



TECHNICAL BULLETIN

Pharmaceutical Refrigerators

The vital link in your Cold Chain Process Secure Cold Storage of Valuable Medical & Vaccine Supplies

To ensure quality, safety and effectiveness of vital medical supplies, SANYO Medical Refrigerators feature precisely regulated cooling systems to maintain accurate temperature control under a wide range of environmental conditions. For years, SANYO has provided equipment for medical supply, storage and temperature control to hospitals and pharmacies throughout the world. After valuable feedback from the medical community, SANYO has developed the MPR-161 Pharm & MPR-311-Pharm Medi-Cool, equipped with advanced technology to provide the ideal storage environment for medical refrigerators.

Outstanding Cooling Efficiency

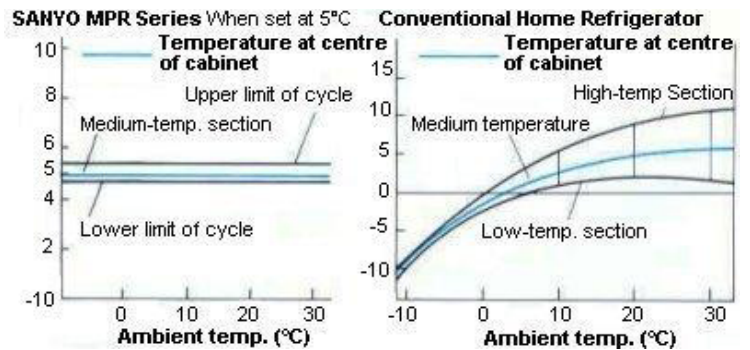
Due to their nature of use, pharmaceutical refrigerators must be opened frequently. With this specification in mind, a highly efficient hermetic compressor, designed and developed by SANYO, is utilized in the refrigeration system. The ultra-quiet compressor provides powerful, immediate cooling which is effective in maintaining the inside temperature at a constant level. In combination with the unique SANYO Compressor System, the SANYO MPR-161-Pharm & MPR-311-Pharm also employ the following features, designed to protect your valuable supplies and to maintain the Cold Chain Process.

Precise Temperature Control

1. Electronic Temperature Control

A sensitive thermistor sensor monitors the temperature inside the chamber, while the set temperature is maintained using microprocessor and electronic temperature control systems. 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 effected by ambient temperatures (even as high as 40°C).

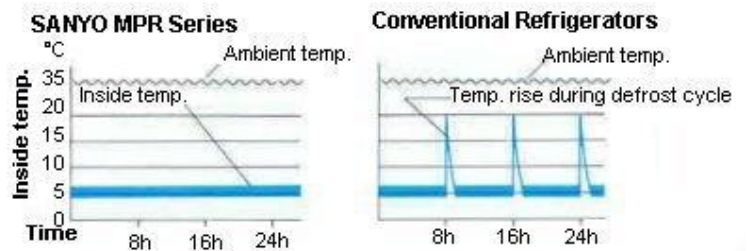
Relationship Between the Inside Temperature and Ambient Temperature



2. Fan-Forced Air Circulation

The internal air temperature stays even throughout the refrigerator through the fan-forced air circulation system. Every corner of the unit is immediately cooled with no noticeable variation in temperature apparent inside the cabinet

Comparison with Conventional Refrigerators



MPR-513

3. Cycle Defrost System

Standard refrigeration systems often employ a fixed defrost cycle which can cause significant temperature variations during normal operation, especially in areas of elevated temperature and humidity. Sanyo's optimized cyclical defrost system permits defrosting to take place without increasing the temperature inside the cabinet by rapidly removing any residual frost during the compressor's normal off cycle.

Digital Temperature Display and Max / Min Temperature Logging

An easy-to-read digital temperature display provides at-a-glance confirmation of the current operating temperature. To simplify temperature control, readings are displayed in graduations of 1°C for temperatures ranging from 0°C to 15°C. In addition to the standard temperature display and specifications for the QCPP compliant units, a max/min digital temperature indication system has been implemented to simplify the data recording process. For flexibility and ease of use, the max/min thermometer features an extended lead and temperature probe to allow for adaptation to your preferred temperature monitoring protocols and product logging solutions. We can also offer additional temperature logging systems as required.



