



LPR-400

LPR Laboratory Refrigerator

+4°C to +14°C

400 L

Refrigerators that are designed for storage of pharmaceuticals, samples and reagents with user-friendly features.

The combination of temperature control accuracy, interior temperature uniformity, quick recovery and resistance to high ambient temperature delivers a quality storage refrigerator that characterizes our commitment to engineering, storage safety and reliability.

Temperature uniformity

Forced air circulation technology ensures a uniform temperature throughout the chamber and quick temperature recovery even with frequent door openings. A thermistor sensor detects and maintains temperature in the chamber at set point.

Sample safety and protection

Visual and audible alarms alert users when the temperature falls outside the safe range, so prompt action can be taken to protect precious samples. The door is equipped with a cylinder lock to restrict access.

Condensation prevention

Glass door heater prevents dew condensation without affecting the samples stored in the chamber. The heater can be easily operated with an ON/OFF switch located to the right of the control panel.

Stable Temperature



Microprocessor controller simplifies operation

The digital display shows actual temperature in the chamber and the intuitive touch pad makes operation simple.



Intuitive design

The self-closing double glass door offers better visibility of stored items and provides complete isolation from the outside. The control panel is located above the glass door. An access port in the back allows sensors, probes and other equipment to be connected.



Flexible storage options

The height of the shelves can be adjusted to accommodate storage items of various sizes. This flexibility allows different storage needs to be met.

LPR Laboratory Refrigerator



LPR-400

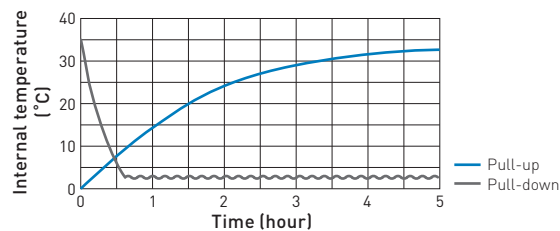
Timer-Controlled Off-Cycle Defrosting

Reducing labour and time for removing frost, defrosting starts automatically when the accumulated compressor operation time reaches the threshold. During defrosting, the refrigerator will display the "dF" indication and the in-chamber temperature alternatively on the control panel*.

* Auto-defrost is activated and repeated in 3-hour cycles, which may temporarily cause an in-chamber temperature to rise up to a maximum of 15°C.

Performance Data*

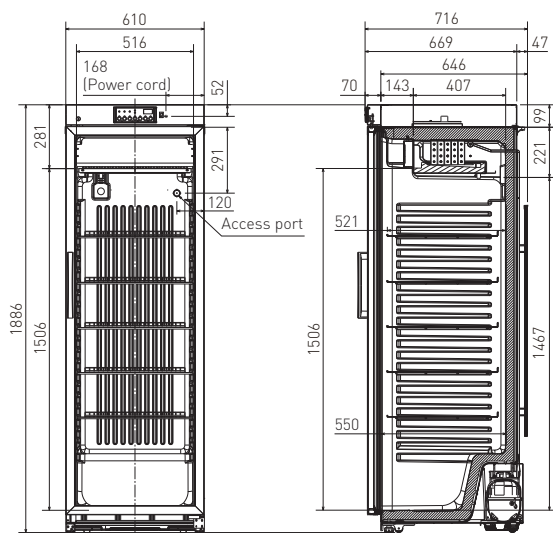
AT35°C Pull-down & Pull-up Temperature³⁾



The graph does not show temporary temperature increases during auto defrosting.

Dimensions

Unit: mm



Model Number		LPR-400-PE
External dimensions [W x D x H] ¹⁾	mm	610 x 716 x 1886
Internal dimensions [W x D x H]	mm	516 x 550 x 1467
Volume	litres	400
Net weight	kg	81
Performance		
Temperature control range		+4°C to +14°C ²⁾
Control		
Controller		Microprocessor with non-volatile memory
Temperature display		Digital
Temperature sensor		Thermistor
Refrigeration		
Cooling method		Forced cool air circulation
Defrost method		Timer Cycle defrost
Refrigerant		HFC (CFC-Free)
Insulation		Rigid polyurethane foamed-in place
Construction		
Exterior material		Colored steel
Interior material		Vacuum molding (ABS resin)
Outer doors	qty	1 (Plastic sash with 2-layer glass window)
Outer door lock		1 (Cylinder key lock)
Shelves	qty	5 (polyethylene-coated wire, W500 x D465 mm, adjustable)
Max. load - per shelf / drawer	kg	30
Access port	qty	1
Access port position		Back
Access port diameter	Ø mm	30
Casters	qty	4 (2 levelling feet)
Accessories		
Key	set	x 1
Alarms		
(V = Visual Alarm, B = Buzzer Alarm)		
High temperature		V-B
Low temperature		V-B
Electrical and Noise Level		
Power supply		230 V, 50 Hz
Rated power consumption	W	327
Noise level ⁴⁾	dB (A)	48

¹⁾ External dimensions of main cabinet only, excluding external projections - See dimensions drawings on website for full details

²⁾ Air temperature measured at refrigeration compartment centre with no load and ambient temperature of +10°C to +35°C.

³⁾ Air temperature measured at refrigeration compartment centre at no load and ambient temperature of +35°C.

⁴⁾ Nominal value - Background noise 20 dB (A)

• 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.

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MPR Pharmaceutical Refrigerators with Natural Refrigerants

+2°C to +14°C



165 L / 345 L

Uniform storage temperature for the most demanding applications

MPR Pharmaceutical Refrigerators offer a complete solution for the most demanding requirements for storage of pharmaceuticals, medicines, vaccines, and other temperature-sensitive applications.

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 time following door openings.

OLED Control Panel

The microprocessor controller and OLED display have good visibility and intuitive operation. Control buttons allow convenient but secure user control. Refrigerator temperature can be displayed in 0.1°C increments. Minimum/maximum temperatures are automatically displayed every 12/24 hours. All alarm conditions are displayed and recorded.

User-friendly Design

The ergonomic design of the MPR Pharmaceutical Refrigerators provides a clear view of stored items through the large glass door. The slim, hassle-free sliding glass door allows for easy retrieval of products, without the concern for swinging door clearance. Users can prevent unauthorized access by utilizing the keylock on the door.



Energy-efficient 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 time following door openings.



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. If desired, alarm and operating history can be uploaded through the USB port.



Enhanced sliding glass door

The sliding glass door is meticulously designed to increase energy efficiency and safeguards stored items against heat transfer through the window. The thermal glass door is constructed from a double glass pane where argon gas is used to fill the 12 mm gap. Together with the air vents near the sliding glass door rail, it prevents the formation of moisture.

Pharmaceutical Refrigerators with Natural Refrigerants

Defrost Methods

Both models feature automatic defrost which activates electronically when needed. The refrigerator evaporator operates above freezing at all times. This prevents vaccines and lab supplies from freezing.

LED Interior Light

The LED interior light automatically turns on/off in conjunction with the door opening/closing. It can also be controlled from the control panel.



Available options



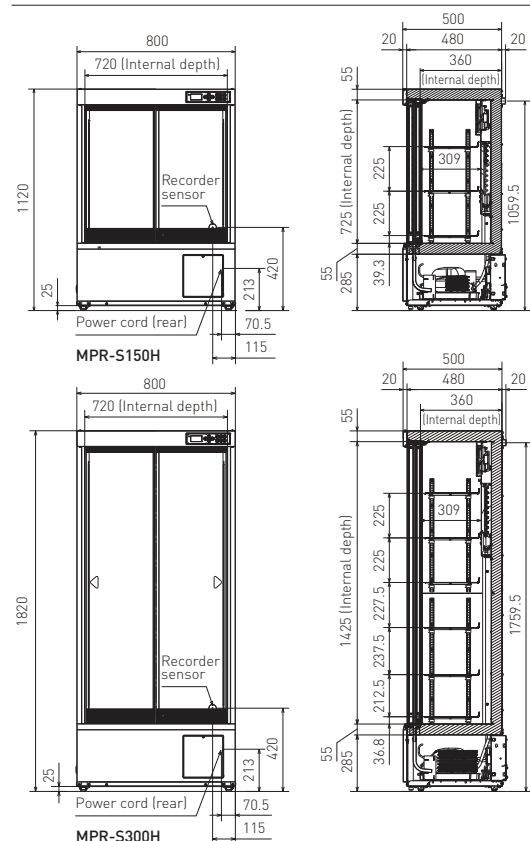
MPR-31RR
Wire shelves (left), Sliding racks (right)



MPR-150GH
Shading glass door

Dimensions

Unit : mm



(220/230/240 V, 50 Hz)



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.
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

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Model Number		MPR-S150H-PE MPR-S150H-PK	MPR-S300H-PE MPR-S300H-PK	MPR-S300H-PA
External dimensions (W x D x H) ¹⁾	mm	800 x 500 x 1120	800 x 500 x 1820	
Internal dimensions (W x D x H)	mm	720 x 360 x 725	720 x 360 x 1425	
Volume	litres	165	345	
Net weight	kg	73	105	104
Performance				
Temperature control range ²⁾	°C	2 to 14		
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		
Defrost method		Cyclical defrost + forced defrost		
Refrigerant		HC refrigerant		
Insulation		PUF (Rigid polyurethane foamed insulation)		
Construction				
Exterior material		Painted Steel		
Interior material		Painted Steel		
Outer doors	qty	2 (Highly insulated double glass door with tempered glass)		
Outer door lock		Y		
Shelves	qty	3 coated steel wires	6 coated steel wires	
Dimensions	mm	W697 x D270		
Max. load - per shelf	kg	20		
Access port	qty	1		
Access port position		Back		
Access port diameter	Ø mm	30		
Casters	qty	4 [2 levelling feet]		
Interior light		LED		
Accessories				
Key	set	x 1		
Alarms (V = Visual Alarm, B = Buzzer Alarm, M = Message, R = Remote Alarm)				
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 / Hz	PE: 220, 230, 240/50 PK: 220/60		115/60
Noise level ⁴⁾	dB [A]	38		
Options				
Temperature chart recorders		MTR-0621LH-PE		MTR-0621LH-PA
- Chart paper		RP-06-PW		
- Recorder housing		MPR-S30-PW		
Circular type chart recorders		MTR-G04C-PE		MTR-G04A-PA
- Chart paper		RP-G04-PW		
- Ink pen		PG-R-PW		
- Recorder housing		MPR-S7-PW		
Battery kit for power failure alarm		MPR-48B2-PW		
Shading glass door		MPR-150GH for MPR-S150H, MPR-300GH for MPR-S300H		
Shelves & Sliding racks		—	MPR-31RR-PW (for lower right side) MPR-31LR-PW (for lower left side) ⁵⁾	
Optional Communication Systems				
Digital interface [RS232C/RS485] ⁶⁾		MTR-480-PW		
Ethernet interface [LAN] ⁶⁾		MTR-L03-PW		
Quality Management System				
Certification		ISO9001		

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 +35°C, no load.

³⁾ Remote alarm includes optional power failure alarm MPR-48B2-PW (V-B-M-R alarm).

⁴⁾ Nominal value - Background noise 20dB [A]

⁵⁾ Must be used in combination with MPR-31RR.

⁶⁾ Only for MTR-5000 (data acquisition system) users.
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MPR-N250FH

MPR-N250FSH

MPR Natural Refrigerant Pharmaceutical Refrigerators with Freezer

+2°C to +14°C Refrigerators

-30°C to -20°C Freezers



259 L (R: 179 L / F: 80 L)

Providing a complete storage solution — refrigerator and freezer in one unit. The MPR-N250FH/MPR-N250FSH 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



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

Temperature uniformity is maintained at all storage levels even at full load conditions. This provides even, horizontal airflow across the solid adjustable glass shelves at each shelf level to assure optimum temperature uniformity under full load conditions.



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.

