Specifications

Specifications	Model No.		
115 V, 60 Hz	MIR-154-PA	MIR-254-PA	—
220 V, 60 Hz	MIR-154-PK	MIR-254-PK	MIR-554-PK
220 V—240 V, 50 Hz (CE)	MIR-154-PE	MIR-254-PE	MIR-554-PE
External dimensions (W x D x H)*1	700 x 580 x 1018 (mm) 27.6 x 22.8 x 40.1 (inch)	700 x 580 x 1618 (mm) 27.6 x 22.8 x 63.7 (inch)	800 x 832 x 1810 (mm) 31.5 x 32.8 x 71.3 (inch)
Internal dimensions (W x D x H)	620 x 368 x 555 (mm) 24.4 x 14.5 x 21.9 (inch)	620 x 368 x 1088 (mm) 24.4 x 14.5 x 42.8 (inch)	640 x 550 x 1160 (mm) 25.2 x 21.7 x 45.7 (inch)
Effective capacity	123 liters (4.3 cu.ft.)	238 liters (8.4 cu.ft.)	406 liters (14.3 cu.ft.)
Exterior finish	Galvanised steel with baked-on finish		
Interior finish	Stainless steel		
Door	Galvanised steel with baked-on finish, triple-pane glass		Galvanised steel with baked-on finish, triple-pane glass with observation door
Shelves	Polyethylene coated steel wire, adjustable		
	3	5	5
Insulation	Foamed-in-place rigid polyurethane		
Circulation system	Forced air circulation		
Compressor	Hermetic type		
	Single phase, Output 150 W	Single phase, Output 250 W	Single phase, Output 250 W
Evaporator	Fin and tube type, forced circulation		
Condenser	Wire and tube type natural air cooling system		
Defrosting system	Manual / Automatic		
Heater	Cord heater 141 W	Cord heater 218 W	Cord heater 322 W
Temperature setting indication	Digital setting with keylock, digital display		
Temperature control	Microprocessor PID system (when compressor operates, ON-OFF control)		
Temperature sensor	Thermistor		
Automatic setting temperature alarm	When temperature deviates more than ±1.0˚C to ±5.0˚C, visual and audible alarm		
Over temperature protection device	Visual and audible alarm		
Programmed operation	12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.		
Temperature range	−10˚C to +60˚C (Ambient temperature: +5˚C to +35˚C, no load)		
Temperature fluctuation	±0.2 degrees at Heater PID control (SV 50˚C, Ambient temperature: 20˚C, no load)		
	±1.5 degrees at Compressor ON-OFF control (SV 5˚C, Ambient temperature: 20˚C, no load)		
Temperature uniformity	±0.5 degrees (Setting temperature 37˚C, Ambient temperature 20˚C, no load)		
Interior lamp	15 W x 1, Fluorescent lamp (Setting temperature -10˚C to 60˚C)		
Net weight	78 kg (172.0 lbs.)	108 kg (238.1 lbs.)	195 kg (429.9 lbs.)
Accessories	—	—	Key 1 set

Caution: PHC Corporation guarantees the product under certain warranty conditions. PHC Corporation is in no way shall be responsible for any loss of content or damage to content.
• 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
• Stacking plate: **MIR-S154SB-PW** (for MIR-154)
• Padlock bracket: **MIR-LP-PW** (for MIR-154 & 254)
• Light add on kit: **MIR-L15-PE, MIR-L15-PK, MIR-L15-PA**
  Note: When the MIR-L15 is installed, the illumination lamps will automatically turn off at temperatures outside the +2˚C to +50˚C range.
• Inner doors: **MIR-55ID-PW** (for MIR-554) *The chamber temperature is limited below +50˚C.
• Glass protect plate: **MIR-154BP-PW** (for MIR-154)/**MIR-254BP-PW** (for MIR-254)
• Interface board (For data acquisition system MTR-5000 users only) **MTR-L03-PW** or **MTR-480-PW**

