

MIR COOLED INCUBATORS

Model Range:
MIR Cooled Incubators

PHCbi's Cooled Incubators have been recognised as exceptional units suitable for a wide range of applications. These incubators offer precise, repeatable control of programmable temperatures and lighting patterns which are essential to biological research and environmental studies.

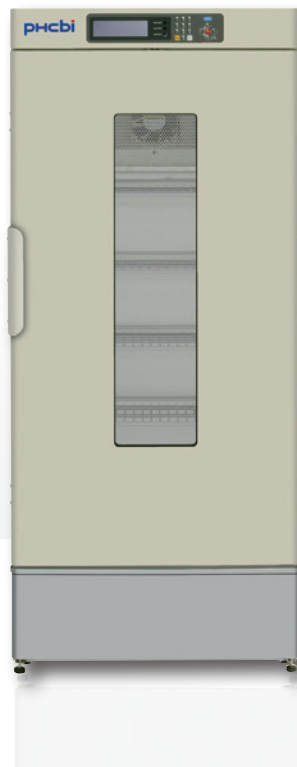
COOLED INCUBATORS PURE PERFORMANCE



MIR Cooled Incubators

123 litres Incubator

MIR-154-PE



238 litres Incubator

MIR-254-PE



406 litres Incubator

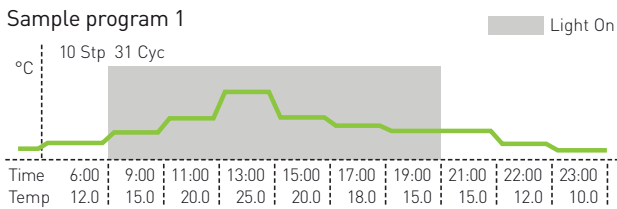
MIR-554-PE

Quality control and testing is an important aspect of pharmaceutical development. With our cooled incubators, achieve optimal temperature configuration for a variety of protocols, including QA / QC, microbiology and stability conditioning.

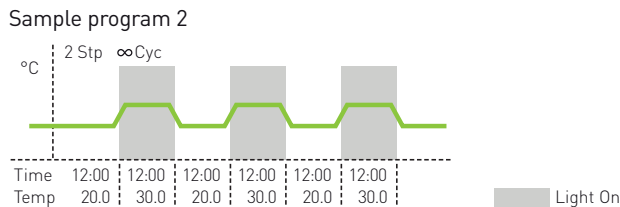
IMPROVED EXPERIMENTATION OF REPETITIVE OPERATION AND OPERABILITY

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.



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 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.

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 Cooled Incubators 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.

HIGH-PRECISION TEMPERATURE ENVIRONMENT

Wide temperature control range from -10°C to +60°C

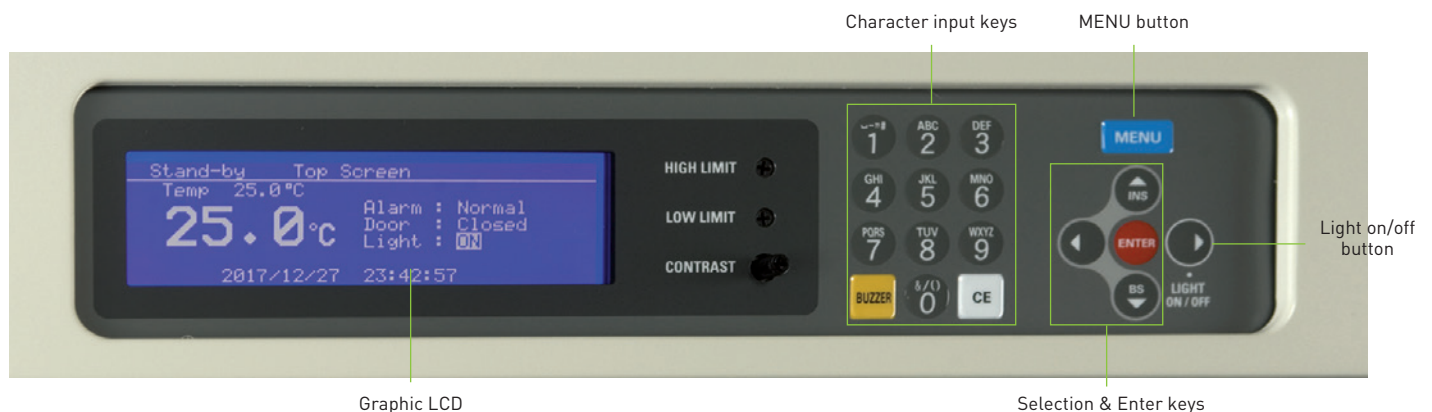
With a wide temperature range from -10°C to +60°C, PHCbi's Cooled Incubators allow a full range of precise experiments including environmental tests to microorganism cultures and plant germination tests.

