

Preservation  
sub-zero



MDF-U33V



## Temperature

(Ambient temperature 30°C)

**-86°C**

## Effective capacity

**333 litres**

## V.I.P. PLUS

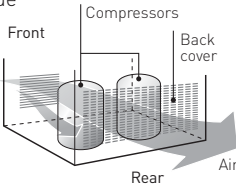
(Vacuum Insulation Panel)

### Ultra slim, space saving Ultra-Low Temperature Freezer with Improved energy consumption

- V.I.P. PLUS technology maximises storage capacity
- Safe operation with status alert continuous condition monitoring
- The inner doors are removable for cleaning and defrosting
- Enhanced security
- Improved accessibility
- Quiet operation
- Improved energy consumption
- Can hold up to 216 pcs of 2-inch boxes or 144 pcs of 3-inch boxes

## DESIGN

- PHCbi V.I.P. PLUS -86°C ultra-low temperature freezers use vacuum insulation cabinet construction that reduces the wall thickness from 14 cm to 9 cm and achieves up to 30 % more storage capacity than a conventionally insulated freezer without increasing the footprint.
- The newly developed refrigeration system and the freezer structure offer a quiet experimental environment.
- The newly developed back cover combined with new aerodynamically designed and placed components in the refrigeration compartment provide superior air flow, making it possible to drastically reduce the stress on the freezer and contributing to excellent durability.
- Two independent and insulated inner doors with gaskets prevent cold air leakage.



## RELIABILITY

- Status alert (condition monitor) monitors ambient and system conditions continuously and notifies of any abnormalities before a problem happens.

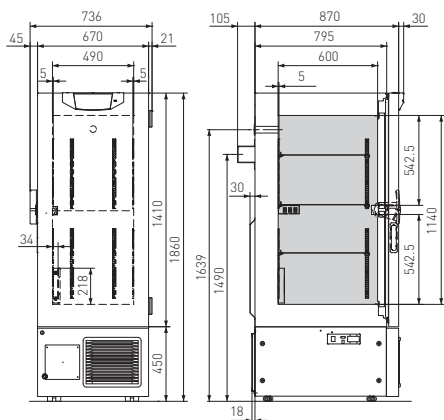
## ACCESSIBILITY

- A beak style inner door latch tightly closes the inner door against the freezer frame. It also helps make opening and closing the door smoother.
- The condenser filter is situated at the bottom right side of the front panel to make filter removal and cleaning easier.



## Dimensions

Unit : mm



## SAFETY

- Alarm lamp and buzzer offer secure warning of power failure or abnormal temperature increase.
- High and low temperature warning provides an audible and visual alarm when the temperature deviates more than  $\pm 5^{\circ}\text{C}$  to  $\pm 20^{\circ}\text{C}$  (adjustable) from the set point.
- Alarm ring-back function ensures that buzzer will resume operation, should alarm conditions continue after it is silenced.
- Microprocessor-controlled filter-clog check function protects the refrigeration circuit.
- The rugged, one-handed outer door latch has a hole to allow a padlock to securely protect valuable samples.
- Control panel with digital display for easy operation.



Model Number	MDF-U33V-PK	MDF-U33V-PB	MDF-U33V-PE
External dimensions (W x D x H)*1	mm	670 x 870 x 1860	
Internal dimensions (W x D x H)	mm	490 x 600 x 1140	
Effective capacity	litres	333	
Net weight	kg	Approx. 255	
<b>Performance</b>			
Temperature range	$^{\circ}\text{C}$	-50 to -86 (in $1^{\circ}\text{C}$ increments)	
Maximum cooling performance	$^{\circ}\text{C}$	-86 [Ambient temperature $30^{\circ}\text{C}$ ]	
Storage capacity		2" box: 216 pcs. / 3" box: 144 pcs.	
<b>Construction</b>			
Shelves	qty	Stainless steel, 3	
Access port		17mm diameter, 3 locations (back, bottom left/right corner)	
Compressor		Hermetic type 450 W (high stage side), Hermetic type 750 W (low stage side)	
Refrigerant		HFC	
Alarms		High / low temperature, Power failure, Filter check, Self diagnostics, Door check, Remote alarm contact, Part replacement notification	
Remote alarm contact		Allowable contact capacity: DC 30 V, 2 A	
Accessories		1 set of keys, 1 scraper	
<b>Electrical and Noise Level</b>			
Power supply	V	220	220 / 230/240
Frequency	Hz	60	50
Noise level*2	dB [A]	49	
<b>Quality Management System</b>			
Certification		ISO13485	ISO13485 / ISO9001

\*Cooling performance is indicated by the temperature reached at the center of the freezer [at ambient temperature of  $30^{\circ}\text{C}$  with no load]. In order to use the freezer at a stable temperature for a long time, it is recommended that the temperature be set to at least  $5^{\circ}\text{C}$  higher than the indicated lowest temperature.

In addition, depending on the usage conditions, it may not be possible to reach the indicated lowest temperature.

**Caution:** PHC Corporation guarantees the product under certain warranty conditions. PHC Corporation is in no way shall be responsible for any loss of content or damage to content. The battery for power failure alarm is an article for consumption. It is recommended that the battery will be replaced about every 3 years.

• Appearance and specifications are subject to change without notice.

\*1 External dimensions of main cabinet only - see dimension drawings showing handles and other external projections.

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

## Options

### Temperature recorder



Circular recorder  
**MTR-G85C-PE**

Strip chart recorder  
**MTR-85H-PW**

Recorder mounting bracket  
**MDF-S3085-PW**  
(for MTR-85H-PW)

### Racks



Inventory rack  
**IR-A216U-PW**

Inventory rack  
**IR-220U-PW**

### Rack Capacity

For 2-inch box	
IR-A216U-PW	6
IR-220U-PW	6

### For 3-inch box

IR-312UN-PW	12
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### Liquid CO<sub>2</sub> / N<sub>2</sub> Backup Kits



LCO<sub>2</sub> backup system  
**CVK-UB2-PW**  
LN<sub>2</sub> backup system  
**CVK-UBN2-PW**



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.



Freezers, Refrigerators, Incubators, and Drying and Sterilising Equipment for Medical use

The management of the design, development, production and distribution of the above.



PHC Corporation Biomedical Division is certified for:  
Environmental management system:  
ISO14001

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