Dimensions
Unit : mm (inch)
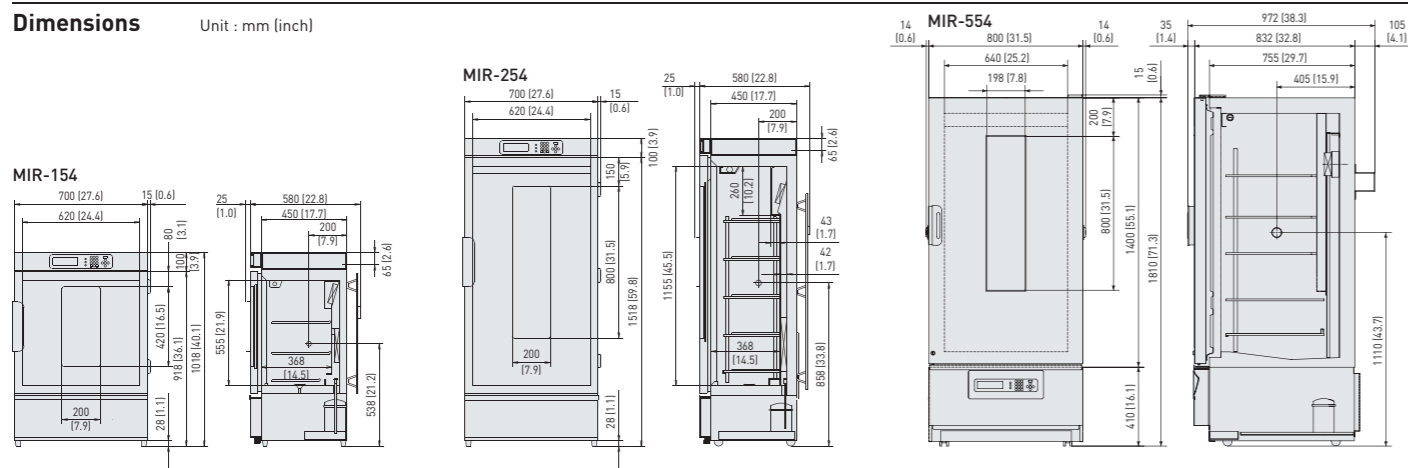
MIR-154

MIR-254

MIR-554

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https://www.phchd.com/global/biomedical/
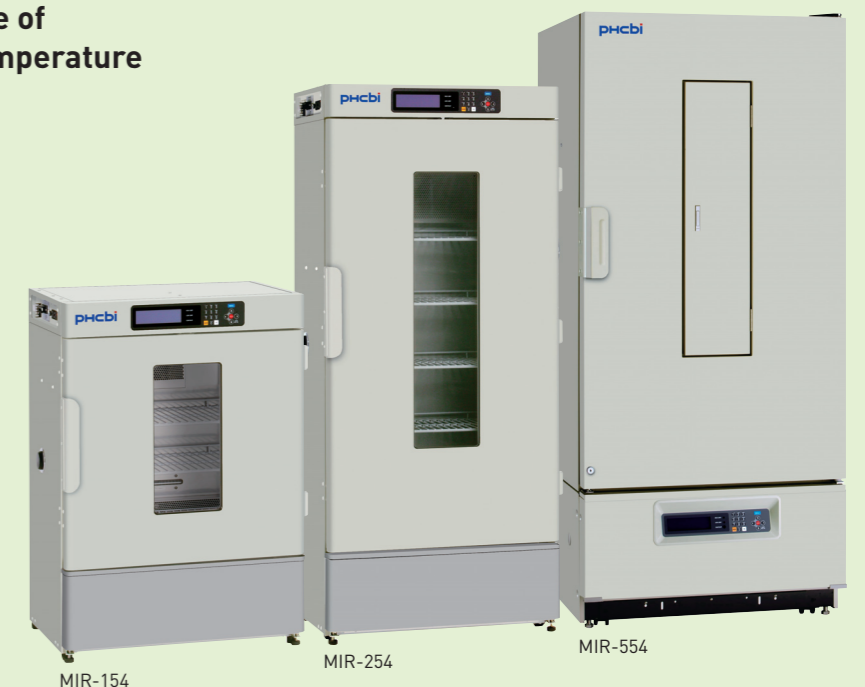Printed in Japan   4101-2018-04-CC

PHCBI

Cooled Incubators
MIR-154/MIR-254/MIR-554

Incubation

Cooled Incubators

Versatile incubators meet a wide range of experimental needs with expanded temperature control range and enhanced functions

MIR-154

MIR-254

MIR-554

Life Science Innovator Since 1966

PHC Corporation, Biomedical Division

PHCbi's MIR series incubators have been recognised as exceptional units suitable for a wide range of applications. The wide variety of temperatures and lighting patterns that are essential in biological research and environmental studies can now be accurately reproduced and controlled.

MIR-154
Effective capacity:
123 liters
(4.3 cu.ft.)

MIR-254
Effective capacity:
238 liters
(8.4 cu.ft.)

MIR-554
Effective capacity:
406 liters
(14.3 cu.ft.)