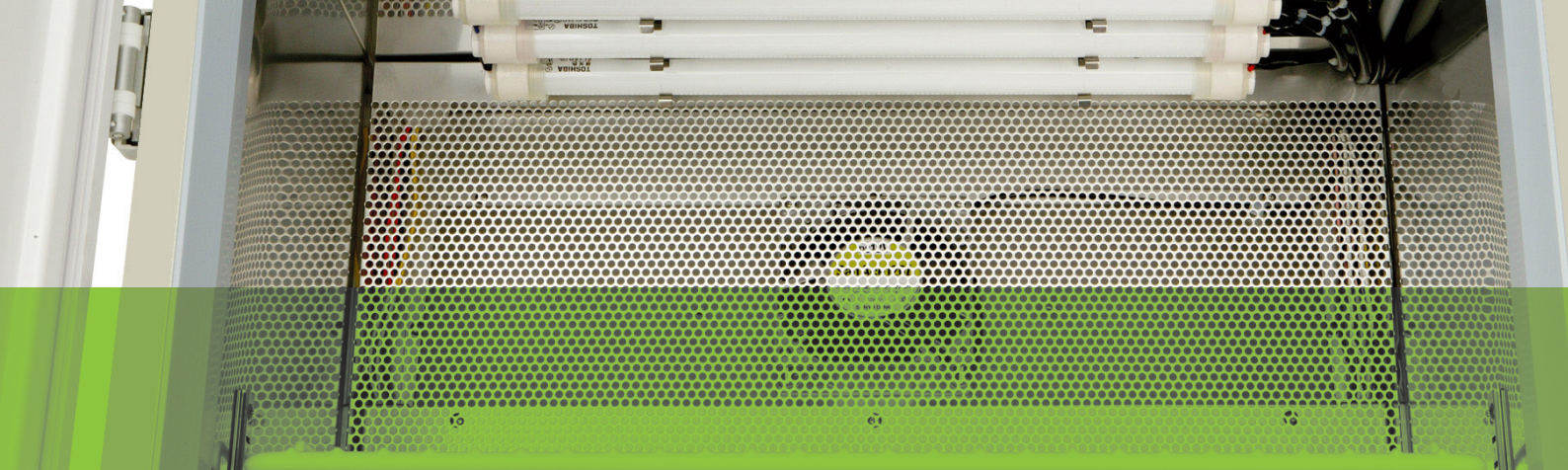
Precise microprocessor temperature control

PHCbi's Cooled Incubators incorporate a high precision microprocessor temperature control combined with a heater PID and compressor on/off system.

INTUITIVE OPERATION WITH 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.
- Chamber light ON-OFF control.





Condensation prevention (MIR-554 only)

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

Prevents medium from dessication (MIR-154, 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

The Cooled Incubators 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, an updated control program and low heat-emission inner chamber fan have been incorporated to allow high energy saving operation over a wider range of ambient environments.

