

PHCbi

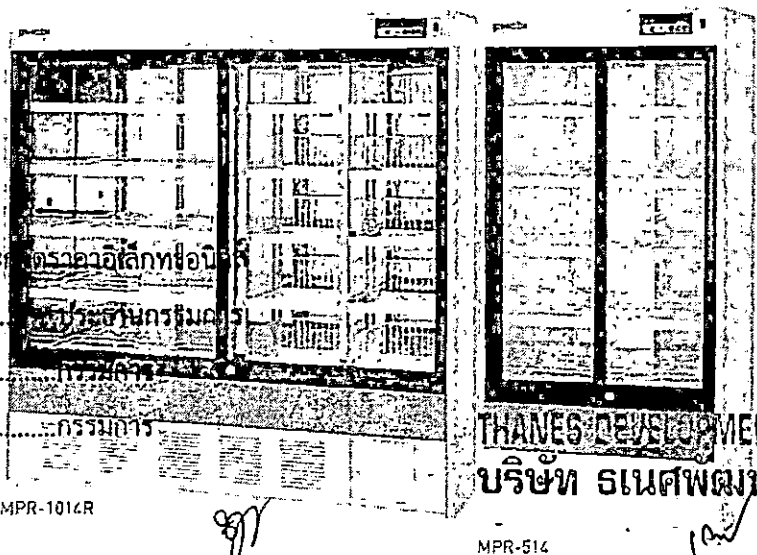
Pharmaceutical
Refrigerators
MPR-1014/MPR-1014R
MPR-514/MPR-514R

Preservation

Sub-Zero

Pharmaceutical Refrigerators

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



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MPR-1014R

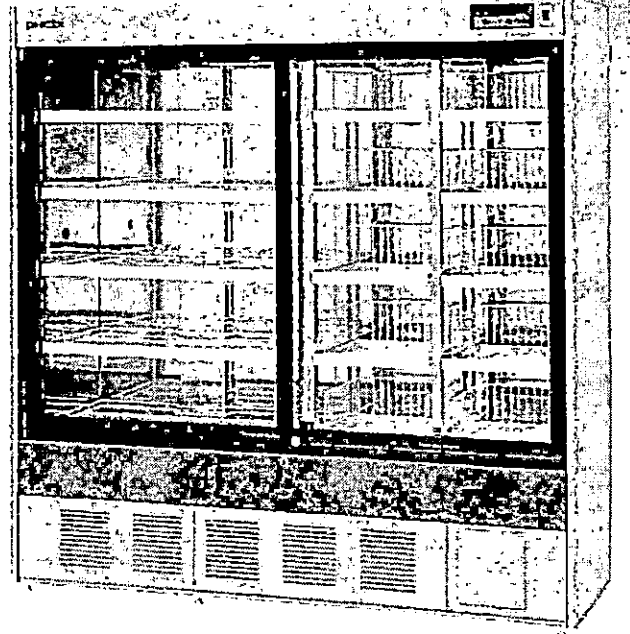
MPR-514

THANES DEVELOPMENT CO., LTD.
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Stable and reliable environment control—the exacting storage or research requirements

2°C to 14°C
 (Ambient Temperature -5°C to 35°C)

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

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

Uniform storage unaffected by ambient temperature

Microprocessor controlled

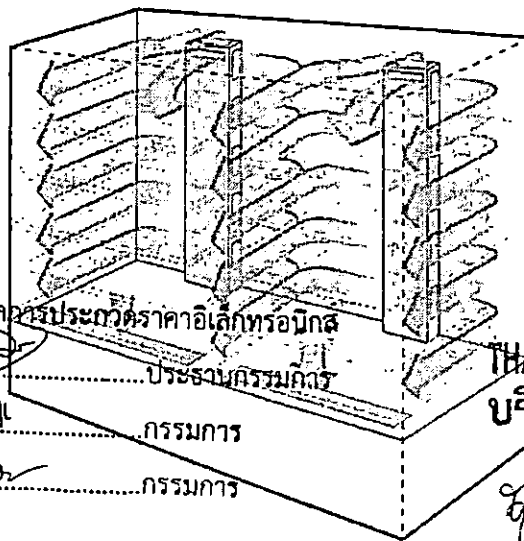
An electronic sensor accurately monitors chamber temperature and feeds the information to the micro-processor for precise control at preset temperature. Fans ensure gentle air circulation to provide uniform top to bottom temperature control after frequent door openings. PHCbi's easily calibrated, reliable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



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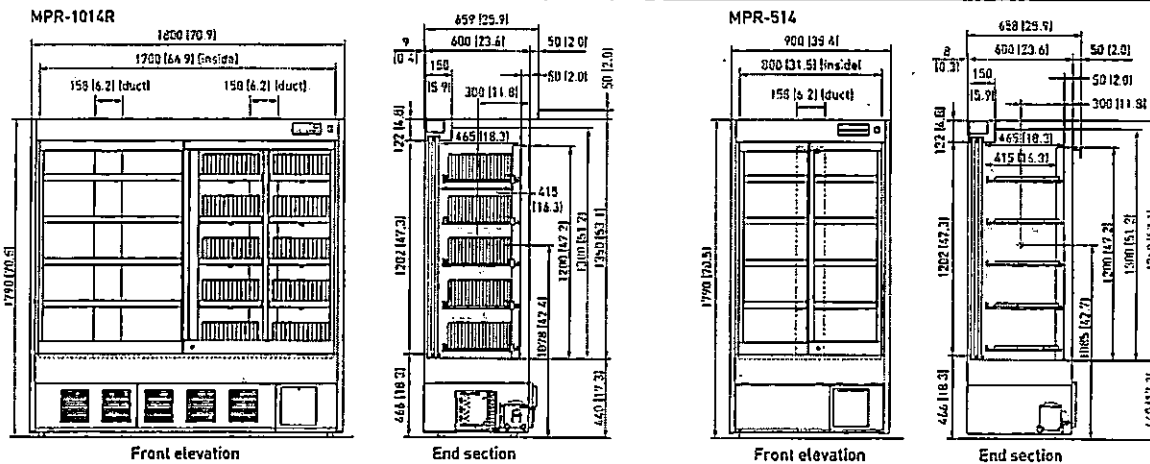
Specifications

	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]* (9.9)	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] (9.3)	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 (9.4)	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 (9.1)	2 sliding doors, Double layer glass with heat reflection film			
Cabinet insulation (9.1)	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 (9.7)	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 (2.9)	for cooling: output 3 W x 2 for condensing: output 4 W		For cooling: output 3 W x 1	
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
 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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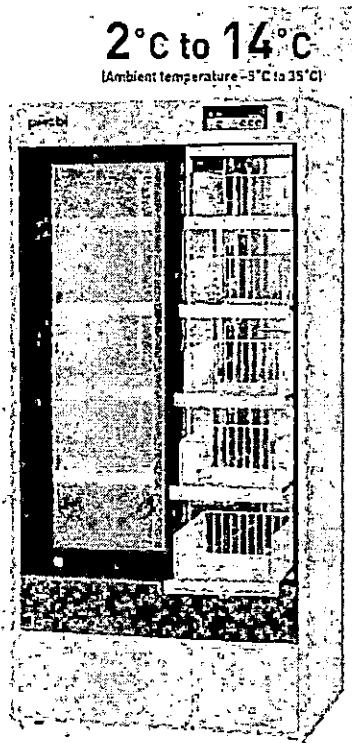


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http://www.phc.com/global/biomedical/

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key to high-precision performance for



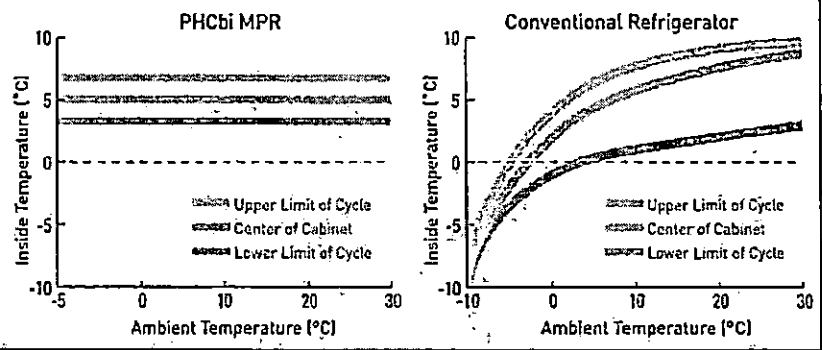
2°C to 14°C
 (Ambient temperature -5°C to 35°C)

