



## VIP ECO Ultra-Low Temperature Freezer

-86°C to -40°C



84 L / 180 L

PHC introduces a newly developed **VIP ECO** series of compact, ultra-low temperature (-86°C) freezers, ideal for personal use. The series makes use of a CFC-free natural refrigerant, reducing environmental impact and delivering an optimum tool for personal operation.

### Natural refrigerants

Naturally occurring hydrocarbon (HC) refrigerants have minimal effect on the environment and are compliant with environmental legislation for climate control. These refrigerants also provide more efficient cooling without compromising cooling performance, ambient tolerance, and recovery speeds following door openings.

### Organic EL control panel includes USB port

A new control panel with organic EL display is now positioned close to the door latch instead of the lower section as was conventionally done till now. This significantly improves visibility for the user and makes operation simple and intuitive. A logging function is included, allowing users to save temperature/ alarm history data and transfer data using the USB port.



USB port

### Compact, personal-use type installs anywhere

The external width of MDF-DC102VH is 558 mm, and the MDF-DC202VH width is 1,018 mm. The compact configurations of each model offer installation flexibility whether room corner or right alongside a desk, making them ideal for dedicated use by individuals and small groups.

### Energy efficient performance

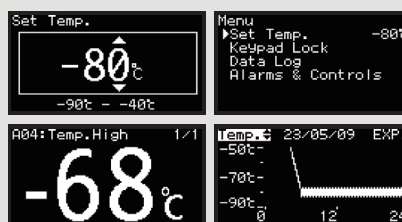
Natural refrigerants, compressor and integrated electronics combine to lower operating costs compared to existing models by up to 6%\*. Freezer operation is managed by effectively balancing temperature performance and energy management.



\* Compared to conventional model

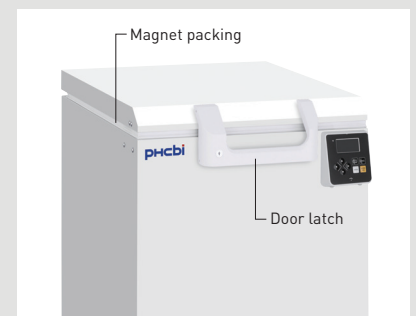
### Organic EL offers multiple display options

The control panel with organic EL display allows the user to conduct various operations, displaying transitions, controlled temperature maximum/ minimum points as well as error messages.



### Door latch and magnet packing combined

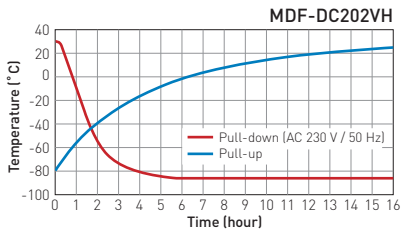
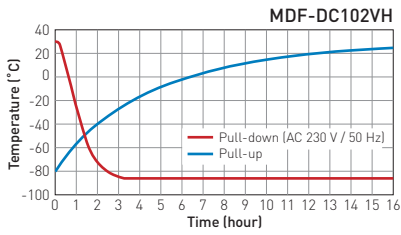
Door operation is through magnet packing. This feature in combination with the door latch, ensures the door is firmly closed and prevents cold air leakage.



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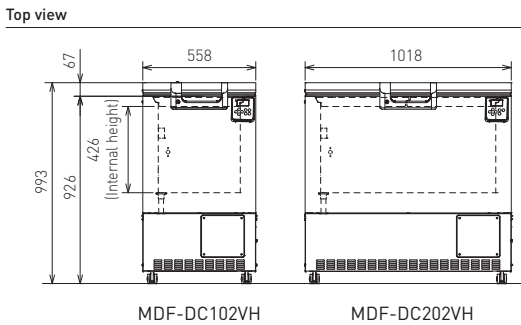
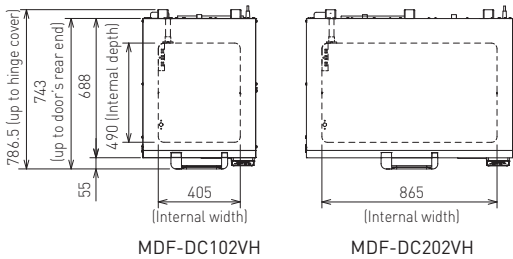
## Performance Data