Pharmaceutical Refrigerators with Freezer

With the new platform, the volume of the freezer (-30°C) has increased to 80 L, which is about 105%* 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-215F.

Ease of Use



Removable glass shelves inside the refrigerator compartment enable easy cleaning. The solid shelf construction allows bottles and vials to be securely positioned. Clear visibility inside the refrigerator compartment is provided by an LED light. Optional containers for the freezer compartment are available for flexible storage solutions.

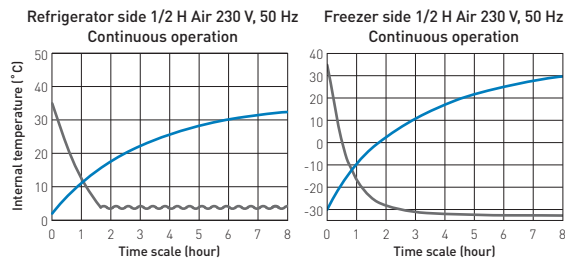
Defrost Methods

The MPR-N250FH/MPR-N250FSH 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

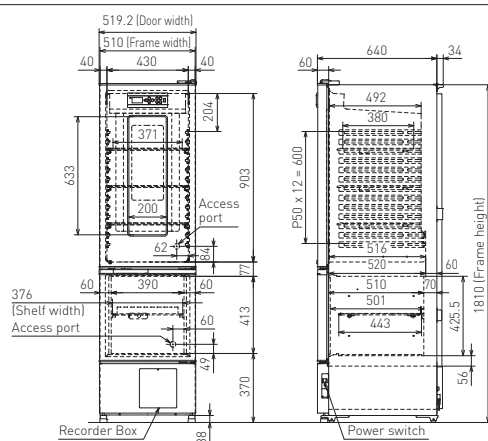
Pull-down & Pull-up Temperature (No load)
AT35°C (Refrigerator/Freezer)

— Pull-down
— Pull-up



Dimensions

Unit: mm



Model Number		MPR-N250FH-PE / MPR-N250FSH-PE	
		MPR-N250FH-PK / MPR-N250FSH-PK	
		MPR-N250FH-PA / MPR-N250FSH-PA	
Dimensions		Refrigerator	Freezer
External dimensions (W x D x H) ¹⁾	mm	510 x 640 x 1810	
Internal dimensions (W x D x H)	mm	430 x 516 x 903	390 x 501 x 413
Volume	litres	179	80
Net weight	kg	95 (FH) / 91 (FSH)	
Performance			
Temperature control range ²⁾	°C	2 to 14	-30 to -20
Control			
Controller		Microprocessor with non-volatile memory	
Display		Digital (White graphic Organic LED), 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		Cyclopentane foamed polyurethane	
Construction			
Exterior material		Painted steel (PCM)	
Interior material		ABS Resin	Painted Steel
Outer doors	qty	2 (glass window [1 (FH) / 0 (FSH)])	
Outer door lock		Cylinder lock x1	
Shelves		Tempered glass [3]	Coated steel wires [1]
Max. load - per shelf	kg	20	10
Access port	qty	1	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 (V-B optional)	
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 / PK: 220 V, 60 Hz / PA: 115 V, 60 Hz	
Noise level ⁴⁾	dB [A]	40	
Options			
Temperature recorders	Continuous strip type	MTR-0621LH-PE/PA	—
	- Chart paper	RP-06-PW	—
	- Recorder housing	MPR-S30W-PW	—
	Circular type	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	—	MTR-4015LH-PE/PA	
- Chart paper	—	RP-40-PW	
- Recorder housing	—	MPR-S30W-PW	
Battery kit for power failure alarm		MPR-48B2-PW ⁶⁾	
Optional Communication Systems			
Digital interface (RS232C/RS485) ⁷⁾		MTR-480-PW	
Ethernet interface (LAN) ⁷⁾		MTR-L03-PW	

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 +30°C, 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⁾ Requires optional battery kit for power failure alarm MPR-48B2-PW

⁷⁾ Only for MTR-5000 (data acquisition system) users.

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Pharmaceutical Refrigerator with Freezer | MPR-N450FH/FSH

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.

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.

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 memory port.

Model Number		MPR-N450FH-PE / MPR-N450FSH-PE / MPR-N450FH-PA / MPR-N450FSH-PA MPR-N450FH-PK / MPR-N450FSH-PK	
		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	-30 to -20
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 (Rigid polyurethane foamed insulation)	
Construction			
Exterior material		Colored Steel	
Interior material		ABS Resin	Painted Steel
Outer doors	qty	4 (glass window [2 (FH) / 0 (FSH)])	
Outer door lock		Yes	
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 [2 leveling feet]	
Interior light		LED	-
Alarms [V = Visual Alarm, B = Buzzer Alarm, M = Message, R = Remote Alarm]			
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: 220/230/240V, 50Hz / PA: 115V, 60Hz / PK: 220V, 60Hz	
Power Consumption (230V/50Hz) SV: 5°C / -30°C	kWh/day	AT23°C: 3.97 AT32°C: 4.76	
Noise level ⁴⁾	dB [A]	41	
Options			
Temperature recorders	Continuous strip type	MTR-0621LH-PE/PA	-
	- Chart paper	RP-06-PW	-
	- Recorder housing	MPR-S30W-PW	-
	Circular type	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	-	MTR-4015LH-PE/PA
	- Chart paper	-	RP-40-PW
	- Recorder housing	-	MPR-S30W-PW
Battery kit for power failure alarm		MPR-48B2-PW	
Containers inside freezer		-	MPR-45FSC-PW
Blackout panel		MPR-45BP-PW	-
Additional shelf kit for freezer		MPR-450ST-PW	
Optional Communication Systems			
Digital interface (RS232C/RS485) ⁶⁾		MTR-480-PW	
Ethernet interface (LAN) ⁶⁾		MTR-L03-PW	

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 +35°C, no load.

³⁾ Remote alarm includes optional power failure alarm MPR-48B2-PW (V-B-M-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.

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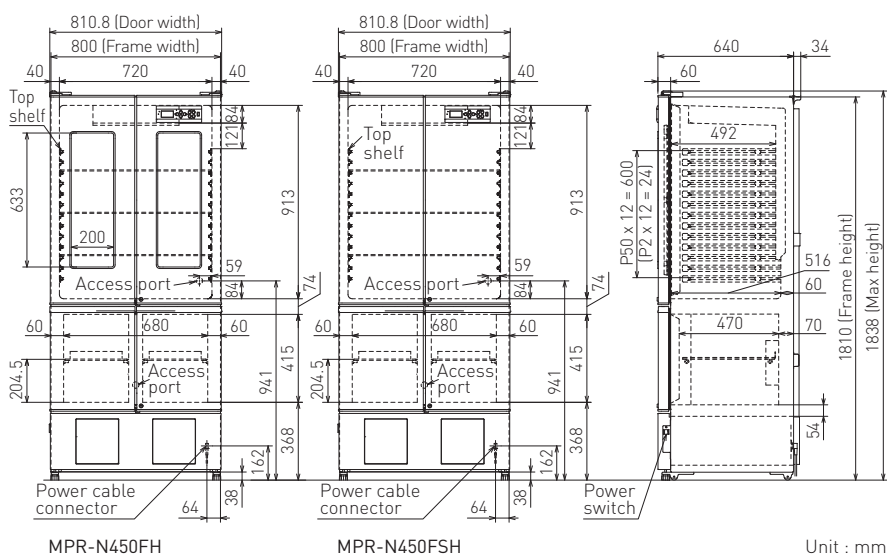
MPR-N450FH



MPR-N450FSH

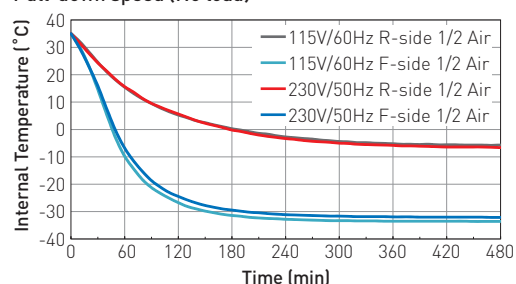


Dimensions

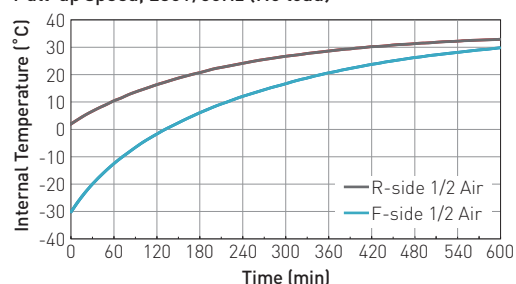


Performance Data

AT35°C Pull-down Temperature /
Pull-down speed (No load)

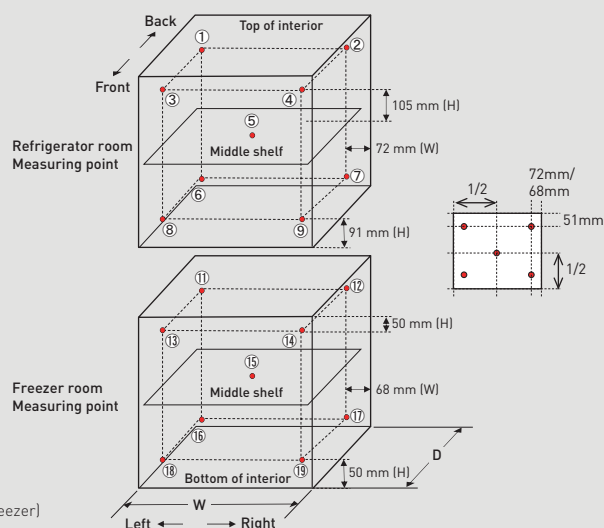
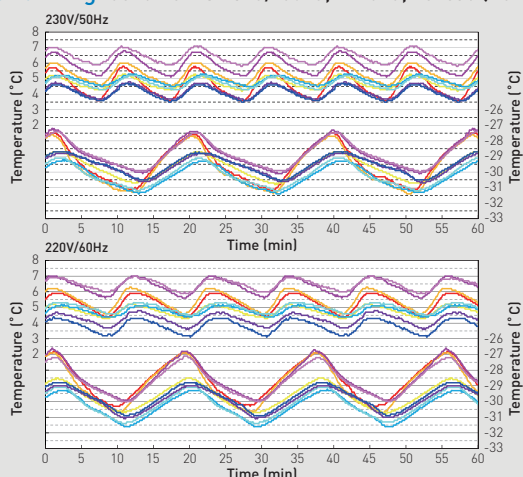


AT35°C Pull-up Temperature /
Pull-up speed, 230V/50Hz (No load)



Cycle running Condition: SV 5°C/-30°C, AT23°C, no load (Refrigerator/Freezer)

Temperature uniformity - 19 points measuring



Internal Temperature Uniformity (Reference Data)

Distribution data Temperature of the cycle in each area (SV: 5°C/-30°C, air temperature) (Refrigerator/Freezer)

Ambient temperature 23°C 230V/50Hz No Load

Refrigerator									
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Maximum	5.8	6.0	6.8	7.1	5.3	5.3	5.2	4.8	4.7
Minimum	3.6	4.5	5.1	5.8	4.2	4.5	4.3	3.6	3.5
Middle of cycle	4.6	5.3	5.9	6.4	4.7	4.9	4.7	4.2	4.1

Ambient temperature 23°C 220V/60Hz No Load

Refrigerator									
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Maximum	5.9	6.3	7.0	7.0	5.2	5.2	5.3	4.8	4.4
Minimum	4.4	4.6	5.6	5.9	4.3	4.4	4.5	3.6	3.1
Middle of cycle	5.2	5.5	6.3	6.5	4.8	4.8	5.0	4.2	3.8

Freezer									
	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	Average
Maximum	-27.5	-27.6	-27.2	-27.4	-28.7	-29.2	-29.1	-28.8	-28.7
Minimum	-31.2	-31.3	-30.1	-29.9	-30.7	-31.4	-31.2	-30.6	-30.5
Middle of cycle	-29.5	-29.8	-28.8	-28.8	-29.7	-30.3	-30.2	-29.5	-29.6

Freezer									
	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	Average
Maximum	-26.8	-26.9	-26.6	-27.1	-28.5	-29.3	-29.1	-29.0	-28.8
Minimum	-30.3	-30.7	-30.0	-30.0	-30.7	-31.6	-31.4	-31.1	-30.9
Middle of cycle	-28.8	-29.0	-28.6	-28.8	-29.7	-30.4	-30.3	-29.9	-29.8

[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.