MPR-514R

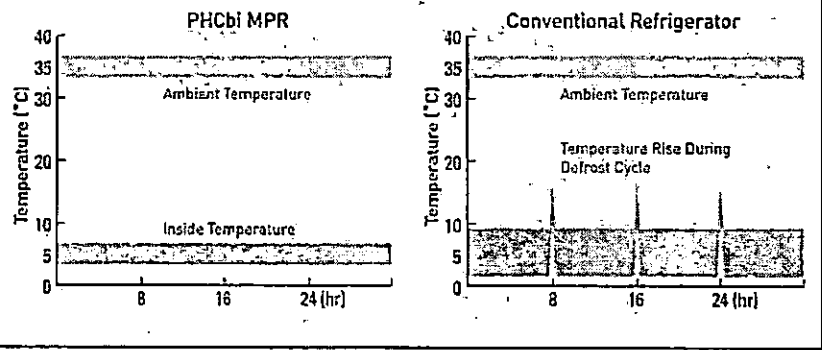
Effective capacity: 486 L (17.2 cu. ft.)

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

Uniform Storage Temperature - Ambient Temperature

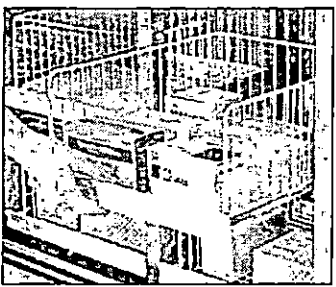


Uniform Storage Temperature - Cycle Defrost



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

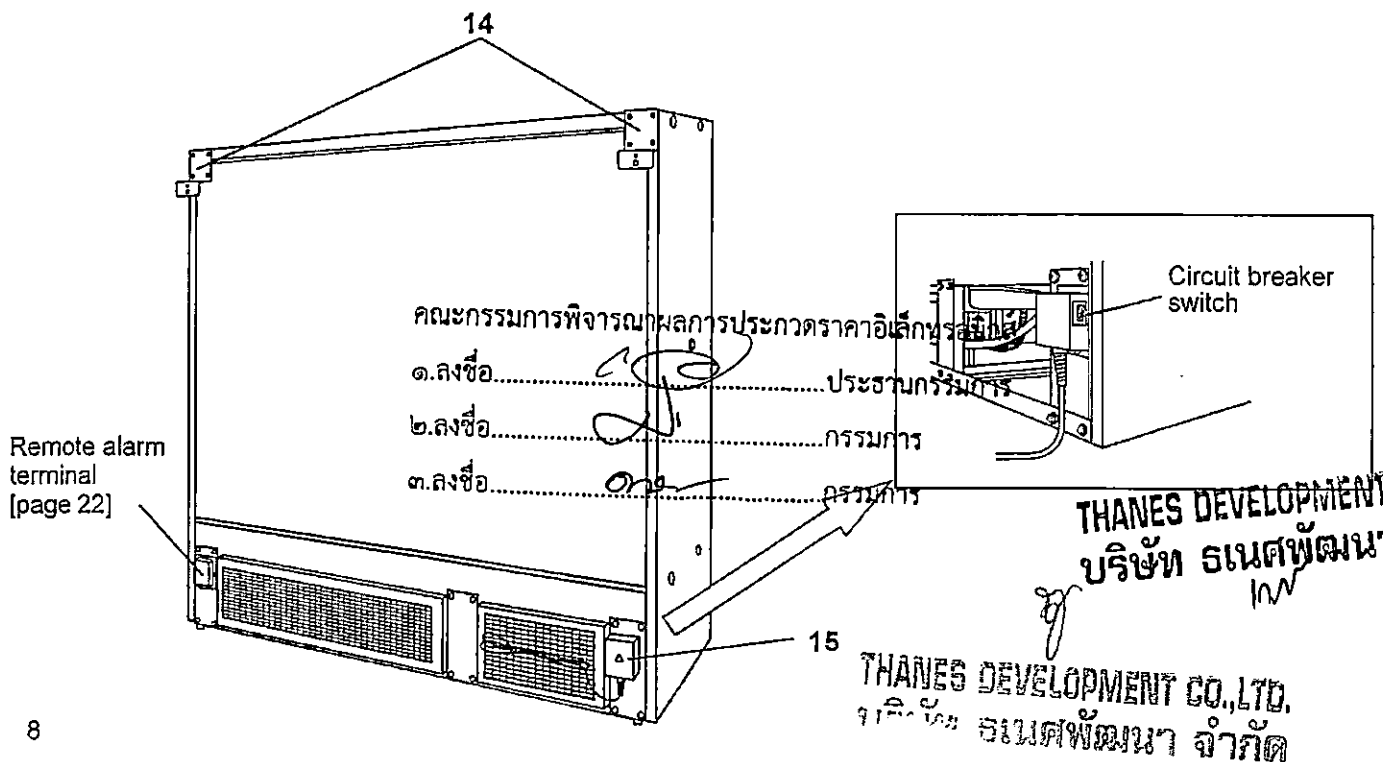
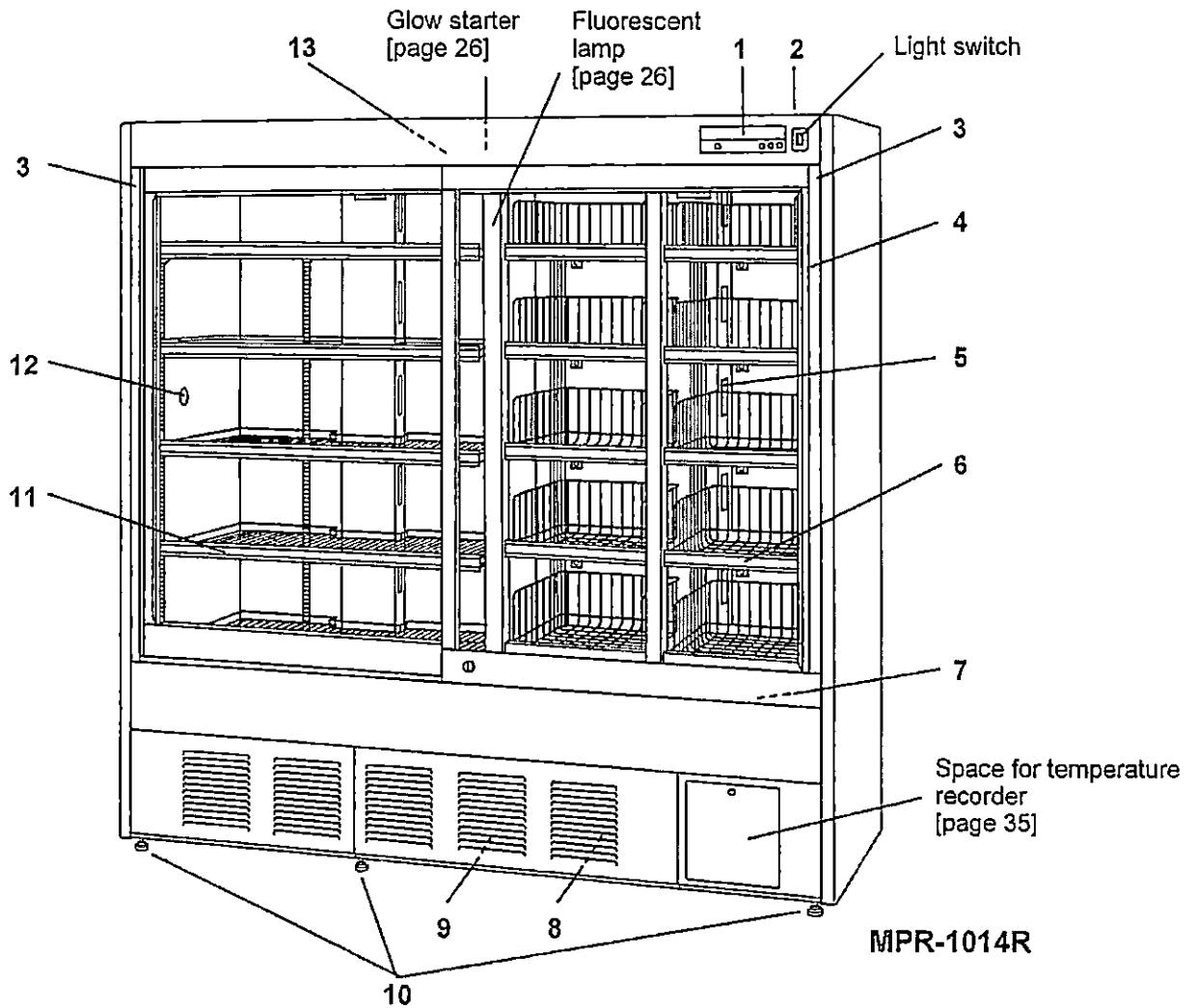
PHCbi biomedical equipment is designed for low environmental impact. The MPR-514 and 1014 series use HFC refrigerant and the foamed-in-place insulation is HCFC free.

