

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.

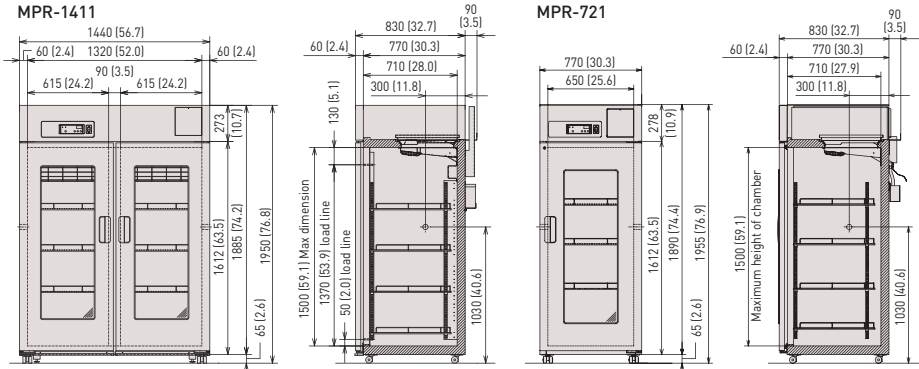
Options


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





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

## Large Capacity Pharmaceutical Refrigerators

Environmental Laboratory  
Wide temperature range

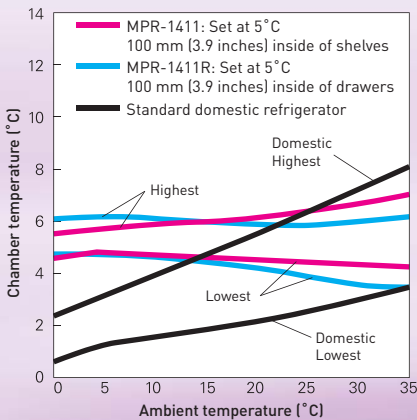
**2°C to 23°C** (ambient temperature 0°C to 35°C)

### 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.

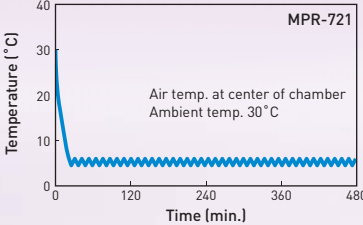
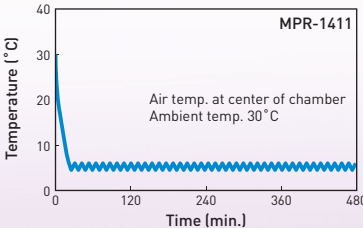
### Drawer type (MPR-721R/MPR-1411R)

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.

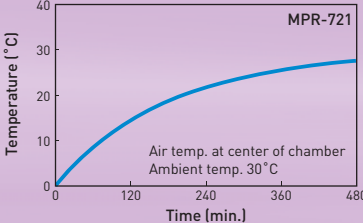
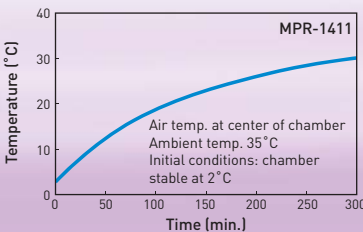
The MPR-721R is shipped with five drawers, while the MPR-1411R is shipped with ten drawers, five in each half of the cabinet.

### Performance data (Reference Data)

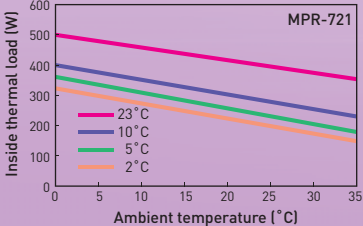
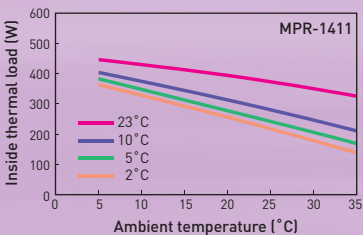
#### Pull-down characteristics (no-load)



#### 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.)**