# PHCbi

MPR-N250FH    MPR-N250FSH

# MPR
## Natural Refrigerant
## Pharmaceutical Refrigerators with Freezer

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

**ECO** natural refrigerants

**IC+** inverter compressor

## 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.
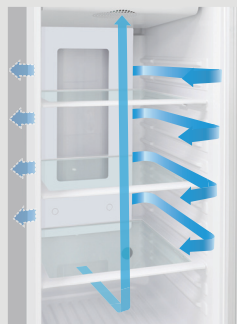
## Energy-efficient performance

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.

# PHC Corporation, Biomedical Division

# 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.
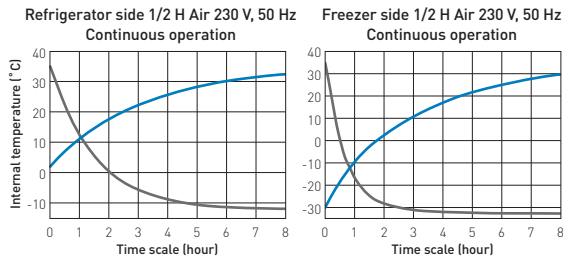
## Defrost Methods

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.
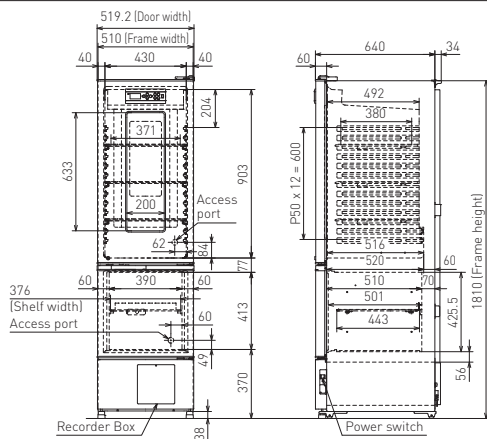
## Performance Data

### Pull-down & Pull-up Temperature (No load)
### AT35˚C / AT30˚C (Refrigerator/Freezer)

Pull-down
Pull-up

Refrigerator side 1/2 H Air 230 V, 50 Hz
Continuous operation

Freezer side 1/2 H Air 230 V, 50 Hz
Continuous operation

Internal temperature (°C)
Time scale (hour)

## Dimensions

Unit: mm

519.2 (Door width)
510 (Frame width)
430
640
34
492
380
204
371
P50 x 12 = 600
903
200
Access port
62
84
516
520
510
501
376 [Shelf width]
Access port
390
413
443
1810 (Frame height)
425.5
370
56
38
Recorder Box
Power switch

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

| Model Number | | MPR-N250FH-PE / MPR-N250FSH-PE | |
| --- | --- | --- | --- |
| | | 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 | PA: 115 V, 60 Hz / PE: 220/230/240 V, 50 Hz | |
| Noise level [4] | dB (A) | 40 | |
| **Options** | | | |

| | | Refrigerator | Freezer |
| --- | --- | --- | --- |
| 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] | |
| Blackout panel | | MPR-45BP-PW | |
| **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 +30ºC, no load.

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

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

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

[6] Requires optional battery kit for power failure alarm MPR-48B2-PW

[7] 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.