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REFRIGERATOR COMPONENTS

Refrigerator unit



SPECIFICATIONS











Product name	Pharmaceutical Refrigerator	
	MPR-1014	MPR-1014R
External dimensions	W1800 mm x D600 mm + (58) mm x H1790 mm	
Internal dimensions	W1700 mm x D465 mm x H1300 mm	
Effective capacity	(2.9) 1033 L	1029 L
Exterior	(2.5)	Painted steel
Interior	(2.5)	Stainless steel
Door	(2.6)	Sliding type, 2-layer pair glass with heat ray reflection film x 2
Insulation	Rigid polyurethane foamed-in place	
Shelves	(2.4) Hard steel wire on polyester coating x 10 Allowable load; 50 kg/shelf	Hard steel wire on polyester coating x 5 Allowable load; 50 kg/shelf
Drawers (MPR-1014R only)	---	Hard steel wire on polyester coating x 10 Allowable load; 20 kg/drawer
Access port	Inner diameter; 30 mm, Left side	
Cooling method	Forced cool air circulation	
Compressor	(2.1)	Hermetic type, Output; 270 W x 1
Fan motor	(2.3)	For chamber cooling; output 3 W x 2
Evaporator	Fin and tube type	
Condenser	Fin and tube type	
Refrigerant	(2.7)	R-513A
Defrosting	(2.8)	Cycle defrost + forced defrost, Fully automatic
Defrost heater	(2.5)	141 W
Temperature controller	(2.9)	Electronic control system (control range; between 2 °C and 14 °C)
Thermometer	Digital thermometer	
Fluorescent lamp	(2.10)	FL40SD (FL40SSECW for MPR-1014-PE and MPR-1014R-PE)
Alarms	High temp. alarm, Low temp. alarm, 0 °C alarm, Air circulation alarm, Door alarm Power failure alarm (with MPR-48B1)	
Remote alarm contact	During alarm buzzer and power failure, Output; N.O.; "close", N.C.; "open" *	
Weight	246 kg	258 kg
Accessories	(2.10.7) 1 set of key 40 shelf stoppers, 10 shelves	1 set of key 20 shelf stoppers, 5 shelves 10 drawers
Optional components	Temperature recorder (MTR0621LH) and Recorder fixing (MPR-S30) Temperature recorder [MTR-G04A (for 100 V to 120 V) or MTR-G04C (for 220 V to 240 V)] and Recorder fixing (MPR-S7) Battery mounting box (MPR-48B1)	

- ◇ Design or specifications will be subject to change without notice.
- ◇ The dimension in () shows the projected dimension.
- ◇ Refer to the updated catalog when ordering an optional component.
- * It is recommended to use cables with a maximum length of 30 meters.

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- F02: <Function> Setting of low temp. alarm
 <Operation> Input F02 and press SET key to display '-05' (Default).
 Change to your desired value with  key and  key
 (Range: -02~-14)
 Press SET key to memorize the value and revert to chamber temperature display.
- F03: <Function> Display of battery accumulation time
 <Operation> Input F03 and press SET key to display F03 and battery accumulation time alternately. Press SET key to revert to chamber temperature display.
 Displayed as '00.0' if battery accumulation is equal or less than 36 days.
- F04: <Function> ^{0.104} Setting of door alarm delay time
 <Operation> Input F04 and press SET key to display '002' (Default).
Change to your desired value with  key and  key.
 (Range:001~015)
 Press SET key to memorize the value and revert to chamber temperature display.
- F06: <Function> Setting of service code
 (Initialization of battery and fan motor lifespan)
 <Operation> Input F06 and press SET key to display '000' (Default).
 Change to '384' with  key and  key.
 Press SET key to memorize the value and revert to chamber temperature display. You can use all the function codes.
 <Cancel> Input F06 to display '384'.
 Change to '000' with  key and  key.
 Press SET key to memorize the value and revert to chamber temperature display.
 Turning the power on and off is another way is to change the display to '000'. It is not stored in non-volatile memory.
 <Reset of battery accumulation time>
 Step into F06 and input '384' for service code.
 Input '409' to initialize battery accumulation time.
 Unit reverts to chamber temperature display automatically.
 Service code is automatically cancelled after the reset.
 <Reset of fan motor accumulation time>
 Step into F06 and input '384' for service code.
 Input '410' to initialize fan accumulation time.
 Unit reverts to chamber temperature display automatically.
 Service code is automatically cancelled after the reset.
- F07: <Function> To match temperature in temp. sensor to 1/2 chamber air temperature (Zero adjustment of temp. sensor)
 <Operation> Input service code in F06 prior to the operation.
 Input F07 and press SET key to display '00.0' (Default).
 Change to your desired value with  key and  key.
 (Range: -4.9 ~ 04.9)
 Press SET key to memorize the value and revert to chamber temperature display.

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2.10.1

SELF DIAGNOSTIC FUNCTIONS

This unit has the self diagnostic functions shown below.

Self diagnostic	Situation	Indication	Alarm buzzer	Remote alarm
Sensor abnormality	2.10.11 If the thermal sensor is disconnected.	Alarm indicator blinks. E01 and chamber temp. are displayed alternately.	Intermittent tone	Alarm status
	If the thermal sensor is short-circuited.	Alarm indicator blinks. E02 and chamber temp. are displayed alternately.		
	2.10.12 If the defrost sensor 1 is disconnected.	Alarm indicator blinks. E03 and chamber temp. are displayed alternately.		
	If the defrost sensor 1 is short-circuited.	Alarm indicator blinks. E04 and chamber temp. are displayed alternately.		
	2.10.14 If the compressor sensor is disconnected.	Alarm indicator blinks. E05 and chamber temp. are displayed alternately.		
		If the compressor sensor is short-circuited.		
	If the ambient temp. sensor is disconnected.	Alarm indicator blinks. E07 and chamber temp. are displayed alternately.		
	If the ambient temp. sensor is short-circuited.	Alarm indicator blinks. E08 and chamber temp. are displayed alternately.		
	2.10.13 If the defrost sensor 2 is disconnected.	Alarm indicator blinks. E11 and chamber temp. are displayed alternately.		
		If the defrost sensor 2 is short-circuited.		
If the exclusive alarm sensor is disconnected.	Alarm indicator blinks. E13 and chamber temp. are displayed alternately.			
If the exclusive alarm sensor is short-circuited.	Alarm indicator blinks. E14 and chamber temp. are displayed alternately.			
Condenser temp. abnormality	In the event of failure of fan motor for cooling the compressor. When the ambient temperature exceeds the usable environmental condition, etc.	Alarm indicator blinks. E10 and chamber temp. are displayed alternately.	Intermittent tone	Alarm status
2.10.19 Battery check (with MPR-48B1)	When about 3 years have passed with the power supply cord connected to the outlet. (time to replace the battery)	F-1 and chamber temp. are displayed alternately.	---	---
Fan motor check	When about 6 years have passed with the power supply cord connected to the outlet. (time to replace the fan motor)	F-2 and chamber temp. are displayed alternately.	---	---
Setting check (with MPR-48B1)	When the battery switch is turned ON without setting after attachment.	E09 and chamber temp. are displayed alternately.	----	---

◇ The alarm status of remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER) since the remote alarm is not linked with alarm buzzer (The alarm buzzer is silenced). Refer to "Setting of alarm buzzer link mode" to link the remote alarm terminal with the alarm buzzer.

◇ The remote alarm terminal returns to the alarm status again after a certain period (ringback time) if the same alarm status continues, after cancel of alarm status of remote alarm terminal.

