PHCBI

MPR-N450FH

MPR-N450FSH

MPR
Natural Refrigerant
Pharmaceutical Refrigerators with Freezer

+2ºC to +14ºC Refrigerators
-20ºC to -30ºC Freezers

ECO natural refrigerants

IC+ inverter compressor

462 L (R: 326 L / F: 136 L)

Providing a complete storage solution — refrigerator and freezer in one unit. The MPR-N450FH/MPR-N450FSH combine high-performance refrigeration with a -30°C freezing environment within a small footprint for flexible, reliable and convenient sample storage. Natural refrigerants minimise environmental impact for a sustainable storage solution.

Natural Refrigerants and Inverter Technology

Naturally occurring 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 performance and ambient tolerance and recovery speeds following door openings.

Superior Uniformity

The refrigerator provides superior uniformity throughout. Temperatures remain stable wherever products are stored, even in a fully loaded chamber. The refrigerator is engineered to prevent inadvertent freezing of temperature sensitive vaccines.

Security Control and Monitoring

The microprocessor controller and OLED display are door mounted at eye level. Control buttons allow convenient but secure user control. Refrigerator and freezer temperatures can be displayed in 0.1°C increments simultaneously or individually. Minimum/maximum temperatures are automatically displayed every 12/24 hours. All alarm conditions are displayed and recorded. Data transfer is through a USB port.

Energy-efficient performance

PERFORMANCE

Natural refrigerants, compressors and integrated electronics combine to achieve facility sustainability objectives by minimising any environmental impact without compromising cooling performance, ambient tolerance and recovery speeds following door openings.

Temperature Distribution

The refrigerator includes a high performance refrigeration system with a forced air, back wall plenum. This provides even, horizontal airflow across the solid, adjustable glass shelves at each shelf level. A uniform freezer temperature is maintained through a cold wall refrigeration system with natural circulation.

Safe & Secure storage

Adjustable audible and visual alarms are standard, along with integrated system diagnostics and predictive performance supervision. The password-protected control panel provides security and minimises risk of accidental changes.

PHC Corporation, Biomedical Division

Pharmaceutical Refrigerators with Freezer

With the new platform, the volume of the freezer (-30°C) has increased to 136 L, which is about 60%* larger than the conventional model. By implementing a new platform with improved duct and mechanical layout, storage efficiency increased by 10% per area of storage.

* comparison with MPR-414F.

Ease of Use

Removable glass shelves inside the refrigerator compartment enable easy cleaning. Clear visibility inside the refrigerator compartment is provided by an LED light. Optional containers for the freezer compartment are available for flexible storage solutions.
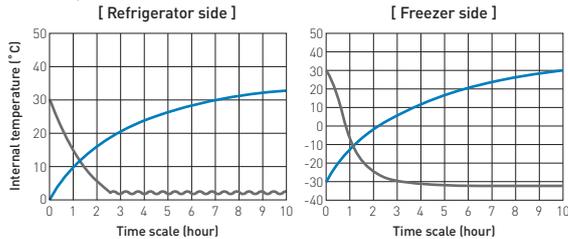
Defrost Methods

The MPR-N450FH/MPR-N450FSH include manual defrost for the freezer compartment. The refrigerator compartment includes automatic defrost which activates electronically when needed. The refrigerator evaporator operates above freezing at all times. This prevents vaccines and lab supplies from freezing.
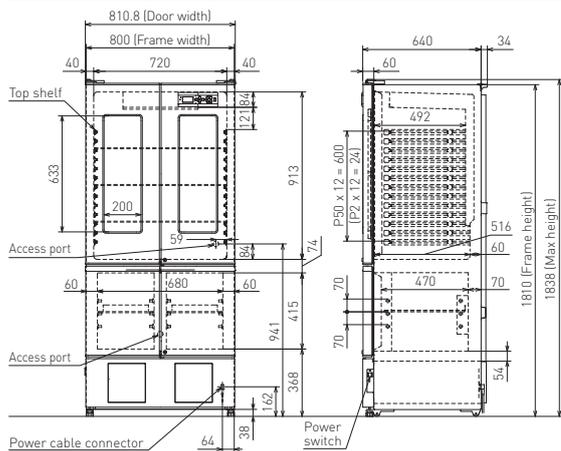
Performance Data