MPR-S500H

MPR-S500RH

MPR Pharmaceutical Refrigerators with Natural Refrigerants

+2°C to +14°C



554 L (H) / 550 L (RH)

Uniform storage temperature for the most demanding applications

MPR Pharmaceutical Refrigerators offer a complete solution for the most demanding requirements for storage of pharmaceuticals, medicines, vaccines, and other temperature-sensitive applications.

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 time following door openings.

OLED Control Panel

The microprocessor controller and OLED display have good visibility and intuitive operation. Control buttons allow convenient but secure user control. Refrigerator temperature can be displayed in 0.1°C increments. Minimum/maximum temperatures are automatically displayed every 12/24 hours. All alarm conditions are displayed and recorded.

User-friendly Design

The ergonomic design of the MPR Pharmaceutical Refrigerators provides a clear view of stored items through the large glass door. The slim, hassle-free sliding glass door allows for easy retrieval of products, without the concern for swinging door clearance. Users can prevent unauthorized access by utilizing the keylock on the door.



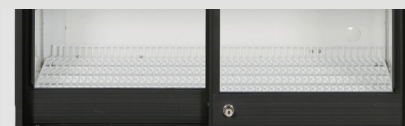
Energy-efficient performance

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 time following door openings.



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. If desired, alarm and operating history can be uploaded through the USB port.



Enhanced sliding glass door

The sliding glass door is meticulously designed to increase energy efficiency and safeguards stored items against heat transfer through the window. The thermal glass door is constructed from a double glass pane where argon gas is used to fill the 12 mm gap. Together with the air vents near the sliding glass door rail, it prevents the formation of moisture.

Pharmaceutical Refrigerators with Natural Refrigerants

Shelves & Racks

The lineup consists of MPR-S500H equipped with regular shelves on both sides, and MPR-S500RH with racks on the right side (shelves on the left side).



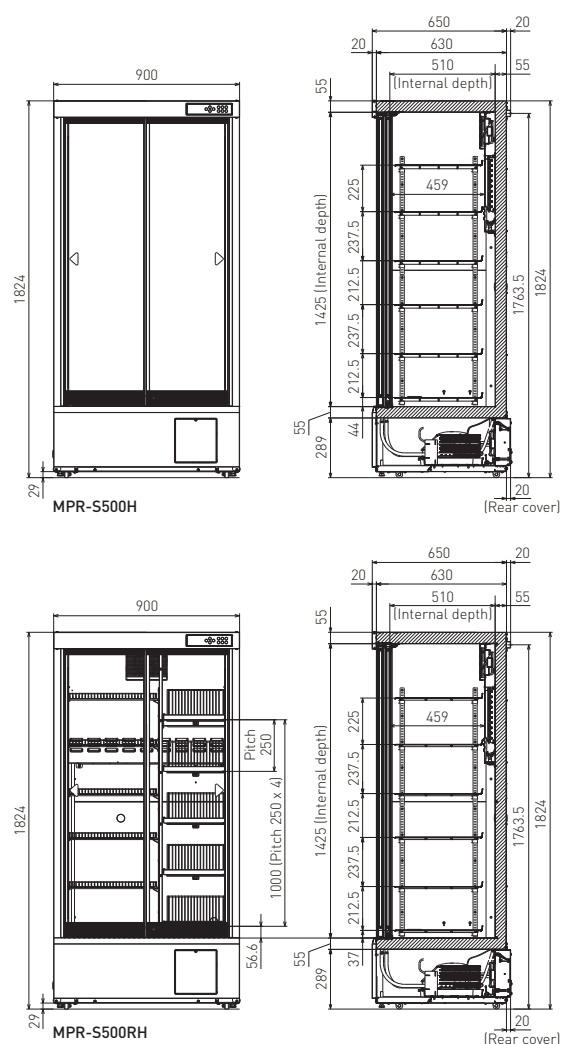
LED Interior Light

The LED interior light automatically turns on/off in conjunction with the door opening/closing. It can also be controlled from the control panel.



Dimensions

Unit : mm



Model Number	MPR-S500H-PE/MPR-S500H-PK MPR-S500H-PA	MPR-S500RH-PE/MPR-S500RH-PK MPR-S500RH-PA
External dimensions (W x D x H) ¹⁾	mm	900 x 650 x 1824
Internal dimensions (W x D x H)	mm	800 x 510 x 1425
Volume	litres	554
Net weight	kg	140 [PE] / 140 [PK] / 139 [PA]
		146 [PE] / 146 [PK] / 145 [PA]
Performance		
Temperature control range ²⁾	°C	+2 to +14
Control		
Controller		Microcomputer control system
Display		Digital display (in 1°C, 0.1°C increments)
Temperature sensor		Thermistor sensor
Refrigeration		
Cooling method		Forced cool air circulation
Defrost method		Cyclical defrost + forced defrost
Refrigerant		R-600a
Insulation		Rigid polyurethane foamed-in place
Construction		
Exterior material		Painted Steel
Interior material		Painted Steel
Outer doors	qty	x2 (Highly insulated double glass door with tempered glass)
Outer door lock		Y
Shelves	qty	x6 (Hard steel wire on polyethylene coating)
Dimensions	mm	W781 x D420
Max. load - per shelf	kg	50
Access port	qty	2
Access port position		Back
Access port diameter	Ø mm	30
Casters	qty	x4
Interior light		LED x12
Accessories		
Key	qty	x2
Alarms (V = Visual Alarm, B = Buzzer Alarm, M = Message, R = Remote Alarm)		
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 / Hz	PE: 220, 230, 240/50 PK: 220/60 PA: 115/60
Noise level ⁴⁾	dB (A)	42
Options		
Temperature chart recorders		PE & PK: MTR-0621LH-PE PA: MTR-0621LH-PA
- Chart paper		RP-06-PW
- Recorder housing		MPR-S30W-PW
Circular type chart recorders		PE & PK: MTR-G04C-PE, PA: MTR-G04A-PA
- Chart paper		RP-G04-PW
- Ink pen		PG-R-PW
- Recorder housing		MPR-S7-PW
Battery kit for power failure alarm		MPR-48B2-PW
Name card holder		MPR-50CH-PW MPR-50RCH-PW
Optional Communication Systems		
Digital interface (RS232C/RS485) ⁵⁾		MTR-480-PW
Ethernet interface (LAN) ⁵⁾		MTR-L03-PW
Quality Management System		
Certification		ISO9001

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 center, ambient temperature +35°C, no load.

³⁾ Remote alarm includes optional power failure alarm MPR-48B2-PW (V-B-M-R alarm).

⁴⁾ Nominal value - Background noise 20dB (A)

⁵⁾ 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.
PHC Corporation, Biomedical Division
1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma 370-0596, Japan



PHC Corporation
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certified for:
**Environmental
management system:
ISO14001**

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Printed in Japan 2112-2021-06-AA

Specifications

	Pharmaceutical Refrigerators			
	Model No.		Model No.	
220 V, 50 Hz	MPR-1411-PB	MPR-1411R-PB	MPR-721-PB	MPR-721R-PB
220 V, 60 Hz	MPR-1411-PK	MPR-1411R-PK	MPR-721-PK	MPR-721R-PK
	MPR-1411-PR	MPR-1411R-PR	MPR-721-PR	MPR-721R-PR
230 V/240 V, 50 Hz (CE)	MPR-1411-PE	MPR-1411R-PE	MPR-721-PE	MPR-721R-PE
External dimensions (W x D x H)*1	1440 x 830 x 1950 (mm) / 56.7 x 32.7 x 76.8 (inch)		770 x 830 x 1955 (mm) / 30.3 x 32.7 x 77.0 (inch)	
Internal dimensions (W x D x H)	1320 x 710 x 1500 (mm) / 52.0 x 28.0 x 59.1 (inch)		650 x 710 x 1500 (mm) / 25.6 x 28.0 x 59.1 (inch)	
Effective capacity	1364 liters [48.2 cu.ft.]	1359 liters [48.0 cu.ft.]	684 liters [24.2 cu.ft.]	671 liters [23.7 cu.ft.]
Exterior	Galvanised steel with baked-on finish			
Interior	Galvanised steel with baked-on finish			
Doors	2 x double pane glass doors, self closing		1 x double pane glass doors, self closing	
Insulation	HCFC-free rigid foamed-in-place polyurethane			
Shelves/Drawers	8 x polyethylene-coated wire shelves. Max. load: 50 kg/shelf	10 x coated steel drawers. Handles with card holder. Max. load: 40 kg/drawer	4 x polyethylene-coated wire shelves. Max. load: 50 kg/shelf	5 x coated steel drawers. Handles with card holder. Max. load: 40 kg/drawer
Access ports	3 locations, 30mm diameter [both sides, cabinet top]			
Lock	2 x cylinder lock		1 x cylinder lock	
Casters	4 pcs			
Cooling method	Forced air circulation with double fan		Forced air circulation with single fan	
Compressor	250 W, hermetic reciprocating type		200 W, hermetic reciprocating type	
Evaporator	Fin tube type			
Condenser	Fin tube type		Wire tube type	
Refrigerant	R-404A (HFC)		R-134a (HFC)	
Defrost method	Forced type (cycle defrost system), fully automatic hot pipe for automatical evaporation for drain water			
Defrost heater	257 W		153 W	
Temperature control	Microprocessor controlled on/off type. Thermistor sensor Temp. control range: 2°C to 14°C [ambient temp. -5°C to 0°C no-load] 2°C to 23°C [ambient temp. 0°C to 35°C no-load] [1°C step]			
Safety features	High/low temp. protection circuit, remote alarm contact, temperature lock, part replacement notification, self diagnostics, memory backup [nonvolatile memory].			
High temp. alarm	Flashing LED & buzzer after 15 minutes [MPR-721/721R] or 0 to 15 minutes [MPR-1411/1411R] delay			
Low temp. alarm	Flashing LED & buzzer after 15 minutes [MPR-721/721R] or 0 to 15 minutes [MPR-1411/1411R] delay			
Door ajar alarm	Flashing lamp, buzzer after 0 to 15 minutes delay			
Interior lamp	40 W x 1, fluorescent lamp		20 W x 1, fluorescent lamp	
Net weight	248 kg [546.7 lbs.]	287 kg [632.7 lbs.]	174 kg [383.6 lbs.]	193 kg [425.5 lbs.]

Alarm and safety features

Features	Trigger	Type of alarm/response
High temperature alarm	2°C to 14°C (selectable) above setpoint	Flashing LED & buzzer
Low temperature alarm	2°C to 14°C (selectable) below setpoint; 0°C or lower	Flashing LED & buzzer
Over heating protection	Interior temperature rises to 40°C	Fan motor & heater OFF
Over cooling protection	Interior temperature lowers to 1°C	Compressor OFF
Tamper proof	Tamper proof key lock ON	Set temperature cannot be altered
Memory backup	Power failure	Memory of settings
Door ajar	Door not closed	Door ajar lamp ON & buzzer
Self diagnostics	Sensor open or short	Error code shown (E01, E02)
Remote terminal	Operation can be checked from office or control room away from the lab	
Temperature recorder	Optional	

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.

•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.