◇ The chamber temperature is controlled at about 5 °C by the defrost sensor if the thermal sensor is disconnected or short circuited.

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ALARM FUNCTIONS

This unit has the alarms functions shown below.

Alarms	Situation	Indication	Alarm buzzer	Remote alarm
2.10.2 High temp. alarm	If the chamber temp. is higher than the high temp. alarm setting. [page 17]	Alarm indicator blinks. Chamber temp. blinks.	Intermittent tone with 15 minutes delay.	Alarm status with 15 minutes delay.
2.10.9 Air circulation alarm	If the chamber temp. distribution gets worse (chamber temperature at upper area is high)	Alarm indicator blinks.	Intermittent tone with 15 minutes delay.	Alarm status with 15 minutes delay.
2.10.3 Low temp. alarm	If the chamber temp. is lower than the low temp. alarm setting. [page 18]	Alarm indicator blinks. Chamber temp. blinks.	Intermittent tone with 15 minutes delay.	Alarm status with 15 minutes delay.
2.10.10 0 °C alarm	If the chamber temp. is lower than 0 °C	Alarm indicator blinks. Chamber temp. blinks.	Intermittent tone	Alarm status.
Power failure alarm	At power failure. If the power supply cord is unplugged.	----	----	Alarm status.
Power failure alarm (with MPR-48B1)	At power failure. If the power supply cord is unplugged.	Alarm indicator blinks.	Intermittent tone	Alarm status.
2.10.4 Door alarm	When the door is open.	Door check indicator blinks.	Intermittent tone with 2 minutes delay.	---

◇ The alarm status of remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER) since the remote alarm is not linked with alarm buzzer (The alarm buzzer is silenced). Refer to "Setting of alarm buzzer link mode" to link the remote alarm terminal with the alarm buzzer.

◇ The remote alarm terminal returns to the alarm status again after a certain period (ringback time) if the same alarm status continues, after cancel of alarm status of remote alarm terminal.

Air circulation alarm

The alarm indicator blinks and the alarm buzzer sounds (after 15 minutes) when the sensor detects that the chamber temperature distribution is getting worse extremely. This may be caused by the block of cold air in the chamber due to the frost on the evaporator or stop of cooling fan motor.

◇ The air circulation is detected by the exclusive alarm sensor attached to the upper area of the chamber.

SAFETY FUNCTIONS

This unit has the safety functions shown below.

Safety	Situation	Indication, Buzzer	Safety operation
2.10.13 Over-heat protection	When the chamber temp. is higher than about 28 °C.	---	The defrost heater is OFF. Fan motor for cold air circulation is OFF. Reset when the chamber temp. is lower than about 18 °C.
2.10.14 Over-cool protection	When the chamber temp. is lower than about 0 °C.	---	Compressor is OFF. Reset when the chamber temp. is higher than 6 °C.
2.10.15 Auto-return	When there is no key pressing in setting mode for 90 seconds.	---	Finishing of setting mode and returning to temp. display mode.
2.10.6 Key lock	When the key lock is ON (L1).	---	Change of chamber temp. setting is disable.

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Control specifications

	MPR-1014	MPR-1014R
Temperature display ^{2.10.2}	Digital temperature display, green LED Display range: -9°C ~ +50°C (Unit: 1°C)	
Temperature set range	Temperature adjustment range: 2°C ~ 14°C Digital settings (Unit: 1°C)	
High-temperature alarm ^{2.10.9}	All digits flash on digital display ALARM lamp flashes, buzzer alarm with 15-minute delay Preset alarm temperature can be varied between set temp.+2°C and +14°C. (Default: Set temp. +5°C)	
Low-temperature alarm ^{2.10.3}	All digits flash on digital display ALARM lamp flashes, buzzer alarm with 15 minutes delay Preset alarm temperature can be varied between set temp.-2°C and -14°C. (Default: Set temp. -5°C)	
0°C alarm	When the chamber temperature is equal or lower than 0°C, ALARM lamp and chamber temperature blink with buzzer alarm.	
Door alarm	DOOR lamp is lit, buzzer alarm with 2 minutes delay.	
Remote alarm contact	Allowable contact capacity DC30V, Max. 2A When the alarming buzzer actives or power failure occurred, Open between COM. and N.C., Close between COM. and N.O. When you press BUZZER key to stop buzzer sounding, Open between COM. and N.O., Close between COM. and N.C.	
Self-diagnostic functions (Error codes) ^{2.10.1}	Temp. sensor disconnected (E1) and short circuited (E2) DEF sensor 1 disconnected (E3) and short circuited (E4) Comp. sensor disconnected (E5) and short circuited (E6) AT sensor disconnected (E7) and short circuited (E8) Battery setting check (E9) Compressor abnormal temperature (E10) DEF sensor 2 disconnected (E11) and short circuited (E12) Fan alarm sensor disconnected (E13) and short circuited (E14) Memorization of non-volatile memory is failed (E2P)	
Control panel	ALARM: Alarm indicator lamp DOOR: Door check lamp for door ajar BUZZER: Alarm buzzer stop key SET: Set key ▶▶ key: Scroll key ▲ key: Up arrow key	
Key lock functions	Press the ▶▶ key for around 5 seconds to be Key Lock available. L0: Unlock L1: Lock	

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INSTALLATION

1. After unpackaging

Remove all transportation packaging materials and tapes. Open the doors and ventilate the unit. If the outside panels are dirty, clean them with a diluted neutral dishwashing detergent.

✦ Undiluted detergent can damage the plastic components. For the dilution, refer to the instruction of the detergent.

✦ After the cleaning with the diluted detergent, always wipe it off with a wet cloth. Then wipe off the panels with a dry cloth.

Note:

Remove the cable tie banding the power supply cord. Prolonged banding may cause the corrosion of the cord coating.

2. Installing the unit

Extend the leveling feet by rotating them counterclockwise to separate 3 front casters from the floor. [Fig. 1]

And adjust the leveling foot to level the unit.

✦ The unit is installed firmly by separating the casters from the floor. The unit may be moved at the time of opening/closing the door if the casters contact with floor.

3. Fixing the unit

Fix the unit to the wall by using 2 back spacers [Fig. 2] and a rope or chain.

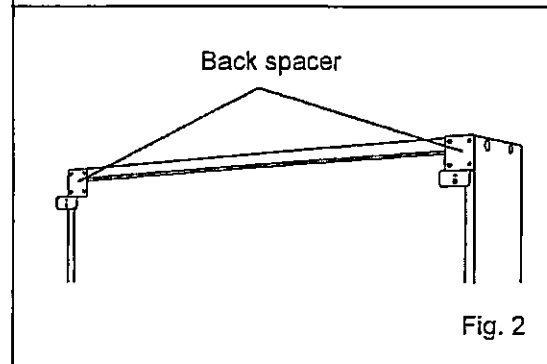
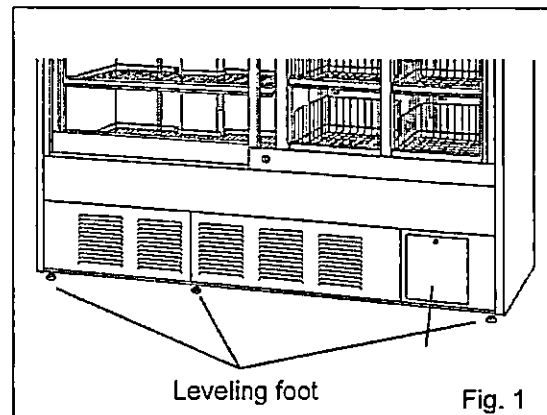
✦ The back spacers (which are also used to prevent the unit from toppling over) have a dual purpose: To provide a clearance between the unit and the wall behind it, and to prevent the unit toppling over.

4. Ground (earth) the unit

The ground (earth) is for preventing the electric shock in the case of the electrical insulation is somehow degraded. Always ground the unit at the time of installation.

✦ A 3-prong plug with grounding pole is provided to the power supply cord. There is no need for electric work for grounding.

✦ If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers.