Dual, High Visibility Sliding Door System with Alarm Warning

1. Dual Sliding Doors

To help effectively manage the internal temperature environment, the SANYO units have been fitted with lockable, dual sliding doors. This means that less cold air is lost per opening than with a single large door system. It also means the doors do not need to open 'out', allowing both refrigerators to be designed very narrow and slim (450mm depth), conserving valuable lab space.

2. Double-Paned Glass with Heat-Reflective Film

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

3. Door Open Alarm

When the door is opened, the indicator lamp automatically activates. After approximately 30 seconds, a buzzer alarm will sound if the door has not been closed. When you need to keep the door open for longer periods of time, you can deactivate the alarm via the buzzer switch provided.

4. Extra Wide Shelves for High Product Visibility (Almost 3.5 meters)

The shelves were designed for wide linear viewing. Less product is needed to be placed in the back which translates into easier access to samples. When utilizing the additional optional shelves and base, 3.45 meters of linear shelf space is achieved in the MPR-161-Pharm & almost double that in the MPR-311-Pharm.

Abnormal Temperature Alarm and Safety Devices

1. Abnormal Temperature Alarm

Standard in the SANYO Pharmacy units is the preset alarm. If the inside temperature suddenly descends to below 0°C or above 15°C, an alarm sounds. This monitor is based on a quick responding air temperature sensor to alert you of potential problems before your samples are damaged. An optional fully adjustable alarm system, incorporated into the digital max / min logger is also available upon request.

2. Abnormal Temperature Safety Device and Anti-Freeze Protection

If the internal temperature reaches below -2°C or above 20°C (approximately), the high/low cutoff safety devices prevent the contents of the refrigerator from being damaged, while visible and audible alarms are activated. In the unlikely event of very low internal temperatures, an automatic heating system is activated to prevent product freezing.

General Features

- Rigid polyurethane foam insulation acts to maintain cold air inside the unit and effectively protects against the intrusion of warm air.
- Chemically-resistant stainless steel forms the interior surface of the cabinet and ensures reliable service for many years of use.
- Less installation area is required with the implementation of 2 easy-open sliding doors.

Specifications		
Model No	MPR 161 Pharm	MPR 311 Pharm
External Dims (WxDxH) mm	800 x 450 x 1,090	800 x 450 x 1,800
Internal Dims (WxDxH) mm	720 x 300 x 725	720 x 350 x 1,435
Effective Capacity	158L (5.58 cu.ft)	340L (12.01 cu.ft)
Cabinet	Metallic brown baked-on acrylic finish on galvanized zinc-plated steel	
Interior	Stainless steel	
Insulation	Polyurethane foam	
Doors	Sliding glass doors, double-paned glass with heat-reflective film	
Shelves	Rigid wire with zinc-plated finish (DR type 3 shelves)	
Monitoring Hole	30mm Ø on back wall	
Lighting	20W fluorescent lamp (1)	
Castors	2	
Voltages/Amps (standard GPO)	240v/0.9a	240v/1.4
Compressor	Hermetic type, 90W	Hermetic type, 160W
Refrigerant	R-412A (TP5R)	
Evaporator	Fin & Tube, forced-air circulation	
Condenser	Wire & Tube	
Defrosting	Cyclical defrosting & evaporator temp. detection system	
Defrosting Heaters	114W	
Temperature Control	Electronic temp. control [Range: 2°-14°C (35.6°-57.2°F)]	
Temperature Display	Digital [display range: 0°-15°C (32°-59°F)]	
High-temperature Alarm system	Flashing digital indicator/buzzer above 15°C. High-temp. indicator lamp above approx. 20°C. Optional fully adjustable alarm also available	
Low-temperature alarm system	Flashing digital indicator/buzzer below 0°C. Defrost indicator lamp below approx. -2°C. Optional fully adjustable alarm also available	
Max / Min Logging	Digital Max / Min Logging System	
Door ajar alarm	Buzzer/door ajar lamp	
Weight	59kg (129 lbs. 13 ozs)	90kg (198lbs)

Specifications are subject to change without notice

For further information on any other of the products supplied by Quantum Scientific, please contact us on 1800 777 168 or e-mail us at sales@quantum-scientific.com.au



Preservation