmentally friendly sample storage within an optimal footprint.
The VIP ECO -86°C to -40°C upright freezer provides maximum sample storage capacity within an optimum footprint. When combined with natural refrigerants to minimise energy consumption, environmental impact is reduced.

Natural Refrigerants and Inverter Technology
Naturally occuring hydrocarbon [HC] refrigerants have minimal effect on the environment and are compliant with environmental legislation for climate control. Combined with inverter technology, these refrigerants also provide more efficient cooling without compromising cooling performance and ambient tolerance and recovery speeds following door openings.

Efficient Sample Storage
New cabinet design combines an insulated outer door with superior storage efficiency and an inner door designed for uniform temperature distribution. This improves storage efficiency approximately 10% (576 pcs of 2-inch Cryo boxes can be stored in the MDF-DU702VH, MDF-DU702VHL) while maintaining the same footprint as conventional models.

Intelligent Interface
The newly developed ergonomic “EZlatch” door handle makes access to stored samples even easier. Intuitive and intelligible large colour LCD touchpanel is provided.

Energy efficient performance
Natural refrigerants, compressors and integrated electronics combine to lower operating costs by up to 30%*. Freezer operation is managed by effectively balancing temperature performance and energy management.

Flexible shelf layout
The inner space offers flexible storage, allowing either three or four shelves* and chamber bottom to be used. Also, an inner door with four or five small doors (optional) is available.

Reliable controllability and data log function
Large colour LCD touchpanel is accurately controlled even with a gloved hand, while the USB port makes transferring logged data of product’s operational status to a PC convenient.

* Compared to conventional models.
Power source: 230V/240V 50Hz, AT 30°C

* Three shelves equipped as standard.

PHC Corporation, Biomedical Division
VIP ECO
Natural Refrigerants
Ultra-Low Temperature Freezer

Approximately 110 mm¹ installation width can be reduced when installing 3 units in line compared to conventional units.

The "Chamfer-design" body front features a chamfered edge for reduced installation space when compared to conventional models in a multiple unit installation. The design is especially suitable for a biobank or similar application. Newly developed automatic vacuum release port and fivefold gasket are adopted. Automatic release of negative pressure and reduced frost realise user convenience.

Opening the inner door to 90 degrees allows storage racks to be removed. Contacting each other for door opening/closing saves space.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>MDF-DU502VH-PS</th>
<th>MDF-DU502VH-PA</th>
<th>MDF-DU502VHL-PS</th>
<th>MDF-DU502VHL-PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dims.</td>
<td>1126 (44.3)</td>
<td>882 (34.7)</td>
<td>1400 (55.1)</td>
<td>40 (1.6)</td>
</tr>
<tr>
<td>Internal dims.</td>
<td>790 x 882 x 1993</td>
<td>1030 x 882 x 1993</td>
<td>729 x 600 x 1400</td>
<td>729 x 600 x 1400</td>
</tr>
<tr>
<td>Volume (litres)</td>
<td>528</td>
<td>794</td>
<td>246</td>
<td>278</td>
</tr>
<tr>
<td>Capacity (boxes)</td>
<td>984</td>
<td>1104</td>
<td>1514</td>
<td>1341</td>
</tr>
</tbody>
</table>

Performance

- Cooling performance: °C
- Temperature setting range: °C
- Temperature control range: °C
- Control: Microprocessor, non-volatile memory
- Display: LCD Touchpanel

Vibration

- At 30°C Pull-down & Pull-up
  - Time (hour): 0.8
  - Temperature (°C): 794 (31.3) 794 (31.3)
  - Power supply: V (12.7)

Options

- Small inner door kit set of 2
- Casters: set of 4
- Inventory rack: IR-224U-PW, IR-316U-PW
  - Circular type: MTR-85H-PW
  - Continuous strip type: MTR-5000-PW

Optional Communication Systems

- Digital interface: RS232C/RS485
- Ethernet interface: LAN

Certification

- Microprocessor, non-volatile memory
- LCD Touchpanel

User friendly for daily operation with newly developed vacuum release port and fivefold gasket

Newly developed automatic vacuum release port and fivefold gasket are adopted. Automatic release of negative pressure and reduced frost realise user convenience even for frequent door opening.

Opening the inner door to 90 degrees allows storage racks to be removed.

---

¹ Comparison of MDF-DU702VH, MDF-DU702VHL and the conventional MDF-DU700VH product.

² Nominal value - Background noise 20 dB[A].

³ Air temperature measured at freezer centre,

4) Exterior dimensions of main cabinet only, excluding handle and other external projections.

5) Usable storage capacity of 2" boxes when the original 3 trays installed.

6) Installation of small inner door kit may effect usable storage capacity.

7) Requires sensor cover MTR-DU700SF-PW.

8) Only for MTR-5000 (data acquisition system) users.

9) MDF-DU502VH, MDF-DU502VHLMDF-DU502VHL are for laboratory use.

6) Adjustment of mechanical compression equipment. 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 of the product.

---

PHC Corporation
Biomedical Division
1-1-1 Sakada, Dizumi-machi, Ora-gun, Gunma 370-0596, Japan

DISTRIBUTED BY:

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.

PHC Corporation, Biomedical Division

Environment management system: ISO14001

Printed in Japan 1114-2019-03-DD

https://www.phchd.com/global/biomedical/