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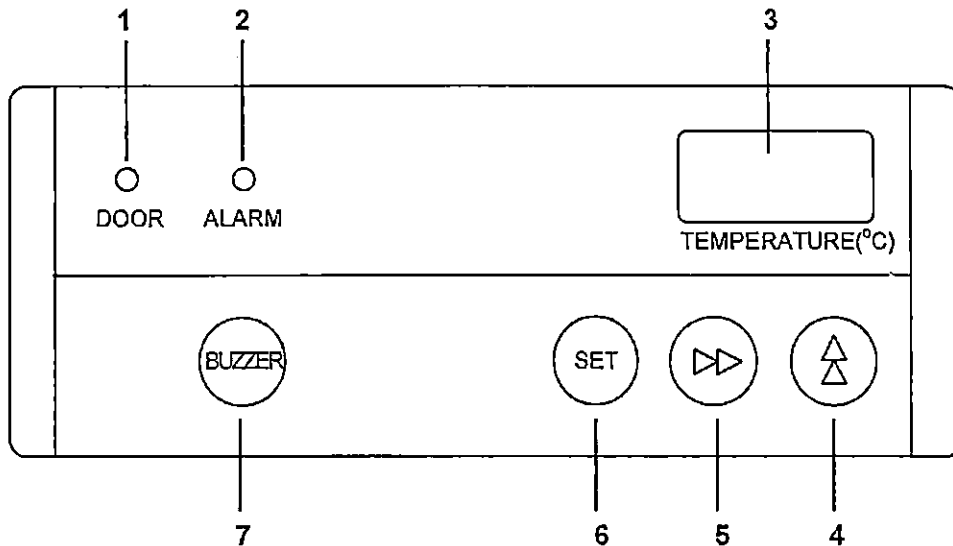
๓.ลงชื่อ.....กรรมการ

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REFRIGERATOR COMPONENTS

Control panel components



1. Door check indicator (DOOR): The red LED lamp is lit when the door is opened.

✦ 2 minutes after the door check indicator ON, the buzzer is activated to notice the door opening. [page 21]

2. Alarm indicator (ALARM): The red LED lamp blinks during an alarm condition. [page 24]

QAB

3. Temperature display: Normally shows the present chamber temperature and during an alarm condition, shows an error code. [page 25]

4. Up arrow key (▲):

At "temperature display mode"; pressing this key for more than 5 seconds leads setting mode.

At "setting mode"; increases number values between choices. [page 16 to page 22]

At "setting of lock function"; selects ON-OFF of key lock for chamber temperature setting. [page 17]

5. Scroll key (▶▶):

At "temperature display mode"; pressing this key for more than 5 seconds leads "setting of lock function". [page 17]

At "setting mode"; moves the operator through digit on the display. [page 16 to page 22]

6. Set key (SET):

At "temperature display mode"; pressing this key leads "chamber temperature setting mode".

At "setting mode"; stores the value into computer memory.

7. Alarm buzzer stop key (BUZZER): Mutes the audible alarm however, the audible alarm recovers after certain period (ringback time) if the same alarm status continues. [page 22]

Pressing this key during the power failure displays the chamber temperature for 5 seconds (with MPR-48B installed).

✦ "temperature display mode": the status which the temperature display shows the current chamber temperature

✦ "setting mode": the status which the temperature display is ready to be entered after pressing the up arrow key for 5 seconds.

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PERFORMANCE

Product name	Pharmaceutical Refrigerator MPR-1014				
Model number	MPR-1014-PT	MPR-1014-PA	MPR-1014-PB	MPR-1014-PK	MPR-1014-PE
Temperature control range	+2°C to +14°C				
Usable ambient temperature	-5°C to +35°C				
Noise level	42/44 dB (A scale) (50 Hz/60 Hz)				
Maximum pressure	2239 kPa				
Rated voltage	AC 110 V	AC 115 V	AC 220 V	AC 220 V	AC 220 V/230 V /240 V
Rated frequency	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Power consumption	350 W	350 W	320 W	335 W	320 W/325 W /335 W

Product name	Pharmaceutical Refrigerator MPR-1014R				
Model number	MPR-1014R-PT	MPR-1014R-PA	MPR-1014R-PB	MPR-1014R-PK	MPR-1014R-PE
Temperature control range	+2°C to +14°C				
Usable ambient temperature	-5°C to +35°C				
Noise level	42/44 dB (A scale) (50 Hz/60 Hz)				
Maximum pressure	2239 kPa				
Rated voltage	AC 110 V	AC 115 V	AC 220 V	AC 220 V	AC 220 V/230 V /240 V
Rated frequency	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Power consumption	350 W	350 W	320 W	335 W	320 W/325 W /335 W

- ◇ The above data is measured based on our internal basis.
- ◇ Design or specifications will be subject to change without notice.
- ◇ The unit with CE mark complies with EC directives.

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9. Function Mode

2.10.18

Function	Division
F01: Setting of high temp. alarm	General
F02: Setting of low temp. alarm	General
F03: Display of battery accumulation time	Service
F04: Setting of door alarm delay time	General
F06: Setting of service code (Initialization of battery and fan motor accumulation time)	Service
F07: Zero adjustment of temp. sensor	Service
F08: Zero adjustment of DEF sensor	Service
F12: Display of temperature in temp. sensor	Service
F13: Display of temperature in DEF sensor 1	Service
F14: Display of temperature in comp. sensor	Service
F15: Display of temperature in AT sensor	Service
F16: Display of temperature in fan alarm sensor	Service
F17: Change of model code (non-volatile memory initialization)	Service
F25: Setting of Ring back time	General
F30: Display of ROM version	Service
F32: Display of fan motor accumulation time	Service
F33: Setting of temperature to start defrosting	Service
F34: Setting of temperature to stop defrosting	Service
F36: Display of frequency of defrosting	Service
F38: Display of temperature in DEF sensor 2	Service
F39: Setting of air circulation alarm temperature	Service
F40: Setting of air circulation alarm	Service
F41: Linkage of high temp. alarm set temperature and air circulation alarm set temperature	Service
F42: Setting check of battery kit	General
F43: Notice of fan motor lifespan	Service
F50: Setting of temp. alarm delay time	Service

How to use function code

- 1) In chamber temperature display, press key for 5 seconds.
- 2) 'F00' is shown on temperature display.
Input your desired function code with key and key.
- 3) press SET key to be function code available.

Service code '384'

You cannot use the function modes specified as 'Service' in the above without input service code '384' prior to use.
Service code is cancelled by input '000' in F06 or turn the power off.

Description of function code

F01: <Function> Setting of high temp. alarm
<Operation> Input F01 and press SET key to display '005' (Default).
Change to your desired value with key and key
(Range:002~014)
Press SET key to memorize the value and revert to chamber temperature display.

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Specifications

Structural specifications

	MPR-1014	MPR-1014R
External dimensions	W1800 x D600 (58") x H1790 (mm)	
Internal dimensions	W1700 x D465 x H1300 (mm)	
Effective capacity	1033 L	1029 L
Exterior	Painted steel	
Interior	Stainless steel	
Doors	Sliding type, 2-layer pair glass with heat ray reflection film x 2	
Insulation	Rigid polyurethane foamed-in place	
Shelves	Hard steel wire on polyester coating x 10 Allowable load; 50kg / shelf	Hard steel wire on polyester coating x 5 Allowable load; 50kg / shelf
Drawers	-----	Hard steel wire on polyester coating x 10 Allowable load; 20kg/drawer
Lock	Cylinder key: 1	
Access port	φ 30 mm in 1 location (left side)	
Casters (2.12)	4	
Wall stops	2 (also serving as anti-tip brackets)	
Weight	246 kg	258 kg
Accessories	1 set of key, 2 anchor bolts, 20 shelf stoppers, 10 shelves	1 set of key, 2 anchor bolts, 20 shelf stoppers, 5 shelves, 10 drawers
Optional components	Automatic temperature recorder (MTR-0621LH), Recorder mounting kit (MPR-S30), Automatic temperature recorder (MTR-G04A for 110~120V) Automatic temperature recorder (MTR-G04C for 220~240V), Recorder mounting kit (MPR-S7) Battery kit for power failure alarm (MPR-48B)	

* The dimension in () shows the projected dimension.

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REMOTE ALARM TERMINAL

The alarm status is noticed to a remote location when a remote alarm equipment (commercial item) is connected to the remote alarm terminal. It is recommended to install a remote alarm equipment (commercial item) when the refrigerator is installed in a desolate location so that an alarm status is noticed to an operator.

