MDF-MU549DH
(limited countries and regions)

MDF-MU549DH

-40°C Biomedical ECO Freezer with Natural Refrigerant

ECO natural refrigerants
IC+ inverter compressor

479 L

-40°C biomedical ECO freezer with separate temperature controls for the 2 completely independent chambers

The unit provides environmental savings and flexibility while maintaining the quality of the samples during preservation. Such flexibility includes height-adjustable shelf trays, separate top and bottom chambers with independent temperature settings and separate doors that prevent cold air leakage.

Natural Refrigerants and Inverter Technology

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, ambient tolerance and recovery speeds following door openings.

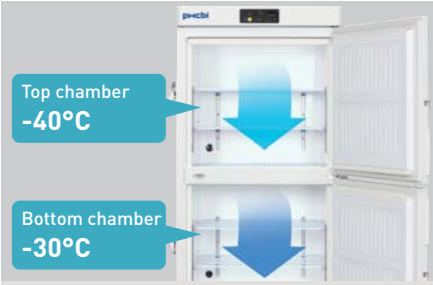
2 independently controlled temperature chambers

Top and bottom chambers are equipped with 2 independent refrigeration circuits. This enables separate temperature settings and defrosting for the two chambers.

Height-adjustable shelf trays

The unit features completely height-adjustable shelf trays, accommodating chamber containers of various sizes.

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



Double chamber allows multi-purpose storage
2 completely independent chambers each with its own temperature control make storage possible of samples with different storage temperature requirements. Moreover, independent temperature control allows for defrosting each chamber separately without having to relocate samples.

Safe & Secure Sample Storage
To securely preserve the valuable samples, multiple safety features include 2 separate doors that reduce cold in-chamber air leakage when taking samples in/out and high/low abnormal temperature alarms. In addition to a standard door lock, a latch with a padlock is also available.

-40°C Biomedical ECO Freezer with Natural Refrigerant

Inverter Compressors

While conventional freezers use a single-speed compressor's on/off cycle, the unit uses inverter compressors that can run at different speeds to maximise cooling performance under different conditions. Combined with hydrocarbon refrigerants, these compressors ensure the most efficient energy use and reduced heat output.

Versatile Alarm Functions

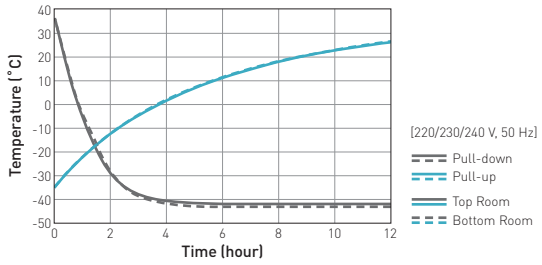
Alarms for high/low temperatures and an error code display with self-diagnostic functions inform users of any abnormalities such as power failures for prompt actions that avoid damaging valuable samples.

Easy Disposal of Defrosting Water

Manual defrosting becomes easy using the drain hose that is attached to the main unit (hose usually stowed away when not in use).

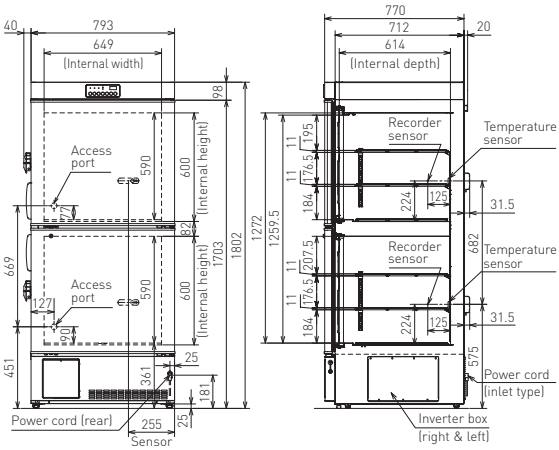
Performance Data

AT35°C Pull-down & Pull-up Temperature[2]



Dimensions

Unit: mm



(AC 220 V/230 V/240 V 50 Hz/60 Hz)

Model Number		MDF-MU549DH-PE	MDF-MU549DH-PK
External dimensions (W x D x H) [1]	mm	793 x 770 x 1802	
Internal dimensions (W x D x H)	mm	649 x 614 x 600 (per chamber) x 2	
Volume	litres	479	
Net weight	kg	165	
Performance			
Cooling performance [2]	°C	-40	
Temperature setting range [2]	°C	-45 to -18	
Temperature control range [2]	°C	-40 to -20	
Control			
Controller		Microprocessor, non-volatile memory	
Display		LED	
Temperature sensor		Thermistor	
Refrigeration			
Compressors	W	2 x 400 (Used in upper chamber and lower chamber respectively)	
Refrigerant		HC	
Insulation material		PUF	
Insulation thickness	mm	70	
Construction			
Exterior material		Painted Steel	
Interior material		Painted Steel	
Outer door	qty	2	
Outer door lock		Yes	
Shelves	qty/mm	6 (W624 x D510)	
Max. load - per shelf	kg	30	
Access port	qty	2 (1 per chamber)	
Access port position		Back	
Access port diameter	Ø mm	30	
Casters	qty	4 (2 levelling feet)	
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	
Electrical and Noise Level		MDF-MU549DH-PE	MDF-MU549DH-PK
Power supply	V	220/230/240	220
Frequency	Hz	50	60
Noise level [3]	dB (A)	42	
Accessories			
Accessories	qty	1 Key set / 1 Defrost spatula	
Options		MDF-MU549DH-PE	MDF-MU549DH-PK
Temperature recorders - Circular type		MTR-G85C-PE — Chart paper: RP-G85-PW — Ink pen: PG-R-PW — Recorder housing: MDF-S740T-PW (for top side) MPR-S7-PW (for lower front)	
Temperature recorders - Continuous strip type		MTR-4015LH-PE — Chart paper: RP-40-PW — Recorder housing: MPR-S30-PW (for unit lower front) *Unit left top mounting hardware included in recorder kit	
Storage container		MDF-05SC-PW (2 pcs/set)	
Storage container - Inner dimensions	mm	W280 x D552 x H157	
Optional Communication Systems			
Digital interface [RS232C/RS485] [4]		MTR-480-PW	
Ethernet interface [LAN] [4]		MTR-L03-PW	
Quality Management System		MDF-MU549DH-PE	MDF-MU549DH-PK
Certification		ISO13485	

[1] External dimensions of main cabinet only, excluding handles and other external projections.
[2] Air temperature measured at freezer centre, ambient temperature 35°C, no load.
[3] Nominal value - Background noise 20 dB(A)
[4] Only for MTR-5000 (data acquisition system) users.

•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 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.

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 1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma 370-0596, Japan

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

DISTRIBUTED BY:

PHC Corporation

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

Printed in Japan 1306-2020-02-DD