Performance Data

MIR-154

Chamber pull-down/pull-up characteristics
(Ambient temperature 20°C Power source: AC 100 V/50 Hz)

Ambient temperature 20°C

Pull-down characteristics for thermal load in chamber
(Ambient temperature 35°C Power source: AC 100 V/50 Hz)

Ambient temperature 35°C
Chamber thermal load 120 W
Chamber thermal load 75 W

MIR-254

Chamber pull-down/pull-up characteristics
(Ambient temperature 20°C Power source: AC 100 V/50 Hz)

Ambient temperature 20°C

Temperature pull-down characteristics for thermal load in chamber
(Ambient temperature 35°C Power source: AC 100 V/50 Hz)

Ambient temperature 35°C
Chamber thermal load 225 W
Chamber thermal load 75 W

MIR-554

Chamber pull-down/pull-up characteristics
(Ambient temperature 20°C Power source: AC 100 V/50 Hz)

Ambient temperature 20°C

Temperature pull-down characteristics for thermal load in chamber
(Ambient temperature 35°C Power source: AC 100 V/50 Hz)

Ambient temperature 35°C
Chamber thermal load 300 W
Chamber thermal load 200 W
Chamber thermal load 100 W

*The data shown above are taken with the fluorescent lamp off.
*Characteristics may vary depending on the product or operating conditions.

Improved Experimentation of Repetitive Operation and Operability

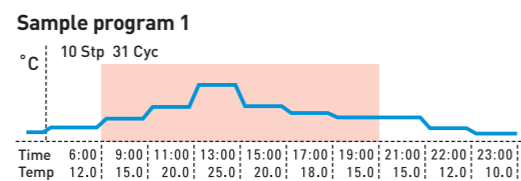### Programmable Operation Function with Microprocessor Control

Combining flexible Temperature (H), Light ON/OFF (L) and Time control (T), a maximum 12-step plus constant operation or max. 12-step repeating operation can be programmed according to the experimentation requirements. A program can be set to repeat for a minimum of one time to a maximum of 98 times or continuous repeat.

Program input is simple and the incubator accommodates a range of diversified experimentation requirements, proving ideal for experimentation during night time and holidays, experimentation that requires settings to be changed, microorganism culture and preservation.

The new MIRs also offer the choice of timer mode, 24-hour Clock mode and Timer mode to suit user experiments. Up to 10 programs can be stored for convenient retrieval and set-up of frequently run experiments. Individual programs can be combined using the Join function. Constant operation mode without step operation is also available.
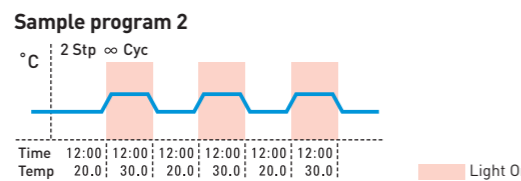
Sample program 1
24-hour Clock mode
10 steps, cycle: 31 times

This is one cycle consisting of 10 steps, which is repeated 31 times in this program. (Max. is 98 cycles or continuous repeat) At program start, select "Clock mode" on the running mode screen.

Sample program 1

°C 10 Stp 31 Cyc

Time	6:00	9:00	11:00	13:00	15:00	17:00	19:00	21:00	22:00	23:00
Temp	12.0	15.0	20.0	25.0	20.0	18.0	15.0	15.0	12.0	10.0

Sample program 2
Timer mode
2 steps, cycle: Continuous repeat

This is one cycle consisting of 2 steps, which is repeated continuously in this program. (Max. is 98 cycles or continuous repeat) At program start, select "Timer mode" on the running mode screen.

Sample program 2

°C 2 Stp ∞ Cyc

Time	12:00	12:00	12:00	12:00	12:00	12:00
Temp	20.0	30.0	20.0	30.0	20.0	30.0

Light On

Control panel

Graphic LCD
Character input keys
Selection & Enter keys
MENU button
Light ON/OFF button

High-precision Temperature Environment

Wide Temperature Control Range from -10°C to +60°C

With a wide temperature range from -10°C to +60°C, PHCbi Cooled Incubators allow a full range of precise experiments including environmental tests to microorganism cultures and plant germination tests.

Precise Microprocessor Temperature Control

PHCbi Cooled Incubators incorporate a high precision microprocessor temperature control combined with a heater PID and compressor ON-OFF system.

Intuitive Operation with New LCD Display

- Easy operability with LCD display and pop up menu
- 24-hour Clock mode and Timer mode are selectable.
- Combination of multiple programs in Join function
- Programmable operation start date and hour
- Operation data can be auto-recorded and graphically displayed.
- Data can be sent to PC using optional communication interface board (MTR-480)
- Chamber Light ON-OFF control

Condensation Prevention

A humidity reduction mode helps reduce inner chamber condensation that may occur during high temperature operation.

