

Ultra-low Temperature Freezer | MDF-DU702VX **TwinGuard**

Ultimate Sample Protection

New optimised Dual Cooling System "TwinGuard" comprised of independent dual cooling circuits realises -86 °C and one side of the cooling circuits maintains chamber temperature at -70 °C.

Efficient Sample Storage

New cabinet design combines an insulated outer door with superior storage efficiency and an inner door designed for uniform temperature distribution.

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.

Model Number		MDF-DU702VX-PE	MDF-DU702VX-PB / MDF-DU702VXC-PA
External dimensions (W x D x H) ¹⁾	mm	1030 x 882 x 1993	
Internal dimensions (W x D x H)	mm	870 x 600 x 1400	
Volume	litres	729	
Net weight	kg	328	328 / 338
Capacity ²⁾	2" boxes	576	
Performance			
Cooling performance ³⁾	°C	-86	
Temperature setting range	°C	-90 to -50	
Temperature control range ³⁾	°C	-86 to -50	
Control			
Controller		Microprocessor, non-volatile memory	
Display		LCD Touchpanel	
Temperature sensor		Pt-1000	
Refrigeration			
Refrigeration system		Independent Dual-Cooling	
Compressors	W	2 x 1100	
Refrigerant		HFC mixed	
Insulation material		PUF / VIP PLUS	
Insulation thickness	mm	80	
Construction			
Exterior material		Painted Steel	
Interior material		Painted Steel	
Outer door	qty	1	
Outer door lock		Y	
Inner doors	qty	2 pieces	
Shelves	qty	3 (stainless steel)	
Max. load - per shelf	kg	50	
Max. load - total	kg	515 ⁴⁾	
Vacuum release port		2 (1 automatic, 1 manual)	
Access port	qty	3	
Access port position		3 locations [rear x 1, bottom x 2]	
Access port diameter	∅ mm	17	
Casters	qty	4 (2 leveling 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	
Filter		Filterless design	
Door open		V-B	
Electrical and Noise Level			
Power supply	V	230 / 240	220
Frequency	Hz	50	50 (VX) / 60 (VXC)
Power Consumption (230V/50Hz) SV-80°C	kWh/day	AT23°C: 16.87 (Normal) / 15.65 (ECO) AT30°C: 18.60 (Normal) / 18.43 (ECO)	
Noise level ⁵⁾	dB (A)	52	
Options			
Small inner door kit	set of 5	MDF-7ID5-PW ⁶⁾	
	set of 4	MDF-7ID4-PW ⁶⁾	
Liquid CO ₂ back-up		MDF-UB7-PW	
Inventory rack		IR-224U-PW, IR-316U-PW	
Temperature recorders	- Circular type	MTR-G85C-PE ⁷⁾	- Chart paper: RP-G85-PW - Ink pen: PG-R-PW
	- Continuous strip type	MTR-85H-PW ⁷⁾	- Chart paper: RP-85-PW - Ink pen: DF-38FP-PW - Recorder housing: MDF-S3085-PW
Optional Communication Systems			
Digital interface [RS232C/RS485] ⁸⁾		MTR-480-PW	
Ethernet interface [LAN] ⁸⁾		MTR-L03-PW	

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 centre, ambient temperature 30 °C, no load.

⁴⁾ Max. load allowed for chamber interior — total shelves (3) and chamber bottom, excluding load on casters mounted on product.

⁵⁾ Nominal value - Background noise 20 dB(A).

⁶⁾ Installation of small inner door kit may effect usable storage capacity. Temperature performance may also change, cf. the manual.

⁷⁾ Requires sensor cover MTR-DU700SF-PW.

⁸⁾ 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.



Reliable control-ability and data log function

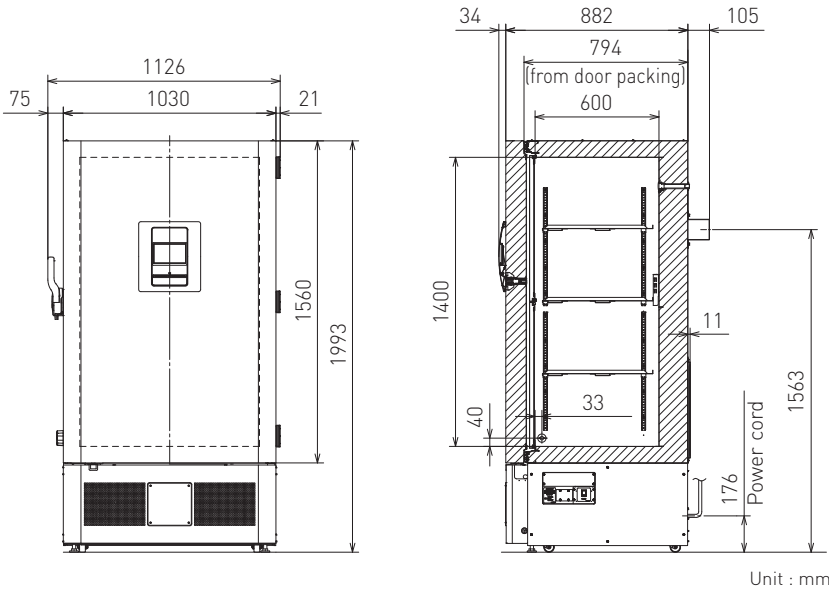
Large colour LCD touchpanel is accurately controlled even with a gloved hand, while the USB memory port makes transferring logged data of product's operational status to a PC convenient.