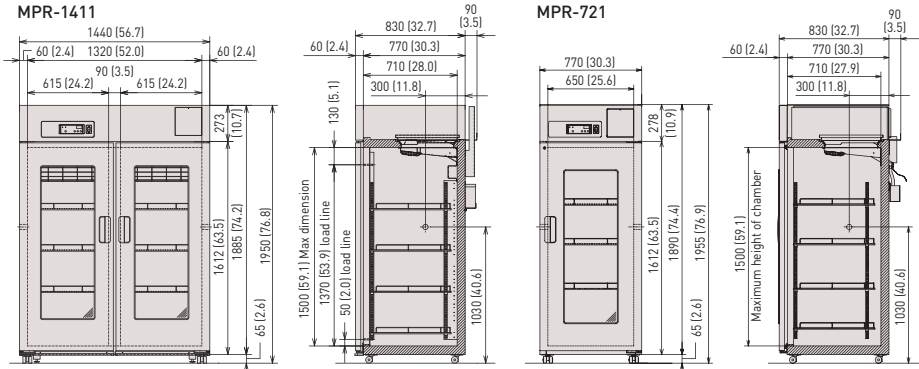
Options


Automatic Temperature Recorder
MTR-G04C-PE
1-day/7-day/32-day Circular Chart Recorder
Recording range: -10°C to +40°C
Recording paper: RP-G04-PW
Recording pen: PG-R-PW
Recorder mounting kit: MPR-S7-PW

Automatic Temperature Recorder **MTR-0621LH-PE**
32-day Strip Chart Recorder
Recording range: -6°C to +20°C
Recording paper: RP-06-PW
Recorder mounting kit: MPR-S30-PW

Battery Installation Box for Power Failure Alarm
MPR-48B1-PW
Data acquisition system
Ethernet (LAN) Interface board: MTR-L03-PW
RS232C/RS485 Interface board: MTR-480-PW
(For the data acquisition system MTR-5000 user only.)
Mounting bracket: MPR-48B1-PW

Dimensions






Preservation (freezers, refrigerators) and Culturing (incubators) Equipment

The management of the design, development, production, sales support, and servicing 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

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Large Capacity
Pharmaceutical Refrigerators
MPR-1411/MPR-1411R
MPR-721/MPR-721R



Preservation above-zero

Pharmaceutical Refrigerators

Stable and reliable refrigerated environment for
exacting laboratory requirements



PHC Corporation, Biomedical Division

Life Science
Innovator
Since 1966

Stable temperature environment for clinical, research, pharmaceutical and industrial use.

Large Capacity Pharmaceutical Refrigerators

Environmental Laboratory
Wide temperature range

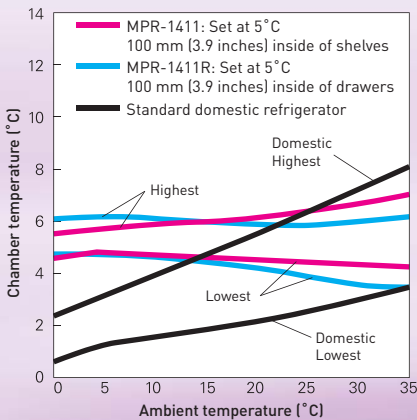
2°C to 23°C (ambient temperature 0°C to 35°C)

Temperature stability

PHCbi's temperature control system with thermistor monitor and microprocessor control reliably maintains cabinet temperature at the set level and is unaffected by ambient temperature. Forced air circulation ensures that the cabinet temperature returns to the set point immediately after door openings and remains uniform throughout the cabinet.

Relationship between chamber temperature and ambient temperature

(Comparison with standard domestic refrigerators)



Adjustable shelves and wide range setpoint for varying laboratory applications including chromatography and pharmaceutical storage.

MPR-1411



Effective capacity **1,364 liters (48.2 cu.ft.)**

Speedy & powerful refrigeration

To cope with frequent door openings, Pharmaceutical Refrigerators are equipped with powerful, hermetically sealed compressors. These purpose-built compressors ensure superior pull-down characteristics and precise temperature control.

Easy-to-manage layout

The interior layout flexibility of Pharmaceutical Refrigerators makes them ideal for running experiments that require stable, cool conditions, as well as storage.

Standard alarm & safety features

Pharmaceutical Refrigerators are fitted with buzzers and flashing lights to warn of high and low temperature problems. In the event of an irregular rise in cabinet temperature, the heater automatically shuts off and forced air circulation brings the temperature down. Door locks are fitted to safeguard valuable contents.

Wide temperature range

With a temperature range of 2°C to 23°C, Pharmaceutical Refrigerators are ideally suited for tests that require a stable, cool temperature.

Large capacity

With a modular width of 770 mm (30.3 inches) the MPR-721 offers capacity of 684 liters [24.2 cu.ft.]. [MPR-721R: 671 liters [23.7 cu.ft.]], while the 1440 mm (56.7 inches)-wide MPR-1411 offers capacity of 1364 liters (48.2 cu.ft.) [MPR-1411R: 1359 liters (48.0 cu.ft.)]. The interior is spacious enough to accommodate column chromatography apparatus or large volumes of pharmaceuticals, samples and reagents.

Large fans

The 120 mm-diameter fan ensures an even temperature throughout the cabinet (MPR-1411/R models have a double flow system with two fans). Heat spots from powered test apparatus are minimized and pull-up characteristics after door openings are outstanding.



HFC refrigerant & HCFC-free insulation

PHCbi biomedical equipment is designed for low environmental impact. The MPR-721 and MPR-1411 series use HFC refrigerant and the foamed-in-place insulation is HCFC free.

Cycle defrost

In the 5°C range, frost buildup on the evaporator is inevitable. This can affect the performance of the heat exchanger. PHCbi has solved this problem with a cycle defrost and evaporator temperature sensor system. This system runs automatically, so there is no need to turn off the power for defrosting. Temperature rise during defrost is minimal. The evaporation heater also doubles as protection against drops in cabinet temperature caused by a low ambient temperature.

Filterless design (MPR-721/MPR-721R)

The filterless condenser cuts down on cleaning maintenance.

Protective glass doors

All glass doors include a protective film to prevent shattering in the event of accidental collisions.

User-friendly design and double function door

Easy to read and operate control panel featuring a full array of alarm and safety functions. Thru wall access ports are standard to allow access for power cords. Aesthetically attractive exterior color blends well in most lab color schemes. The "catch-free" rounded corners are safe attractive. Doors open smooth-ly and close automatically. Some laboratory refrigerators have solid doors for temperature stability, while others have glass doors for easy viewing. PHCbi Pharmaceutical Refrigerators give you the best of both versions. The broad, solid frames with effective gaskets ensure excellent temperature stability, and the double-pane glass windows offer an excellent view of the interior without compromising temperature stability.

Adjustable shelves (MPR-721/MPR-1411)

The shelves can be arranged to accommodate tall apparatus such as fraction collectors. These shelves are deep enough [620 mm (24.4 inches) front to back] and strong enough (50 kg load for the MPR-721, 40 kg for the MPR-1411) to hold most apparatus.

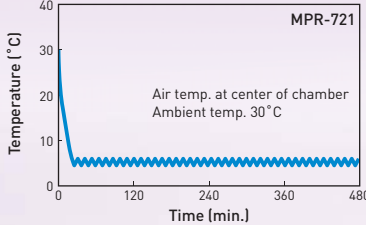
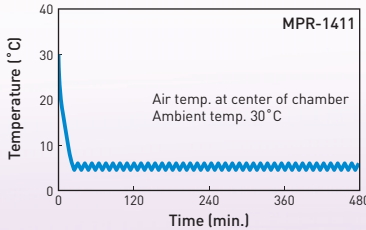
Drawer type (MPR-721R/MPR-1411R)

The "R" models are fitted with pull-out drawers. With a profile of 100mm (3.9 inches) and 530 mm (20.8 inches) front to back, these drawers are deep enough to hold large bottles or reagent kits. They also allow convenient, space-efficient storage and management of patient medications and other items.

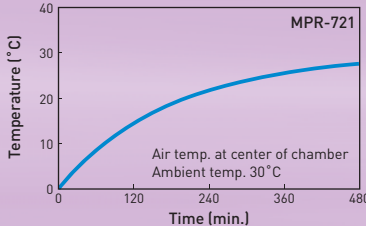
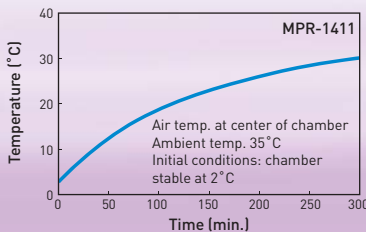
The MPR-721R is shipped with five drawers, while the MPR-1411R is shipped with ten drawers, five in each half of the cabinet.

Performance data (Reference Data)

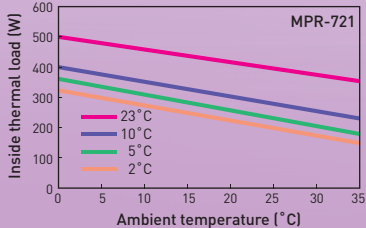
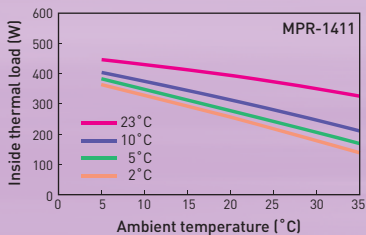
Pull-down characteristics (no-load)



Pull-up characteristics (no-load)



Test of permissible inside thermal load



Drawers for convenient storage

MPR-1411R



Effective capacity **1,359 liters (48.0 cu.ft.)**

Movable wire shelves for test apparatus and storage flexibility

MPR-721



Effective capacity **684 liters (24.2 cu.ft.)**

Pull-out drawers for convenient filing of storage items

MPR-721R



Effective capacity **671 liters (23.7 cu.ft.)**

MPR Natural Refrigerant Pharmaceutical Refrigerators with Freezer

+2°C to +14°C Refrigerators
-20°C to -30°C Freezers



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.

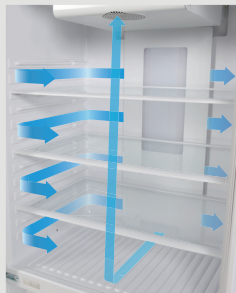
Energy-efficient performance



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.

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.

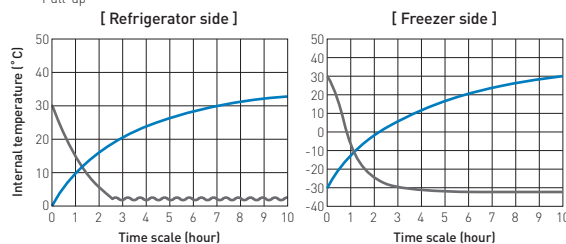
Defrost Methods

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

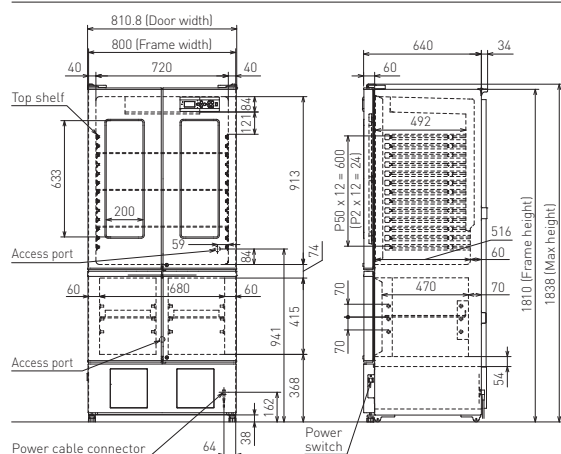
AT30°C Pull-down & Pull-up Temperature (No load)

— Pull-down [220/230/240 V, 50 Hz]
— Pull-up



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⁾ External 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 +30°C, 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.