Alarm and Security System to Protect Sample Safety

Prevents Medium from Dessication
(MIR-154, MIR-254 only)

A DC fan is designed to be aimed obliquely upward to prevent direct air flow contacting samples. This reduces medium drying by approx. 50 % in MIR-154, and by approx. 15 % in MIR-254.

Meticulous Design for Comfortable Operation

New MIRs are crafted with a comfortable rounded corner design and offer a reversible door for a choice of left- or right-hand door opening. Low vibration setting is also available depending on the sample to be cultured. (Reversible door is unavailable for MIR-554.)

Energy Savings

In addition to a microprocessor-controlled high efficient heater output and compressor ON/OFF, a renewal control program and low heat-emission inner chamber fan are newly adopted incorporated to allow high energy saving operation over a wider range of ambient environments.

Automatic Defrosting

To combat annoying frost during low temperature operation, new MIRs provide an automatic defrost function that operates automatically at a specified time every day. Manual defrosting is also selectable.

Light Timer Control

On-Off programmed timer control for standard equipped fluorescent light (15W x 1pc) is available. Optional light addition kit (MIR-L15) can add three more fluorescent lights into the chamber ceiling, giving approx. 3000 lux at 30 cm below from the light sources.

Environmentally Conscious

Microprocessor controlled optimum control results in high energy savings and a HCFC-free foamed-in-place rigid polyurethane insulator also helps save energy.

Automatic Setting Temperature Alarm

When the chamber temperature deviates more than ±1°C to ±5°C, all digits of the digital indicator flash. 15 minutes (default) later a buzzer will sound. This system also automatically allows programmed operation or setting value changes.

Independent Over-Temperature Protection Device

This incubator incorporates an excessive temperature prevention circuit that protects experimentation materials in the rare event that a temperature abnormality does occur. This system turns off the heater and chamber fan motor when too high a temperature is detected, and turns off the compressor when too low a temperature is detected.

Programmed Memory Backup Mechanism

Should the power source be interrupted due to power failure or other event, programmed data remains stored in memory. When the power source is restored, operation can be continued according to the predetermined program.

Automatic Return Buzzer Switch

After an abnormality occurs, the alarm automatically switches to the ON mode, even if the operator forgets to return the alarm buzzer to the ON mode, thus ensuring safe and secure operation.

Tamper Proof

A key lock function is provided so that settings may not be changed unintentionally.

Self Diagnostic Function

Should a malfunction occur, the location of the malfunction can be digitally indicated, allowing quick operator response.
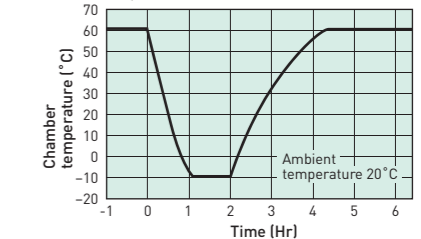
Data acquisition system

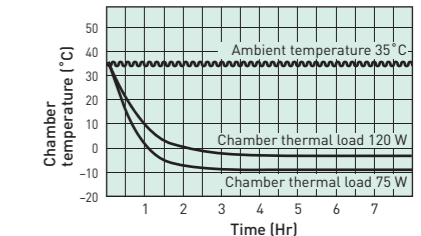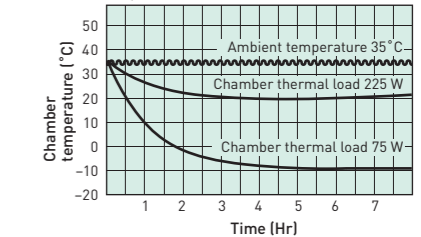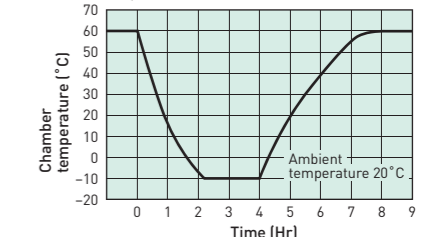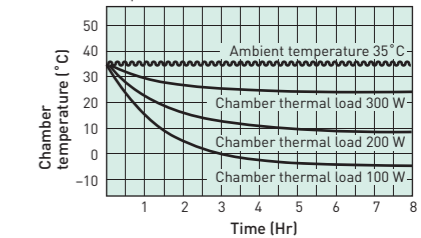Data acquisition software enables remote monitoring of cooled incubators.