- ✦ Contact our representative or agent for the installation of a remote alarm equipment (commercial item).
 - Location of remote alarm terminal: rear lower left
 - Allowable contact capacity: DC 30 V, 2 A

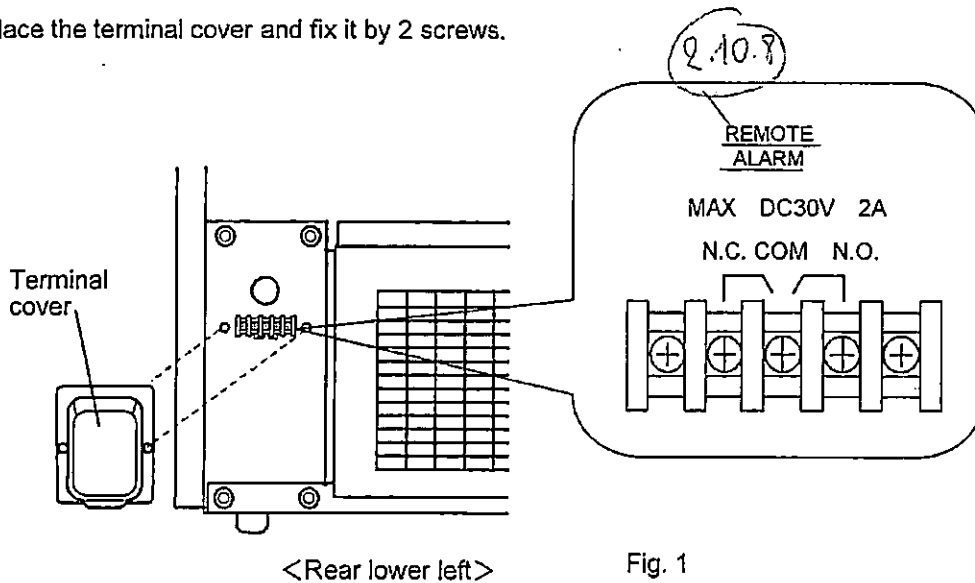
The alarm status of remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER) since the remote alarm is not linked with alarm buzzer (The alarm buzzer is silenced).

✦ The remote alarm terminal returns to the alarm status again after a certain period (ringback time) if the same alarm status continues, after cancel of alarm status of remote alarm terminal.

The remote alarm terminal is in alarm status when the power supply cord is unplugged because it is regarded as a power failure. In this case, the alarm status of remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER).

Connection of remote alarm terminal

1. Remove the terminal cover at rear lower left of the cabinet by unscrewing 2 screws. [Fig. 1]
2. Connect the lead wire of a remote alarm equipment (commercial item) to the terminal.
 - ✦ It is recommended to use cables with a maximum length of 30 meters.
3. Replace the terminal cover and fix it by 2 screws.



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ASADORN

AVP01AL

เครื่องป้องกันไฟตก ไฟเกิน และกันฟ้าผ่า ASADORN



รับประกัน 1 ปี



ไฟเกิน

เครื่องใช้ไฟฟ้าเสียหายเนื่องจากแรงดันไฟเกิน

ไฟตก

มอเตอร์และคอมเพรสเซอร์ไม่หมุน เกิดความร้อนและไหม้
เครื่องใช้ไฟฟ้าไม่ทำงาน

ไฟติดๆดับๆ

เครื่องใช้ไฟฟ้าเสียหายเพราะแรงดันไฟไม่คงที่ กระชาก คอมเพรสเซอร์เสีย



อุบัติเหตุแรงดันไฟฟ้าตามอาคาร บ้านพักอาศัยหรือสำนักงานต่างๆ ในประเทศนั้นจะมีแรงดันไฟฟ้าอยู่ที่ 220-250 โวลต์แต่หากแรงดันไฟฟ้าที่จ่ายไปยังเครื่องใช้ไฟฟ้าเกิดต่ำกว่า หรือสูงเกินค่าปกติเนื่องจากระบบสายส่ง กำลังขัดข้อง หรือสาเหตุอื่นๆ อาจทำให้เครื่องใช้ไฟฟ้าของท่านเสียหายได้ เช่น ตู้แช่ ตู้เย็น ปืนน้ำ เครื่องปรับอากาศ โทรทัศน์ เครื่องซักผ้า จักรเย็บผ้า เตาไมโครเวฟ เครื่องใช้ไฟฟ้าอื่นๆ และเครื่องมือเฉพาะทาง เช่น เครื่องมือแพทย์ เครื่องมือทดลองทางวิทยาศาสตร์ เครื่องส่งวิทยุชุมชน เครื่องป้องกันนี้ จะสามารถปกป้องความเสียหาย ที่อาจเกิดขึ้นกับเครื่องใช้ไฟฟ้าของท่านได้

คุณสมบัติทั่วไป Automatic Voltage Protector รุ่น AVP01AL

- ป้องกันแรงดันไฟฟ้าต่ำกว่า 175V หรือสูงกว่า 270V
- มีระบบหน่วงเวลา (Auto Restart) 5 วินาที และ 3 นาที ก่อนกลับมาทำการจ่ายไฟปกติแบบอัตโนมัติอีกครั้ง
- รองรับกระแสไฟฟ้สูงถึง 10 แอมป์ (2,200 วัตต์)
- ใช้งานง่ายแบบมีปลั๊กเสียบ สามารถใช้งานได้ทันทีไม่ต้องติดตั้งให้ยุ่งยาก เป็นสายไฟแบบ 3 ปลั๊ก มีกราวด์ (สายดิน)
- มีวงจรป้องกันแรงดันไฟฟ้ากระชาก ไฟไม่เรียบ และฟ้าผ่าทางสายไฟฟ้า

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COPY



Japan Audit and Certification Organization
for Environment and Quality



MS
CM021

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PHC Manufacturing Group

2-38-5, Nishishimbashi, Minato-ku, Tokyo, Japan

CERTIFICATE

Certificate No.: EC97J1224

43

ISO 14001:2015 • JIS Q 14001:2015

Development, design and manufacture of In Vitro Diagnostic Devices,
Laboratory and Medical Support Devices

Our organization certifies above organization to be complied with
the requirement of indicated above management system

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Japan Audit and Certification Organization
for Environment and Quality
2-2-19 Akasaka, Minato-ku, Tokyo, Japan

Registration Date :10/Mar/1998
Recertification Date:07/Feb/2021
Issue Date :08/Jan/2021
Certificate Expiry :06/Feb/2024

President
& CEO

H. Omodera

THANES DEVELOPMENT CO., LTD.

To be used in conjunction with attached Appendix

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ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ 認證書 ◆



Product Service

Certificate

No. Q5 003951 0003 Rev. 01

Holder of Certificate: PHC Corporation
1-1-1 Sakada, Oizumi-machi
Ora-gun, Gunma
370-0596 JAPAN

Certification Mark:



Scope of Certificate: Design and Development, Production, and Distribution of Freezers, Refrigerators, Incubators, and Drying and Sterilizing Equipments for Medical Use

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a quality management system, which meets the requirements of the listed standard(s). All applicable requirements of the testing and certification regulation of TÜV SÜD Group have to be complied with. For details and certificate validity see: www.tuvsud.com/ps-cert?q=cert:Q5 003951 0003 Rev. 01

Report No.: JA1609706
Valid from: 2021-07-04
Valid until: 2024-07-03

Date, 2021-06-25

Christoph Dicks
Head of Certification/Notified Body

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ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ 認 證 書 ◆ CERTIFICATE ◆ ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆



Certificate

No. Q5 003951 0003 Rev. 01

Applied Standard(s): ⁽⁴²⁾ EN ISO 13485:2016
Medical devices - Quality management systems -
Requirements for regulatory purposes
(ISO 13485:2016)
DIN EN ISO 13485:2016

Facility(ies): PHC Corporation Biomedical Division
1-1-1 Sakada, Oizumi-machi, Ora-gun, Gunma, 370-0596
JAPAN

Design and Development, Production of Freezers, Refrigerators,
Incubators, and Drying and Sterilizing Equipments for Medical use

PHC Corporation Biomedical Division
2-38-5 Nishishimbashi, Minato-ku, Tokyo, 105-8433
JAPAN

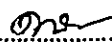
Distribution of Freezers, Refrigerators, Incubators, and Drying and
Sterilizing Equipments for Medical use

-/-

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1st April 2022

To whom it may concern,

Manufacturer Certificate

44

We, SciMed (Asia) Pte Ltd, a consolidated subsidiary of PHC Group, PHC Corporation located at 2-38-5, Nishishimbashi, Minato-ku, Tokyo 105-8433, Japan, who are established and reputable manufacturer of PHCbi brand biomedical products (hereinafter referred to as the "Products"), authorize

THANES DEVELOPMENT CO., LTD.