With MDF-7ID5-PW inner door kit

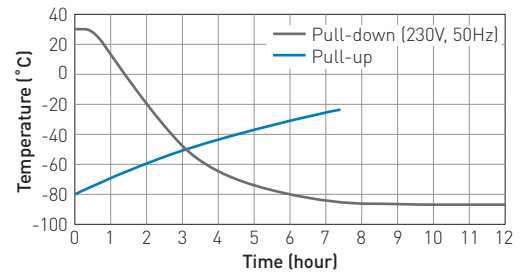


Dimensions

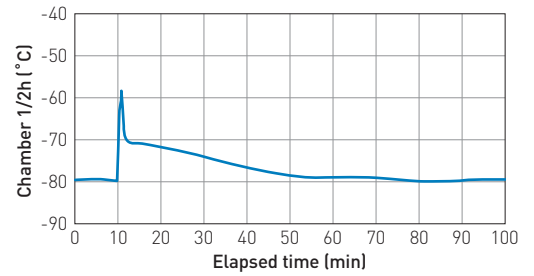


Performance Data

AT30°C Pull-down & Pull-up Temperature (No load)

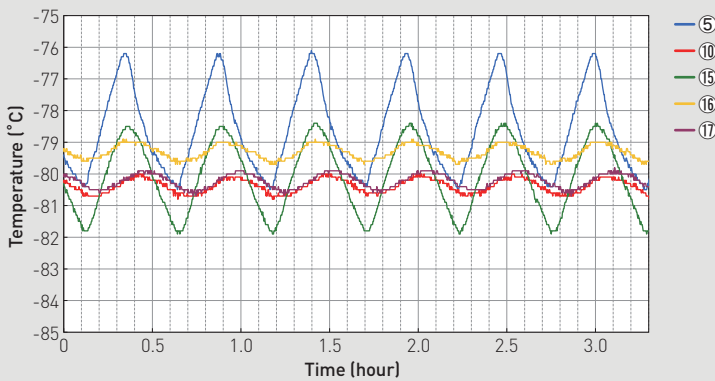


Temperature recovery after top door opened for 60 sec., Conditions: AT23°C, 230V/50Hz, SV-80°C

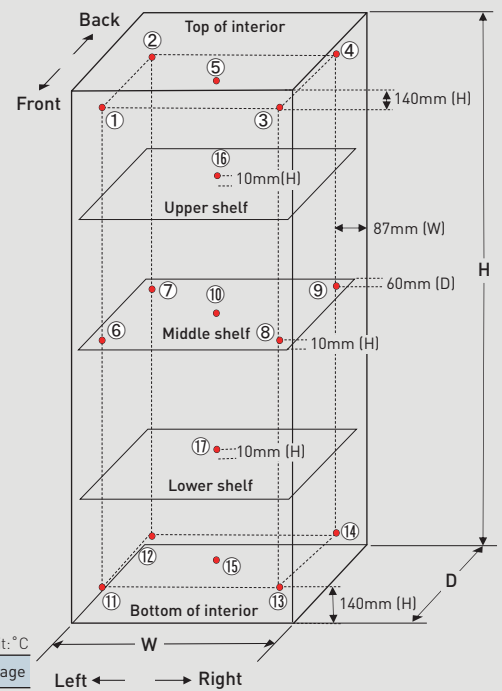


Temperature Stability

Condition: SV-80°C, AT23°C Normal-mode 230V/50Hz, no load



Temperature uniformity - 17 points measuring



Internal Temperature Uniformity (Reference Data)

Distribution data

Temperature of the cycle in each area (SV-80°C, air temperature)

Conditions

Load: Unloaded

Ambient temperature 23°C Normal-mode 230V/50Hz

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	Average
Maximum	-75.7	-76.0	-76.2	-76.1	-76.2	-79.5	-79.8	-79.4	-79.4	-80.0	-78.1	-79.0	-77.8	-78.1	-78.4	-79.0	-79.8	—
Minimum	-80.3	-80.4	-80.3	-80.8	-80.5	-80.7	-81.6	-80.6	-81.4	-80.8	-81.4	-82.8	-81.5	-82.0	-81.9	-79.7	-80.7	—
Middle of cycle	-78.0	-78.2	-78.3	-78.5	-78.4	-80.1	-80.7	-80.0	-80.4	-80.4	-79.8	-80.9	-79.7	-80.1	-80.2	-79.4	-80.3	-79.6

(Note) Disclaimer

- Specification may change without notice.
- The performance data was measured by inhouse test data of PHC.
- The Performance data is a reference data and not guaranteed.
- Not all the products available in all countries.