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Printed in Japan 2109-2019-10-CC



Pharmaceutical Refrigerator with freezer

415 L (Ref) / 176 L (Frz)

Providing a complete storage solution; refrigerator and freezer in one unit.
The MPR-715F combines high-performance refrigeration with a -30°C freezing environment within a small footprint for flexible, reliable and convenient sample storage.

Optimum Temperature Distribution

Fan-forced air circulation system in the refrigerator offers better uniformity and fast recovery of temperature after routine door openings to minimise fluctuations.

Excellent Stability

A unique defrost system in the refrigerator operates only short cycles as required to prevent unnecessary temperature spikes. The freezer compartment is manually defrosted for stable temperature performance.

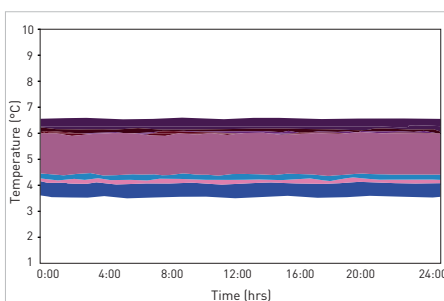
Precise Control & Monitoring

Microprocessor controller, combined with accurate sensors, maintains precise temperatures within the refrigerator and freezer, while a comprehensive alarm system alerts of any temperature deviations.



Two Temperatures, One Unit

Secure storage at both freezing and refrigerated temperatures within a minimal footprint is an ideal solution for installation in smaller spaces.



Usability with Performance

PHCbi refrigerators are designed specifically for laboratory applications, with precise performance even under demanding conditions.



Safe & Secure Storage

Multiple safety systems such as high / low temperature audible and visual alarms, remote alarm, door open alarm and keyed door locks.

Pharmaceutical Refrigerator with freezer



Optimized for Superior Usability

One unit with dual temperature zones requires minimal installation space.

Four-door design reduces air loss during door opening and makes efficient use of space in front of the unit.

PHCbi Design

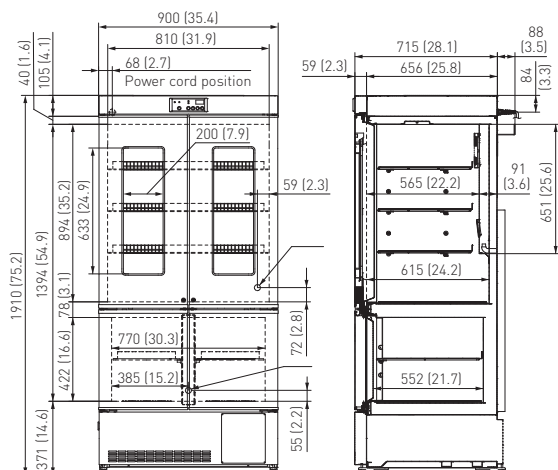
Refrigeration systems within both compartments are specially designed for demanding scientific and laboratory storage. Compressors are application specific, components are carefully matched and systems are laid out to ensure high-performance cooling with ultimate reliability.

Quiet operation

Two specially designed compressors offer quiet operation for installation in busy working environments without disruption.

Dimensions

Unit : mm (inch)



Model Number		MPR-715F-PA		MPR-715F-PE	
External dimensions (W x D x H) ¹⁾	mm	900 x 715 x 1910			
Internal dimensions (W x D x H)	mm	810 x 615 x 894 (Ref) / 770 x 552 x 422 (Frz)			
Volume	litres	415 (Ref) / 176 (Frz)			
Net weight	kg	170			
Performance					
Cooling performance ²⁾	°C	+2 / -30			
Temperature setting range	°C	+2 to +14 (Ref) / -35 to -15 (Frz)			
Temperature control range ²⁾	°C	+2 to +14 (Ref) / -30 to -20 (Frz)			
Control					
Controller		Microprocessor, non-volatile memory			
Display		LED			
Temperature sensor		Thermistor			
Refrigeration					
Cooling method		Fan forced air circulation (Ref) / Direct (Frz)			
Defrost method		Cyclical defrost (Ref) / Manual (Frz)			
Refrigerant		HFC and HFO combined			
Insulation material		PUF			
Insulation thickness	mm	40 (Ref) / 60 (Frz)			
Construction					
Exterior material		Painted Steel			
Interior material		Painted steel (Ref) / Painted steel (Frz)			
Outer door	qty	4			
Outer door lock	qty	2			
Shelves	qty	3 (Ref) / 2 (Frz)			
Max. load - per shelf	kg	25 (Ref) / 15 (Frz)			
Access port	qty	2			
Access port position		Back			
Access port diameter	Ø mm	30			
Casters		4			
Interior light		LED (Ref)			
Alarms		(V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)			
Power failure ³⁾		V-B-R			
High temperature		V-B-R			
Low temperature		V-B-R			
Door open		V-B			
Electrical and Noise Level		MPR-715F-PA		MPR-715F-PE	
Power supply	V	115		220 / 230 / 240	
Frequency	Hz	60		50	
Noise level ⁴⁾	dB (A)	43			
Options					
Temperature recorders					
- Circular type		MTR-G3504A-PA		MTR-G3504C-PE	
		- Chart paper: RP-G3504-PW - Ink pen: PG-RB-PW - Recorder housing: MPR-S7-PW			
- Continuous strip type		MTR-0621LH-PA (Ref) / MTR-4015LH-PA (Frz)		MTR-0621LH-PE (Ref) / MTR-4015LH-PE (Frz)	
		- Chart paper: RP-06-PW (Ref) / RP-40-PW (Frz) - Recorder housing: MPR-S30-PW			
Battery mounting box		MPR-48B1-PW			
Optional Communication Systems					
Ethernet interface (LAN) ⁵⁾		MTR-L03-PW			
Digital interface (RS232C/RS485) ⁵⁾		MTR-480-PW			

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

2) Air temperature measured at refrigerator / freezer centre, ambient temperature 30°C, no load.

3) with MPR-48B1 installed.

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

5) Only for MTR-5000 (data acquisition system) users.

Caution: PHC Corporation guarantees the product under certain warranty conditions.

PHC Corporation in no way shall be responsible for any loss of content or damage to content.

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Printed in Japan 2105-2018-04-CC



MPR Pharmaceutical Refrigerators

+2°C to +23°C

684 L / 671 L (R type)

The MPR-722 (shelves) and MPR-722R (drawers) pharmaceutical refrigerators deliver stable, reliable temperature control for clinical, pharmaceutical, biomedical storage and processing. Fast recovery following door openings assures safe storage even with frequent access and high ambient conditions and to remove heat loads generated by powered instruments.

Airflow Assures Quick Recovery, Interior Uniformity

Vertical, forced air circulation with blower creates a uniform temperature at all shelf or drawer levels, top to bottom and front to back. Internal shelf or drawer clearances permit positive airflow to help restore temperature to setpoint following door openings, and safely accommodates busy, high traffic demand for access to stored contents in pharmacies, clinics and hospitals.

Precision Temperature Control Protects Inventory

Because many pharmaceuticals are degraded or destroyed if accidentally frozen, it is important that temperature be adjusted to desired setpoint in accordance with drug manufacturers' insert specifications. MPR Series pharmaceutical refrigerators operate over a temperature range of 2°C to 23°C. Actual interior air temperature is displayable in 0.1°C increments.

Choose Your Inventory Management Preference

The MPR Series pharmaceutical refrigerator offers two choices in inventory management. The MPR-722 includes 4 open-wire shelves strong enough to hold bulk loads. The MPR-722R is equipped with heavy-duty, fully-extendable painted steel pull-out drawers for more convenient access to the stored product such as large bottles or reagent kits.



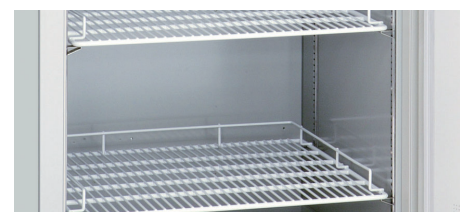
Airflow Prevents Temperature Stratification

The top-mounted air circulation blower directs air downward so it goes along the back, side and front of the load-in drawers or shelves. Regardless of location, all products are subjected to the same safe temperature to assure repeatability of stored product viability.



Microprocessor Controls Simplify Operation

A microprocessor controller monitors all functions. Setpoint is factory set at 5°C. A soft key interface allows setpoint adjustment throughout the operating range. Audible and visual warnings indicate door ajar or temperature deviation from setpoint. The large easy-to-read LED display confirms actual temperature.



Adjustable Shelves Offer Flexibility in Storage Options

Open wire shelves (shown) are adjustable to allow for loads of varying heights such as bulk storage or process equipment such as fraction collectors. The Model MPR-722R with pull-out drawers (not shown) offers a practical solution with additional ergonomic advantages.



Large Capacity Laboratory Refrigerators

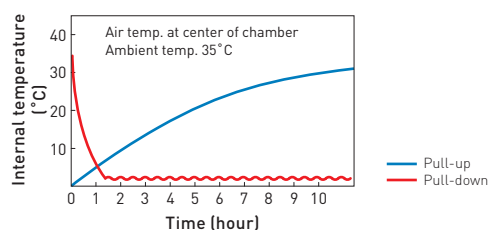
MPR-722

Cycle Defrost Function

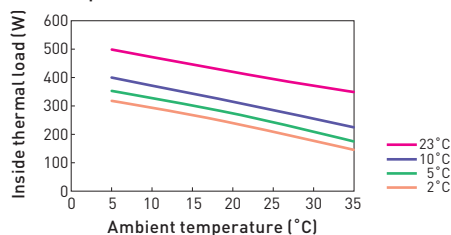
The cycle defrost and evaporator temperature sensor system ensures that defrost occurs only when necessary and automatically, so there is no need to turn off the power for defrosting. Irregular temperature increase during defrost is minimal with no temperature spikes. The evaporation heater also doubles as protection against drops in cabinet temperature caused by a low ambient temperature.

Performance Data

AT35°C Pull-down & Pull-up Temperature

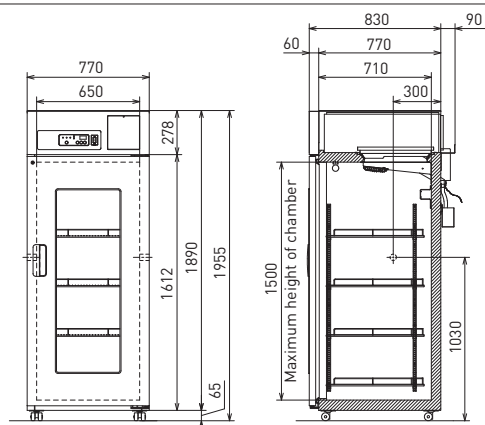


Test of permissible inside thermal load



Dimensions

Unit: mm



Model Number		MPR-722-PE/MPR-722-PK MPR-722-PA		MPR-722R-PE/MPR-722R-PK MPR-722R-PA	
External dimensions (W x D x H) ¹⁾	mm	770 x 830 x 1955			
Internal dimensions (W x D x H)	mm	650 x 710 x 1500			
Volume	litres	684		671	
Net weight	kg	174		193	
Performance					
Temperature control range		+2°C to +14°C ²⁾ +2°C to +23°C ³⁾			
Control					
Controller		Microprocessor with non-volatile memory (Safety Lock with keypad)			
Digital temperature display		LED			
Temperature sensor		Thermistor			
Refrigeration					
Cooling method		Forced cool air circulation			
Defrost method		Cycle defrost + forced defrost			
Refrigerant		HFC and HFO combined (CFC-Free)			
Insulation		Rigid polyurethane foamed insulation (CFC-free)			
Construction		MPR-722		MPR-722R	
Exterior material		Painted Steel			
Interior material		Painted Steel			
Outer doors	qty	1, Double pane glass (Self closing)			
Outer door lock		Y			
Shelves	qty	4 wire shelves (polyethylene-coated, 565 x 604 mm, adjustable)		—	
Drawers	qty	—		5 solid steel drawers (painted steel, 550 x 530 x 100 mm)	
Max. load - per shelf / drawer	kg	50		40	
Access port	qty	3			
Access port position		Left / right / top			
Access port diameter	Ø mm	30			
Casters	qty	4			
Interior light		Fluorescent lamp			
Alarms (V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)					
Power failure		R (V-B optional) ⁴⁾			
High temperature		V-B-R			
Low temperature		V-B-R			
Door open		V-B			
Electrical and Noise Level					
Power supply	V	PE: 220/230/240 PK: 220 PA: 115			
Frequency	Hz	PE: 50 PK, PA: 60			
Noise level ⁵⁾	dB (A)	48			
Options					
Temperature chart recorder		MTR-0621LH-PE			
- Chart paper		RP-06-PW			
- Recorder housing		MPR-S30-PW			
Circular type recorder		MTR-G04C-PE			
- Chart paper		RP-G04-PW			
- Ink pen		PG-R-PW			
- Recorder housing		MPR-S7-PW			
External mounting power failure alarm		MPR-48B1-PW ⁴⁾			
Blackout panel		MPR-72BP-PW			
Optional Communication Systems					
Digital interface (RS232C/RS485) ⁴⁾		MTR-480-PW			
Ethernet interface (LAN) ⁴⁾		MTR-L03-PW			
Quality Management System		-PA/-PE	-PK	-PA/-PE	-PK
Certification		ISO9001	ISO13485	ISO9001	ISO13485