61/34 Soi Amornphan 4 (Viphavadee 42), Viphabadee Rangsit Road, Lad-Yao Chatuchak, Bangkok 10900, Thailand

to submit a bid, to import for the purpose of providing the Products listed in Annex A, and to negotiate then to sign the contract subsequently.

We hereby extend our full guarantee and warranty with respect to the Products offered by the above firm to the extent of the terms and conditions of the Distributorship Agreement between the firm and us which is effective as of this 1st April 2022.

This document is valid till 31st March 2023, and we will negotiate renewal of this certificate prior to the expiration date.

Yours truly,



Kenshi Komoto
General Manager
Export Department
SciMed (Asia) Pte Ltd – A member of PHC Group

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196 PANDAN LOOP PANTECH BUSINESS HUB 07-11 SINGAPORE 128384

Co. Reg: 199200104H

Tel: (65) 6779 3388

Fax: (65) 6266 9086

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บริษัท ธเนศพัฒน จำกัด



Annex A

14

The Products

The "Products" shall mean the following:

- Ultra-Low Temperature Freezers
- Biomedical Freezers
- Pharmaceutical Refrigerators
- Blood Bank Refrigerators
- CO2 Incubators / Multi-Gas Incubators
- Heated Incubators
- Cooled Incubators
- Plant Growth Chambers

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www.scimed.com.sg

THANES DEVELOPMENT CO.,LTD.
บริษัท ธเนศพัฒนา จำกัด



1st April, 2021

To whom it may concern,

4.4

Manufacturer Certificate

We, SciMed (Asia) Pte Ltd, a consolidated subsidiary of PHC Group, PHC Corporation located at 2-38-5, Nishishimbashi, Minato-ku, Tokyo 105-8433, Japan, who are established and reputable manufacturer of PHCbi brand biomedical products (hereinafter referred to as the "Products"), authorize

THANES DEVELOPMENT CO., LTD.

61/34 Soi Amornphan 4 (Viphavadee 42), Viphavadee Rangsit Road, Lad-Yao Chatuchak, Bangkok 10900, Thailand

to submit a bid, to import for the purpose of providing the Products listed in Annex A, and to negotiate then to sign the contract subsequently.

We hereby extend our full guarantee and warranty with respect to the Products offered by the above firm to the extent of the terms and conditions of the Distributorship Agreement between the firm and us which is effective as of this 1st April, 2021.

This document is valid till 31st March, 2022, and we will negotiate renewal of this certificate prior to the expiration date.

Yours truly,

Kenshi Komoto
General Manager
Export Department
SciMed (Asia) Pte Ltd – A member of PHC Group

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์
๑.ลงชื่อ.....ประธานกรรมการ
๒.ลงชื่อ.....กรรมการ
๓.ลงชื่อ.....กรรมการ

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒนา จำกัด

196 PANDAN LOOP PANTECH BUSINESS HUB 07-11 SINGAPORE 128394

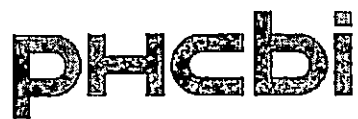
Co. Reg: 192200104H

Tel: (65) 6779 3388

Fax: (65) 6256 3086

www.scimed.com.sg

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒนา จำกัด



Annex A

The Products

The "Products" shall mean the following:

- Ultra-Low Temperature Freezers
- Biomedical Freezers
- Pharmaceutical Refrigerators
- Blood Bank Refrigerators
- CO2 Incubators / Multi-Gas Incubators
- Heated Incubators
- Cooled Incubators
- Plant Growth Chambers
- Autoclaves

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์

๑.ลงชื่อ.....ประธานกรรมการ/

๒.ลงชื่อ.....กรรมการ

๓.ลงชื่อ.....กรรมการ

THANES DEVELOPMENT CO.,LTD.
บริษัท ธเนศพัฒนา จำกัด

196 PANDAN LOOP PANTECH BUSINESS HUB 07-11 SINGAPORE 128394

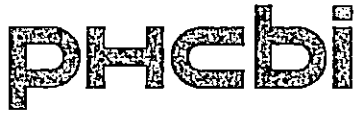
Co. Reg: 192200104H

Tel: (65) 6779 3388

Fax: (65) 6266 3086

www.scimed.com.sg

THANES DEVELOPMENT CO.,LTD.
บริษัท ธเนศพัฒนา จำกัด



PHC Corporation
 2-38-5 Nishishimbashi, Minato-ku, Tokyo
 105-8433, Japan
 Tel. +81-3-5408-7290
 www.phcnd.com

1st April, 2020

To whom it may concern,

(4.4)

Manufacturer Certificate

We, PHC Corporation, located at 2-38-5 Nishishimbashi, Minato-ku, Tokyo 105-8433, Japan, who are established and reputable manufacturer of PHCbi brand biomedical products (hereinafter referred to as the "Products"), authorize

THANES DEVELOPMENT CO., LTD.

61/34 Soi Amornphan 4 (Viphavadee 42), Viphabadee Rangsit Road, Lad-Yao Chatuchak, Bangkok 10900, Thailand

to submit a bid, to import for the purpose of providing the Products listed in Annex A, and to negotiate then to sign the contract subsequently.

We hereby extend our full guarantee and warranty with respect to the Products offered by the above firm to the extent of the terms and conditions of the Distributorship Agreement between the firm and us made and entered into as of this 1st April, 2020.

This document is valid till 31st March, 2021, and we will negotiate renewal of this certificate prior to the expiration date.

Yours truly,

MAR. 9. 2020

Tomoki Koizumi / Senior Manager
 Sales Operations Group, Marketing Department
 Biomedical Division
 PHC Corporation

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์

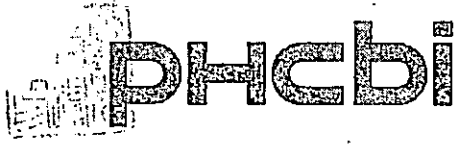
๑. ลงชื่อ..... ประธานกรรมการ

๒. ลงชื่อ..... กรรมการ

๓. ลงชื่อ..... กรรมการ

THANES DEVELOPMENT CO., LTD.
 บริษัท ธเนศพัฒนา จำกัด

THANES DEVELOPMENT CO., LTD.
 บริษัท ธเนศพัฒนา จำกัด



PHC Corporation
 2-38-5 Nishishimbashi, Minato-ku, Tokyo
 105-8433, Japan
 Tel +81-3-5408-7250
 www.phc.co.jp

Annex A

The Products

The "Products" shall mean the following:

- Ultra-Low Temperature Freezers
- Biomedical Freezers
- Pharmaceutical Refrigerators
- Blood Bank Refrigerators
- CO2 Incubators / Multi-Gas Incubators
- Heated Incubators
- Cooled Incubators
- Climate Chambers
- Autoclaves

Handwritten mark

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์

๑. ลงชื่อ..... *[Signature]* ประธานกรรมการ

๒. ลงชื่อ..... *[Signature]* กรรมการ

๓. ลงชื่อ..... *[Signature]* กรรมการ

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒนา จำกัด
Handwritten mark

Handwritten mark

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒนา จำกัด



PHC Corporation
 2-38-5 Nishishimbashi, Minato-ku, Tokyo
 105-8433, Japan.
 Tel. +81-3-5408-7290
 www.phc.co.jp

1st April, 2019

To whom it may concern,

4.4

Manufacturer Certificate

We, PHC Corporation, located at 2-38-5 Nishishimbashi, Minato-ku, Tokyo 105-8433, Japan, who are established and reputable manufacturer of PHCbi brand biomedical products (hereinafter referred to as the "Products"), authorize

THANES DEVELOPMENT CO., LTD

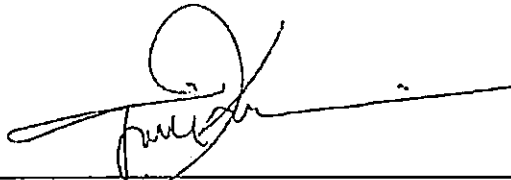
61/34 Soi Amornphan 4 (Viphavadee 42), Viphavadee Rangsit Road, Lad-yao, Chatuchak, Bangkok 10900, Thailand,

to submit a bid, to import for the purpose of providing the Products listed in Annex A, and to negotiate then to sign the contract subsequently.