### AT30°C Pull-down & Pull-up Temperature

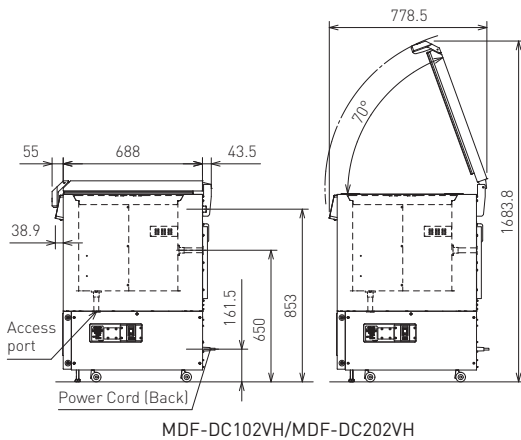


## Dimensions

Unit : mm



## Front view



## Side view

Model Number	MDF-DC102VH-PA	MDF-DC202VH-PA
External dimensions (W x D x H) <sup>1)</sup>	mm 558 x 688 x 993	1018 x 688 x 993
Internal dimensions (W x D x H)	mm 405 x 490 x 426	865 x 490 x 426
Volume	liters 84	180
Net weight	kg 85	115
Capacity <sup>2)</sup>	2" boxes 42	105
<b>Performance</b>		
Cooling performance <sup>3)</sup>	°C	-86
Temperature setting range	°C	-90 to -40
Temperature control range <sup>3)</sup>	°C	-86 to -40
<b>Control</b>		
Controller	Microcomputer control system	
Display	Organic EL display	
Temperature sensor	Platinum resistance [Pt 1,000 Ω]	
<b>Refrigeration</b>		
Refrigerant	HC refrigerant	
Insulation	Rigid polyurethane foam + Vacuum insulation panel	
<b>Construction</b>		
Exterior material	Painted Steel	
Interior material	Painted Steel	
Outer door	qty 1	
Outer door lock	Y	
Inner lid	qty 1 lid [styrene foam]	2 lids [styrene foam]
Compressor	Hermetic type, Output 550 W	
Evaporator	Tube on sheet type	
Condenser	Wire and tube	
Access port	qty 2	
Access port position	back x1, bottom x1	
Access port diameter	∅ mm 17	
Casters	4 [2 leveling feet]	
<b>Alarms (V = Visual Alarm, B = Buzzer Alarm, M = Message, R = Remote Alarm)</b>		
Power failure	V-B-M-R	
High temperature	V-B-M-R	
Low temperature	V-B-M-R	
Remote alarm contact	Allowable contact capacity: DC 30 V, 2 A <sup>4)</sup>	
<b>Electrical and Noise Level</b>		
Power supply	V 115	
Frequency	Hz 60	
Noise level <sup>5)</sup>	dB [A] 52	
<b>Options</b>		
Back-up cooling kit	MDF-UB81-PW <sup>4)</sup>	
Inventory rack	IR-207C-PW, IR-305C-PW	
Temperature recorders	- Circular type	MTR-G85A-PA <sup>7)</sup> - Chart paper: RP-G85-PW - Ink pen: PG-R-PW
	- Continuous strip type	MTR-85H-PW <sup>7)</sup> - Chart paper: RP-85-PW - Ink pen: DF-38FP-PW - Recorder housing: MDF-S3085-PW
	Recorder sensor cover	MTR-C8-PW
	<b>Optional Communication Systems</b>	
Digital interface [RS232C/RS485]	MTR-480-PW <sup>4)</sup>	
Ethernet interface [LAN]	MTR-L03-PW <sup>4)</sup>	

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

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

3) Air temperature measured at freezer center, ambient temperature 30°C, no load.

4) Standard signal and interface cables with a maximum length of 30 meters are recommended.

5) Nominal value - Background noise 20 dB[A].

6) Settable range of the injection start temperature is -70°C to -50°C.

7) Requires sensor cover MTR-C8-PW.

• Appearance and specifications are subject to change without notice.

**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.

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