- ¹⁾ External dimensions of main cabinet only, excluding external projections - See dimensions drawings on website for full details
- ²⁾ Air temperature measured at refrigeration compartment centre at AT; -5°C to 0°C, no load
- ³⁾ Air temperature measured at refrigeration compartment centre at AT; 0°C to 35°C, no load
- ⁴⁾ Remote alarm includes optional power failure alarm MPR-48B1-PW (V-B alarm)

- ⁵⁾ Nominal value - Background noise 20 dB (A)
- 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 of 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 is certified for:
Environmental management system: ISO14001

PHC Corporation, Biomedical Division 1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma 370-0596, Japan

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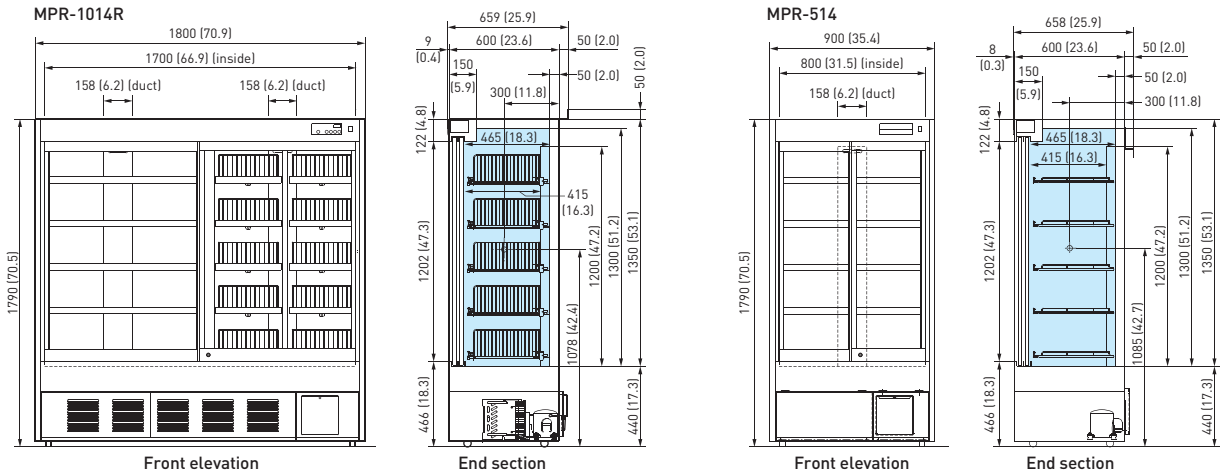
Printed in Japan 2106-2019-04-CC

Specifications	Model No.			
115 V, 60 Hz	MPR-1014-PA	—	MPR-514-PA	—
220 V, 60 Hz	MPR-1014-PK MPR-1014-PR	MPR-1014R-PK MPR-1014R-PR	MPR-514-PK MPR-514-PR	MPR-514R-PK MPR-514R-PR
220 V/230 V/240 V, 50 Hz (CE)	MPR-1014-PE	MPR-1014R-PE	MPR-514-PE	MPR-514R-PE
Temperature range	2°C to 14°C [Ambient temperature -5°C to 35°C]			
External dimensions (W x D x H)* ¹	1800 x 600 x 1790 (mm) / 70.9 x 23.6 x 70.5 (inch)		900 x 600 x 1790 (mm) / 35.4 x 23.6 x 70.5 (inch)	
Internal dimensions (W x D x H)	1700 x 465 x 1300 (mm) / 66.9 x 18.3 x 51.2 (inch)		800 x 465 x 1300 (mm) / 31.5 x 18.3 x 51.2 (inch)	
Effective capacity	1033 liters [36.4 cu.ft.]	1029 liters [36.3 cu.ft.]	489 liters [17.3 cu.ft.]	486 liters [17.2 cu.ft.]
Net weight	246 kg [542 lbs.]	258 kg [569 lbs.]	141 kg [300 lbs.]	147 kg [313 lbs.]
Exterior cabinet	Galvanised steel with baked on finish			
Interior cabinet	Stainless steel			
Outer door	2 sliding doors, Double layer glass with heat reflection film			
Cabinet insulation	Rigid polyurethane foamed-in-place (HCFC free)			
Outer door lock	1			
Shelves & Sliding racks	10 polyester-coated wire shelves Load: 50 kg per shelf	5 polyester-coated wire shelves Load: 50 kg per shelf 10 polyester-coated sliding racks Load: 20 kg per rack	5 polyester-coated wire shelves Load: 50 kg per shelf	5 polyester-coated wire shelves Load: 20 kg per shelf 5 polyester-coated sliding racks Load: 20 kg per rack
Cooling method	Forced cool air circulation			
Evaporator	Fin and tube			
Condenser	Fin and tube		Wire and tube, Tube on sheet	
Compressor	Hermetic type, output: 270 W		Hermetic type, output: 200 W	
Refrigerant	HFC and HFO combined			
Fan motor	for cooling	For cooling: output 3 W x 2	For cooling: output 3 W x 1	
	for condensing	For condenser: output 4 W	—	
Defrosting	Forced type, fully automatic			
Defrost heater	141 W		148 W	

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.
•Appearance and specifications are subject to change without notice.
*1 Exterior dimensions of main cabinet only - see dimension drawings showing handles and other external projections.

Dimensions

Unit : mm (inch)



Options

•Automatic Temperature Recorders

	MTR-G04C-PE/MTR-G04A-PA (Circular Type)	MTR-0621HL-PE/MTR-0621LH-PA (Strip Chart Type)
Recording paper	RP-G04-PW	RP-06-PW
Recorder fixing	MPR-S7-PW	MPR-S30-PW

•External mounting Power Failure Alarm
MPR-48B1-PW

•Data Acquisition System
Interface board MTR-L03-PW for LAN
Interface board MTR-480-PW for RS-232C/RS485
For the data acquisition system MTR-5000 user only.

Preservation (freezers, refrigerators) and Culturing (incubators) Equipment
The management of the design, development, production, sales support, and servicing of the above.
PHC Corporation, Biomedical Division
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PHC Corporation Biomedical Division is certified for:
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Pharmaceutical
Refrigerators
MPR-1014/MPR-1014R
MPR-514/MPR-514R

Preservation
sub-zero

Pharmaceutical Refrigerators

Spacious capacity meets versatile requirements of pharmaceutical refrigeration, from small-variety packages to large-variety packages.



Stable and reliable environment control—the key to high-precision performance for exacting storage or research requirements

Several factors are important to assure the quality of pharmaceuticals, samples and reagents. These are storage temperature, expiry date, exposure to ultraviolet light and humidity. Of these the most important is storage temperature. If the temperature is too high, chemical changes can occur which affect the quality of the materials. If the temperature is too low, there is a risk of structural changes brought about by freezing. Narrow and uniform temperature control without regard to ambient conditions is very important. Don't compromise your results!



MPR-1014R

Equipped with sliding racks.
Effective capacity: 1,029 L (36.3 cu. ft.)

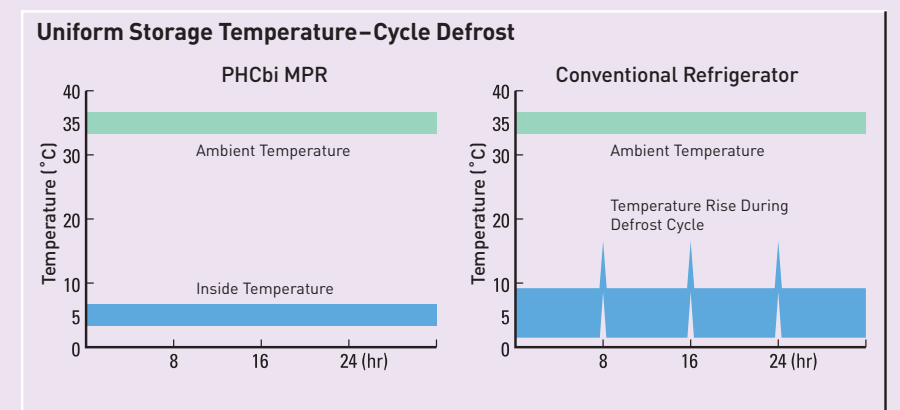
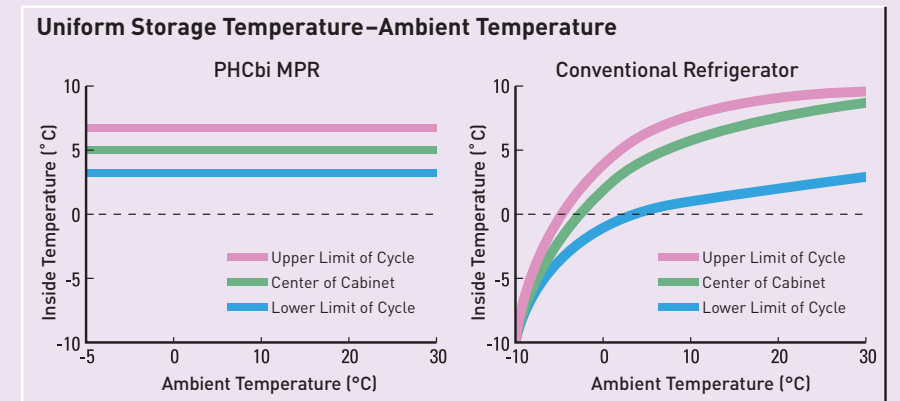
R-type:
The left side is wire shelves.
The right side is 5 sliding racks x 2



MPR-514R

Effective capacity: 486 L (17.2 cu. ft.)

The left side is wire shelves.
The right side is sliding racks.



Features of the MPR-514(R) and MPR-1014(R)

User-friendly design: easy-viewing, easy-opening, and energy-saving

Uniform storage unaffected by ambient temperature

Microprocessor controlled

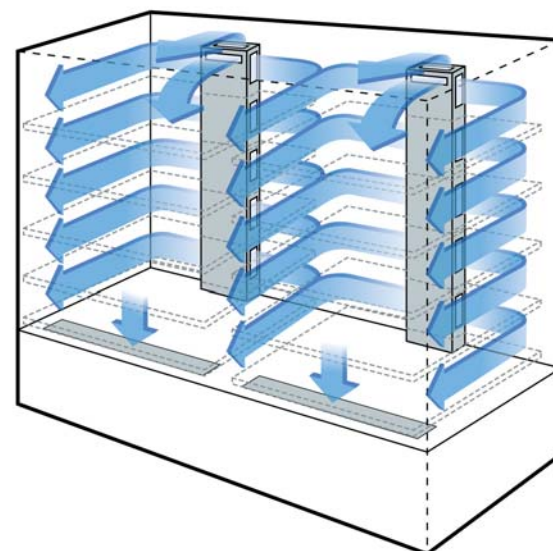
An electronic sensor accurately monitors chamber temperature and feeds the information to the micro-processor for precise control at preset temperature. Fans ensure gentle air circulation to provide uniform top to bottom temperature control after frequent door openings. PHCbi's easily calibrated, reliable and stable controls make validation easier.