We hereby extend our full guarantee and warranty with respect to the Products offered by the above firm.

This document is valid till 31st March, 2020, and we will negotiate renewal of this certificate prior to the expiration date.

Yours truly,



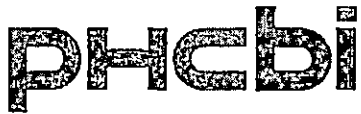
Tomoki Koizumi / Senior Manager
 Sales Operations Group, Marketing Department
 Biomedical Division
 PHC Corporation

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์
 ๑.ลงชื่อ..... ประธานกรรมการ
 ๒.ลงชื่อ..... กรรมการ
 ๓.ลงชื่อ..... กรรมการ

THANES DEVELOPMENT CO.,LTD.
 บริษัท ธเนศพัฒนา จำกัด



THANES DEVELOPMENT CO.,LTD.
 บริษัท "ธเนศพัฒนา" จำกัด



PHC Corporation

2-38-5 Nishishimbashi, Minato-ku, Tokyo
105-8433, Japan
Tel. +81-3-5408-7290
www.phcnd.com

Annex A

The Products

The "Products" shall mean the following:

- Ultra-Low Temperature Freezers
- Biomedical Freezers
- Pharmaceutical Refrigerators
- Blood Bank Refrigerators
- CO2 Incubators / Multi-Gas Incubators
- Heated Incubators
- Cooled Incubators
- Plant Growth Chambers

the

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์

๑.ลงชื่อ.....ประธานกรรมการ

๒.ลงชื่อ.....กรรมการ

๓.ลงชื่อ.....กรรมการ

THANES DEVELOPMENT CO., LTD.

บริษัท

W

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒน จำกัด



PHC Corporation
 2-38-5 Nishishimbashi, Minato-ku, Tokyo
 105-8433, Japan
 Tel. +81-3-5408-7290
 www.phchd.com

2nd April, 2018

To whom it may concern,

Manufacturer Certificate

4.4

We, PHC Corporation, located at 2-38-5 Nishishimbashi, Minato-ku, Tokyo 105-8433, Japan, who are established and reputable manufacturer of PHCbi biomedical products authorize THANES DEVELOPMENT CO., LTD, 61/34 Soi Amornphan 4 (Viphavadee 42), Viphavadee Rangsit Road, Lad-yao, Chatuchak, Bangkok 10900, Thailand, to submit a bid and import for the purpose of providing the following Products, manufactured by us as listed in Annex A (hereinafter referred to as the "Products"), and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty with respect to the Products offered by the above firm.

This document is valid till 31st March, 2019, and will start to negotiate renewal of this certificate prior to the expiration date.

Yours truly,

Tomoki Koizumi
 Senior Manager
 Asia Business Development Group, Marketing Department
 Biomedical Division
 PHC Corporation

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์
 ๑.ลงชื่อ.....ประธานกรรมการ
 ๒.ลงชื่อ.....กรรมการ
 ๓.ลงชื่อ.....กรรมการ

THANES DEVELOPMENT CO.,LTD.
 บริษัท ธเนศพัฒนา จำกัด

THANES DEVELOPMENT CO.,LTD.
 บริษัท ธเนศพัฒนา จำกัด



PHC Corporation

2-38-8 Nishishimbashi, Minato-ku, Tokyo
105-8433, Japan
Tel. +81-3-5408-7290
www.phchd.com

Annex A

The Products

The "Products" shall mean the following products:

- Ultra-Low Temperature Freezers
- Biomedical Freezers
- Pharmaceutical Refrigerators
- Blood Bank Refrigerators
- CO2 Incubators / Multi-Gas Incubators
- Heated Incubators
- Cooled Incubators
- Plant Growth Chambers
- Autoclaves

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์

๑. ลงชื่อ..... ประธานกรรมการ

๒. ลงชื่อ..... กรรมการ

๓. ลงชื่อ..... กรรมการ

THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด

๑๖

THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด

Certificate of Attendance

This is to certify that

(19)

Sornchai Mangkhachot

Thanes Development Co., Ltd.

has successfully completed the

Panasonic Healthcare Service Training Course

(The categories of Training for Refrigerators, Freezers, Ultra-Low Freezers and Incubators)

From 6th Dec 2016 till 8th Dec 2016



Course Trainer

Jack Lee

Technical Service Manager

Panasonic Healthcare Singapore

Biomedical Business Unit

CS Service Group

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์

๑. ลงชื่อ..... ประธานกรรมการ

๒. ลงชื่อ..... กรรมการ

..... กรรมการ

THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด

THANES DEVELOPMENT CO., LTD.

บริษัท ธนพัฒน์ จำกัด

PHCS/CS04-1

414

Panasonic

Mr. Sornchai Mangkhachot

THANES DEVELOPMENT CO., LTD.

The engineer went through

PANASONIC BIOMEDICAL
EQUIPMENTS TRAINING

Held in Singapore from 25th to 27th September, 2012

Certificate awarded on 27th September, 2012

Y. Sakata

Y. Sakata (Group Manager)
Panasonic Healthcare Co., Ltd.
Biomedical Business Unit
Quality Assurance Group

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์
๑. ลงชื่อ..... ประธานกรรมการ
๒. ลงชื่อ..... กรรมการ
๓. ลงชื่อ..... กรรมการ

THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด

in

THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด

Sornchai Mangkhachot

(Thanes Development Co., Ltd)

has successfully completed the

Life Science Equipment SERVICE TRAINING COURSE

4.4

of training for Dry Heat Sterilization CO₂ Incubator, TwinGuard Ultra-Low Temperature Freezer

Certificate awarded on **1st Aug 2018**



Course Trainer
Philip Ng
Technical Service Manager
PHC Corporation Singapore

THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด



THANES DEVELOPMENT CO., LTD.
บริษัท ธนพัฒน์ จำกัด

Mr. Sornchai Mangkhachot

THANES DEVELOPMENT CO., LTD.

has successfully completed the
Life Sciences Equipment
SERVICE TRAINING COURSE

4.9

The categories of training for Ultra-Low Temperature Freezer, and CO2 Incubator
Certificate awarded on 26th July, 2019

PT ๖ ๕๕ 34

Atsuhiko Noguchi
General Manager
Life Science CS Department
Biomedical Division
PHC Corporation

คณะกรรมการพิจารณาผลการประกวดราคาอิเล็กทรอนิกส์
1. ลงชื่อ.....ประธานกรรมการ
2. ลงชื่อ.....กรรมการ
3. ลงชื่อ.....กรรมการ

THANES DEVELOPMENT CO., LTD.
บริษัท ธารนตพัฒนา จำกัด

THANES DEVELOPMENT CO., LTD.
บริษัท ธารนตพัฒนา จำกัด



ธนาคารกรุงไทย
KRUNG THAI BANK PUBLIC COMPANY LIMITED

สาขาสุขุมวิท 71
ธนาคารกรุงไทย จำกัด (มหาชน)
446/19-21 อาคารปาร์คโอเวเนีย ชั้น 2 ต.สุขุมวิท
แขวงพระโขนงเหนือ เขตวัฒนา
กรุงเทพมหานคร 10110

บัญชีเงินฝากกระแสรายวัน

แผนที่ 1
สาขา สาขาสุขุมวิท 71
เลขที่บัญชี 077-6-00271-6
วันที่
สกุลเงิน THB

ผู้รับ ชเนกพัฒนา จำกัด
61/34 ซอย.อมรพันธ์ 4 (วิภาวดี 42)
ถนน.วิภาวดีรังสิต แขวงลาดยาว
เขตจตุจักร
กรุงเทพมหานคร 10900

** ขอรับรองว่า บัญชีดังกล่าวนี้ ยังมีการเคลื่อนไหวบัญชีอยู่จริง **

สำเนาถูกต้อง

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒนา จำกัด

THANES DEVELOPMENT CO., LTD.
บริษัท ธเนศพัฒนา จำกัด
n