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

— Pull-down (220/230/240 V, 50 Hz)
— Pull-up

[Refrigerator side]

[Freezer side]

Dimensions

Unit: mm

Model Number		MPR-N450FH-PE / MPR-N450FSH-PE	
		MPR-N450FH-PA / MPR-N450FSH-PA	
		MPR-N450FH-PK / MPR-N450FSH-PK	
Dimensions		Refrigerator	Freezer
External dimensions (W x D x H) [1]	mm	800 x 640 x 1810	
Internal dimensions (W x D x H)	mm	720 x 516 x 913	680 x 470 x 415
Volume	litres	326	136
Net weight	kg	129 (FH) / 121 (FSH)	
Performance			
Temperature control range [2]	°C	2 to 14	-20 to -30
Control			
Controller		Microprocessor with non-volatile memory	
Display		Digital (White graphic OLED), 1°C (increment of 0.1)	
Temperature sensor		Thermistor	
Refrigeration			
Cooling method		Fan forced air circulation	Direct cooling
Defrost method		Cyclical defrost	Manual
Refrigerant		HC refrigerant	
Insulation		PUF	
Construction			
Exterior material		Painted Steel	
Interior material		ABS Resin	Painted Steel
Outer doors	qty	4 (glass window [2(FH)/0(FSH)])	
Outer door lock		Y	Y
Shelves	qty	Tempered glass (3)	Coated steel wires (2)
Max. load - per shelf	kg	25	15
Access port	qty	R (1) / F (1)	
Access port position		Back	
Access port diameter	Ø mm	30	
Casters	qty	4	
Interior light		LED	
Alarms		**(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm, M = Message)**	
Power failure [3]		R [3]	
High temperature		V-B-M-R	
Low temperature		V-B-M-R	
Door open		V-B-M	
Electrical and Noise Level			
Power supply	V	PE: 220/230/240 V, 50 Hz / PA: 115 V, 60 Hz / PK: 220 V, 60 Hz	
Noise level [4]	dB (A)	41	
Options			
Temperature recorders		–	–
Temperature chart recorders		MTR-0621LH-PE/PA	–
- Chart paper		RP-06-PW	–
- Recorder housing		MPR-S30-PW	–
Circular type chart recorders		MTR-G3504C-PE/MTR-G3504A-PA	
- Chart paper		RP-G3504-PW	
- Ink pen		PG-RB-PW	
- Recorder housing		MPR-S7-PW [5]	–
Continuous strip type chart recorder		–	MTR-4015LH-PE/PA
- Chart paper		–	RP-40-PW
- Recorder housing		–	MPR-S30-PW
Battery kit for power failure alarm		MPR-48B2-PW	
Containers inside freezer		–	MPR-45FSC-PW
Blackout panel		MPR-45BP-PW	–
Optional Communication Systems			
Digital interface (RS232C/RS485) [6]		MTR-480-PW	
Ethernet interface (LAN) [6]		MTR-L03-PW	

PUF = Rigid polyurethane foamed insulation

[1] Exterior dimensions of main cabinet only, excluding external projections - See dimensions drawings on website for full details.
[2] Air temperature measured at refrigeration compartment centre and freezer compartment centre, ambient temperature +30ºC, no load.
[3] Remote alarm includes optional power failure alarm MPR-48B2-PW (B-R alarm).
[4] Nominal value - Background noise 20dB (A)

[5] When installing temperature recorder MTR-G3504A, optional mounting hardware is necessary.
[6] 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.

CE (220/230/240 V, 50 Hz)

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