Remarkable cooling efficiency

A highly efficient hermetic compressor, specially designed and developed by PHCbi, is utilized to provide powerful and rapid cooling to maintain proper temperature level.

Plenums

PHCbi's plenum design features uniform cold air flow distribution throughout the chamber to ensure temperature uniformity—essential for validated storage requirements.



Ergonomic design

The ergonomic design of the MPR series refrigerators provides a clear view of stored items through the large framed windows. The slim profile allows for easy-reach retrieval of your products. Users can choose from two types to suit their needs; one with all wire shelves or one with sliding racks on one side.



Double-sensor temperature management

The double-sensor control system with alarm-exclusive sensor added to the temperature control sensor always monitors the precise chamber temperature.

Safety is a PHCbi standard

Even the best designed refrigerator must be prepared for the unexpected.

● Cabinet construction

View Window design with protective film to prevent shattered glass from scattering onto the floor. Also features key locked doors.

● Control safety devices

Audible and flashing LED visual alarms alert you to the unlikely event of either a high or low temperature condition.

An over-shooting prevention circuit automatically switches off the fan motor or heater, if the inside temperature rises abnormally.

● Comprehensive alarms

In addition to Low / High temperature alarms and door ajar alarm, power failure alarm can be installed as an option. Remote alarm terminal is also provided as standard.



Control Panel

Worry-free cycle defrosting system

With PHCbi's cycle defrost system, defrosting is performed automatically during compressor "off" cycles, and by sensing frost levels. This way defrosting is performed only when required, further protecting the contents against unnecessary temperature rise. The defrosting heater also acts as an emergency heat source to prevent samples from freezing.

HFC refrigerant & HCFC-free insulation

PHCbi biomedical equipment is designed for low environmental impact. The MPR-514 and 1014 series use HFC refrigerant and the foamed-in-place insulation is HCFC free.



MPR-1412

MPR Pharmaceutical Refrigerators

+2°C to +23°C

1364 L / 1359 L (R type)

The MPR-1412 (shelves) and MPR-1412R (drawers) pharmaceutical refrigerators deliver stable, reliable temperature control for clinical, pharmaceutical, biomedical storage and processing. Fast recovery following door openings assures safe storage even with frequent access and high ambient conditions and to remove heat loads generated by powered instruments.

Airflow Assures Quick Recovery, Interior Uniformity

Vertical, forced air circulation with dual blowers creates a uniform temperature at all shelf or drawer levels, top to bottom and front to back. Internal shelf or drawer clearances permit positive airflow to help restore temperature to setpoint following door openings, and safely accommodates busy, high traffic demand for access to stored contents in pharmacies, clinics and hospitals.

Precision Temperature Control Protects Inventory

Because many pharmaceuticals are degraded or destroyed if accidentally frozen, it is important that temperature be adjusted to desired setpoint in accordance with drug manufacturers' insert specifications. MPR Series pharmaceutical refrigerators operate over a temperature range of 2°C to 23°C. Actual interior air temperature is displayable in 0.1°C increments.

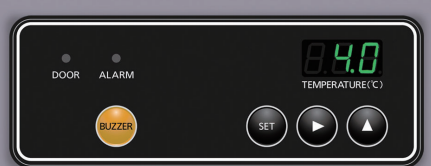
Choose Your Inventory Management Preference

The MPR Series pharmaceutical refrigerator offers two choices in inventory management. The MPR-1412 includes 4 open-wire shelves strong enough to hold bulk loads. The MPR-1412R is equipped with heavy-duty, fully-extendable painted steel pull-out drawers for more convenient access to the stored product such as large bottles or reagent kits.



Airflow Prevents Temperature Stratification

The top-mounted air circulation blower directs air downward so it goes along the back, side and front of the load-in drawers or shelves. Regardless of location, all products are subjected to the same safe temperature to assure repeatability of stored product viability.



Microprocessor Controls Simplify Operation

A microprocessor controller monitors all functions. Setpoint is factory set at 5°C. A soft key interface allows setpoint adjustment throughout the operating range. Audible and visual warnings indicate door ajar or temperature deviation from setpoint. The large easy-to-read LED display confirms actual temperature.



Adjustable Shelves Offer Flexibility in Storage Options

Open wire shelves (shown) are adjustable to allow for loads of varying heights such as bulk storage or process equipment such as fraction collectors. The Model MPR-1412R with pull-out drawers (not shown) offers a practical solution with additional ergonomic advantages.



Large Capacity Laboratory Refrigerators

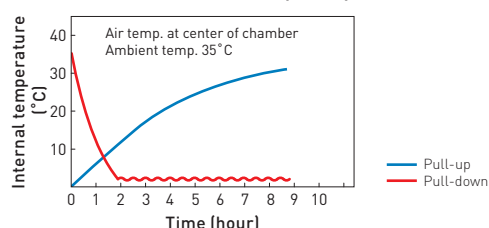
MPR-1412R

Cycle Defrost Function

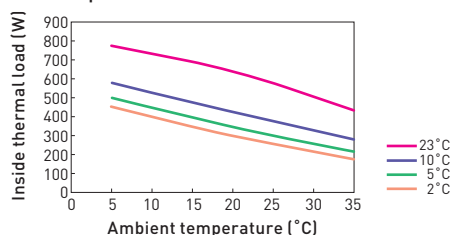
The cycle defrost and evaporator temperature sensor system ensures that defrost occurs only when necessary and automatically, so there is no need to turn off the power for defrosting. Irregular temperature increase during defrost is minimal with no temperature spikes. The evaporation heater also doubles as protection against drops in cabinet temperature caused by a low ambient temperature.

Performance Data

AT35°C Pull-down & Pull-up Temperature

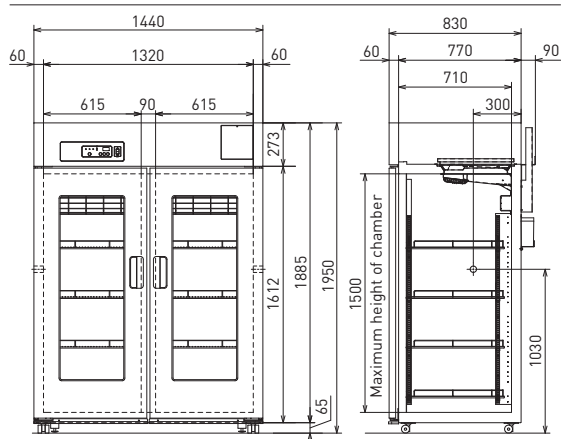


Test of permissible inside thermal load



Dimensions

Unit: mm



Model Number	MPR-1412-PE/MPR-1412-PK MPR-1412-PA	MPR-1412R-PE/MPR-1412R-PK MPR-1412R-PA
External dimensions (W x D x H) ¹⁾	mm	1440 x 830 x 1950
Internal dimensions (W x D x H)	mm	1320 x 710 x 1500
Volume	litres	1364
Net weight	kg	248
Performance		
Temperature control range		+2°C to +14°C ²⁾ +2°C to +23°C ³⁾
Control		
Controller		Microprocessor with non-volatile memory (Safety Lock with keypad)
Digital temperature display		LED
Temperature sensor		Thermistor
Refrigeration		
Cooling method		Forced cool air circulation
Defrost method		Cycle defrost + forced defrost
Refrigerant		HFC and HFO combined (CFC-Free)
Insulation		Rigid polyurethane foamed insulation (CFC-free)
Construction		MPR-1412 MPR-1412R
Exterior material		Painted Steel
Interior material		Painted Steel
Outer doors	qty	2, Double pane glass (Self closing)
Outer door lock		Y
Shelves	qty	8 wire shelves (polyethylene-coated, 530 x 604 mm, adjustable)
Drawers	qty	—
Max. load - per shelf / drawer	kg	50
Access port	qty	3
Access port position		Left / right / top
Access port diameter	Ø mm	30
Casters	qty	4
Interior light		Fluorescent lamp
Alarms (V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)		
Power failure		R (V-B optional) ⁴⁾
High temperature		V-B-R
Low temperature		V-B-R
Door open		V-B
Electrical and Noise Level		
Power supply	V	PE: 220/230/240 PK: 220 PA: 115
Frequency	Hz	PE: 50 PK, PA: 60
Noise level ⁵⁾	dB (A)	48
Options		
Temperature chart recorder		MTR-0621LH-PE
- Chart paper		RP-06-PW
- Recorder housing		MPR-S30-PW
Circular type recorder		MTR-G04C-PE
- Chart paper		RP-G04-PW
- Ink pen		PG-R-PW
- Recorder housing		MPR-S7-PW
External mounting power failure alarm		MPR-48B1-PW ⁴⁾
Blackout panel		MPR-72BP-PW
Optional Communication Systems		
Digital interface (RS232C/RS485) ⁶⁾		MTR-480-PW
Ethernet interface (LAN) ⁶⁾		MTR-L03-PW
Quality Management System		-PA/-PE -PK -PA/-PE -PK
Certification		ISO9001 ISO13485 ISO9001 ISO13485

¹⁾ External dimensions of main cabinet only, excluding external projections - See dimensions drawings on website for full details

²⁾ Air temperature measured at refrigeration compartment centre at AT: -5°C to 0°C, no load

³⁾ Air temperature measured at refrigeration compartment centre at AT: 0°C to 35°C, no load

⁴⁾ Remote alarm comes with optional power failure alarm MPR-48B1-PW (V-B alarm)

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

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 of 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 is certified for:
Environmental management system: ISO14001

PHC Corporation, Biomedical Division 1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma 370-0596, Japan

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Printed in Japan 2107-2019-04-CC

Preservation
above-zero

Temperature range

+2°C to 14°C

**Compact and
large capacity**

**New cycle defrosting
system**

**Pharmaceutical Refrigerators for
reliable storage of pharmaceuticals,
samples and reagents**

- Precise temperature control
- Superior cooling performance
- Forced air circulation
- Double-glazing glass door
- Slim, and space saving design
- Useful alarm functions



MPR-S163



MPR-S313

MPR-S163/MPR-S313

Features

Improved Energy Saving

PHCbi's new cycle defrosting system achieved 15 %* energy saving compared to conventional models. This system observes the defrosting condition after every cycle, and prevents temperature rises that are caused by defrosting.

*The data is a measured example [set temp. 5°C, AT 23°C, 230 V 50 Hz, no load]. Actual power consumption will vary depending on the set and ambient conditions, loading and local voltage.

User Friendly Design

1. New Control Panel

- Newly designed for improved operability, visibility, and calibration
- Digital setup for easy and secure operation
- Temperature alarm settings made on the control panel



2. LED Interior Light

The LED interior light automatically turns on/off in conjunction with the door opening/closing. It can also be controlled from the control panel.



3. Double-Paned Glass with Heat-Reflective Film

The refrigerator doors constructed of double-paned glass with heat-reflective film, allow easy loading and unloading of samples while preventing ultraviolet rays, which may damage stored items, from entering the unit. PHCbi's unique heatreflective film blocks the passage of radiant heat rays through the glass panels and keeps the inside temperature from being adversely affected by excessive amounts of heat.

Effective Temperature Control

1. Microprocessor Temperature Control

A thermistor sensor monitors temperature inside the chamber, and microprocessor temperature control ensures that the set temperature is maintained. Even if the door is opened and closed frequently, the circulation fan ensures rapid temperature adjustment to provide a highly reliable, stable preservation environment that is not affected by ambient temperature.

2. Fan-Forced Air Circulation

The temperature stays even throughout the inside of the refrigerator with the fan-forced air circulation system. No matter how the load is distributed, every corner of the unit is immediately cooled with no noticeable variation in temperature apparent inside the cabinet.

Enhanced Alarm and Safety Functions

1. Door Open Alarm

When the door is opened, the Door Open indicator lamp lights automatically. After approx. 2 minutes, a buzzer alarm will sound if the door has not been closed [settable from 0 to 15 minutes]. If the door remains open even after the buzzer is stopped, the buzzer rings again after 30 minutes [settable from 0 to 60 minutes in increments of 10 minutes].

2. Abnormal Temperature Alarm

If the inside temperature changes $\pm 2^{\circ}\text{C}$ to $\pm 14^{\circ}\text{C}$ from the set temperature, the digital temperature display flashes, and a buzzer sounds an alarm after 15 minutes [settable from 0 to 15 minutes].

Specifications

	Model No.	
220 V, 60 Hz	MPR-S163-PT MPR-S163-PK MPR-S163-PR	—
220 V, 50 HZ/60 Hz	—	MPR-S313-PT MPR-S313-PK MPR-S313-PR
230 V/240 V, 50 Hz (CE)	—	MPR-S313-PE
220 V/230 V/240 V, 50 Hz (CE)	MPR-S163-PE	—
External dimensions (W x D x H)*1	800 x 465 x 1090 (mm) 31.5 x 18.3 x 42.9 (inch)	800 x 465 x 1800 (mm) 31.5 x 18.3 x 70.9 (inch)
Internal dimensions (W x D x H)	720 x 300 x 725 (mm) 28.3 x 11.8 x 28.5 (inch)	720 x 350 x 1435 (mm) 28.3 x 13.8 x 56.5 (inch)
Effective capacity	158 liters [5.6 cu.ft.]	340 liters [12.0 cu.ft.]
Net weight	71 kg [156 lbs.]	100 kg [220 lbs.]
External cabinet	Galvanised steel with baked-on finish	
Internal cabinet	Stainless steel	
Insulation	Polyurethane foam	
Doors	Sliding glass doors, double-glazing glass with heat-reflective film	
Shelves	Hard steel wire	
Access port	ø30 mm on back wall	
Lighting / Casters	LED/2 casters	
Compressor	Hermetic type, 90 W	Hermetic type, 160 W
Refrigerant	HFC	
Evaporator	Fin & Tube, Forced-air circulation	
Condenser	Wire & Tube	
Defrosting	Cyclical defrosting & evaporator temp. detection system	
Defrosting heaters	87 W	101 W
Temperature control range	2°C to 14°C	
Temperature display	Digital (1°C increments)	
High / Low temperature alarm system	$\pm 2^{\circ}\text{C}$ to $\pm 14^{\circ}\text{C}$ from temperature setting value	
Door ajar alarm	Buzzer / door ajar lamp	
Options	Temperature recorder: MTR-0621LH-PE (recorder fixing: MPR-S30-PW) MTR-G04C-PE (recorder fixing: MPR-S7-PW) Battery mounting box: MPR-48B1-PW Interface board (For data acquisition system MTR-5000 users only) MTR-L03-PW / MTR-480-PW	

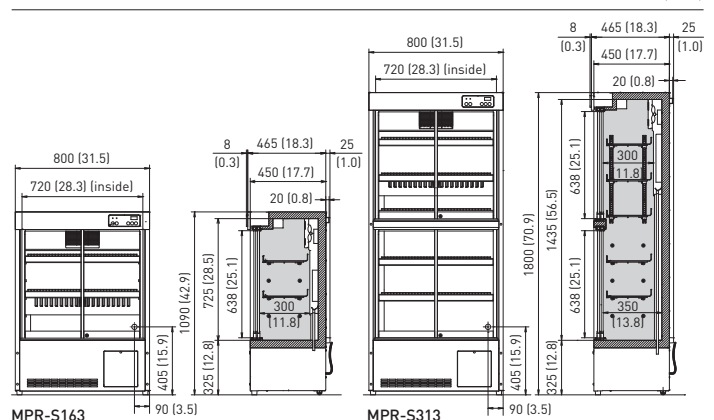
Caution: PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents of the product.

- Appearance and specifications are subject to change without notice.
- Water condensation may sometimes appear on the glass doors, but this is normal and not a malfunction.

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

Dimensions

Unit: mm (inch)



Preservation (freezers, refrigerators) and Culturing (incubators) Equipment

The management of the design, development, production, sales support, and servicing 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

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Preservation
above-zero



MPR-215F

MPR-414F

Refrigerator Temperature

+2°C to +14°C

Freezer Temperature

-20°C to -30°C

Effective Capacity

Refrigerator:

176L/6.2cu.ft.

340L/12.0cu.ft.

Freezer:

39L/1.4cu.ft.

82L/2.9cu.ft.

(MPR-215F)

(MPR-414F/FS)

Pharmaceutical Refrigerator features a built-in Freezer

- One unit with dual temperature zone
- Superior cooling performance
- Quiet operation
- Various alarm and safety devices

MPR-215F/MPR-414F/MPR-414FS

Features

Safe Storage

- Microprocessor control system provides accurate temperature.
- Fan-forced air circulation system (refrigerator) offers fast recovery of temperature and better uniformity.
- Unique cycle defrost system prevents temperature rising by shorter defrost cycles which activate after each compressor cycle.
- Various safety systems such as high / low temperature audible and visual alarms, remote alarm, door ajar alarm and keyed door locks.
- MPR-414FS has no glass on the door to keep contents unseen.

Usability

- One unit with dual temperature zone needs only minimal installation space.
- Four-door design reduces air loss during door opening and makes efficient use of space in front of unit. (MPR-414F/FS)
- Triple-pane (MPR-414F) or double-pane (MPR-215F) windows with heat reflection film reduce condensation.
- Zero adjustment through control panel and optional recorder provide easier validation service.

Quiet Operation

- Two specially designed compressors offer quiet operation.

Specifications

	Model No.			
110 V, 60 Hz	MPR-215F-PT		—	
110 V/115 V, 60 Hz	—		MPR-414F-PT	
220 V, 50 Hz	—		MPR-414F-PB / MPR-414FS-PB	
220 V, 60 Hz	MPR-215F-PK MPR-215F-PR		MPR-414F-PK / MPR-414FS-PK MPR-414F-PR	
230 V/240 V, 50 Hz [CE]	—		MPR-414F-PE / MPR-414FS-PE	
220 V/230 V/240 V, 50 Hz [CE]	MPR-215F-PE		—	
External dimensions (W x D x H)* ¹	Refrigerator	Freezer	Refrigerator	Freezer
	540 x 557 x (45)* x 1794 (mm)		800 x 600 x 1805 (mm)	
	21.3 x 21.9 x (1.8)* x 70.6 (inch) *projection		31.5 x 23.6 x 71.1 (inch)	
Internal dimensions (W x D x H)	455 x 466 x 917 (mm)	420 x 342 x 267 (mm)	720 x 495 x 1425 (mm)	317 x 440 x 576 (mm)
	17.9 x 18.3 x 36.1 (inch)	16.5 x 13.5 x 10.5 (inch)	28.3 x 19.5 x 56.1 (inch)	12.5 x 17.3 x 22.7 (inch)
Effective capacity	176 liters [6.2 cu.ft.]	39 liters [1.4 cu.ft.]	340 liters [12.0 cu.ft.]	82 liters [2.9 cu.ft.]
Net weight (Approx.)	86 kg (190 lbs.)		414F: 126 kg [278 lbs.]/414FS: 119 kg [262 lbs.]	
Exterior	Galvanised steel with baked on finish			
Interior	Styrene resin	Colored aluminum plate	Stainless steel	Colored aluminum plate
Insulation	Rigid polyurethane foamed in place			
Temperature control range	+2°C to +14°C (Ambient temp. : 30°C)	-20°C to -30°C (Ambient temp. : 30°C)	+2°C to +14°C (Ambient temp. : 35°C)	-20°C to -30°C (Ambient temp. : 30°C)
Temperature control	Microprocessor control			
Cooling method	Fan-forced air circulation	Direct cooling	Fan-forced air circulation	Direct cooling
Compressor	55 W	55 W	160 W	160 W
Refrigerant	HFC			
Shelves (max. load)	3 [20 kg/shelf]	1 [10 kg/shelf]	Large: 2 [25 kg/shelf] Small: 3 [15 kg/shelf]	1 [15 kg/shelf]
Access port	ø 30 mm (left)	ø 30 mm (left)	ø 30 mm (rear)	ø 30 mm (rear)
Casters	4 casters with 2 adjustable leveling feet			
Alarm and safety	High / low temperature alarm, Door ajar alarm, Memory back-up during power failure Self diagnostics, Remote alarm contact [DC 30 V, 2 A], Door key lock			
Options	2-pen type circular recorder: MTR-G3504A-PA/G3504C-PE, Recorder fixing: MPR-S7-PW, Recorder for freezer: MTR-4015LH-PE/PA, Recorder fixing: MPR-S30-PW, Recorder for refrigerator: MTR-0621LH-PE/PA, Drawers for the bottom left compartment: MPR-41R [MPR-414F/FS only], Data acquisition system: Interface board MTR-L03-PW for LAN/Interface board MTR-480-PW for RS-232C/RS485 [For the data acquisition system MTR-5000 user only.]			

*Cooling performance is indicated by the temperature reached at the center of the freezer (at ambient temperature of 30°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°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.

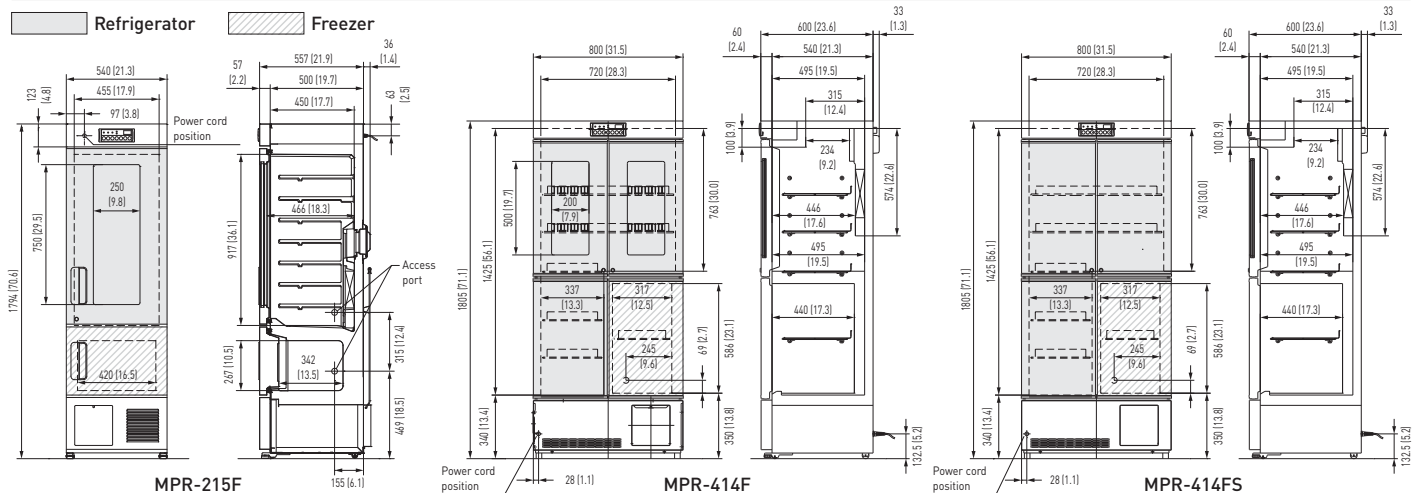
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