Automatic defrosting

To combat annoying frost during low temperature operation, the PHCbi Cooled Incubators 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 30cm below from the light sources.

Environmentally conscious

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

ALARM AND SECURITY SYSTEM TO PROTECT SAMPLE SAFETY

Automatic setting temperature alarm

When the chamber temperature deviates more than $\pm 1^{\circ}\text{C}$ to $\pm 5^{\circ}\text{C}$, 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.

SPECIFICATIONS

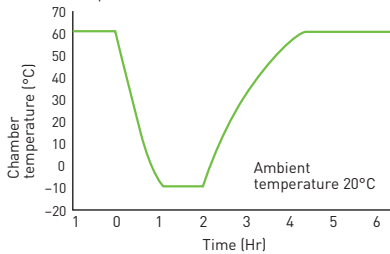
Models: MIR-154-PE | MIR-254-PE | MIR-554-PE

Performance data MIR Cooled incubators

MIR-154-PE

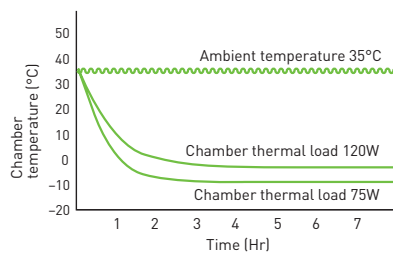
Chamber pull-down/pull-up characteristics

(Ambient temperature 20°C Power source: AC100V/50Hz)



Pull-down characteristics for thermal load in chamber

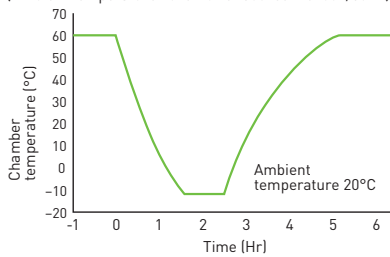
(Ambient temperature 35°C Power source: AC100V/50Hz)



MIR-254-PE

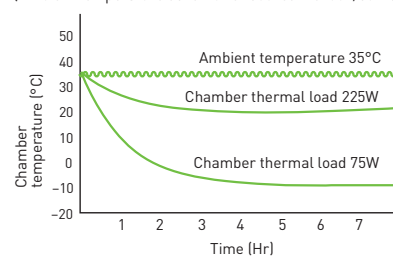
Chamber pull-down/pull-up characteristics

(Ambient temperature 20°C Power source: AC100V/50Hz)



Pull-down characteristics for thermal load in chamber

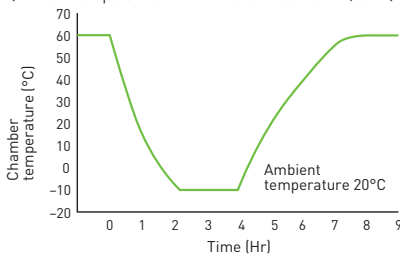
(Ambient temperature 35°C Power source: AC100V/50Hz)



MIR-554-PE

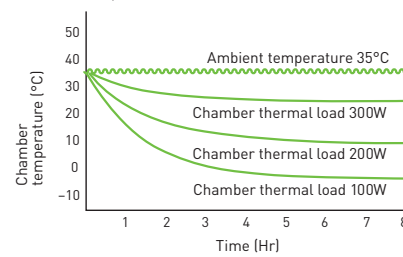
Chamber pull-down/pull-up characteristics

(Ambient temperature 20°C Power source: AC100V/50Hz)



Pull-down characteristics for thermal load in chamber

(Ambient temperature 35°C Power source: AC100V/50Hz)

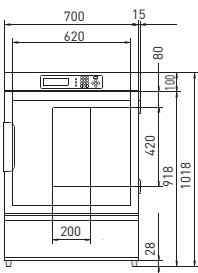


*The data shown above are taken with the fluorescent lamp off.
*Characteristics may vary depending on the product or operating conditions.

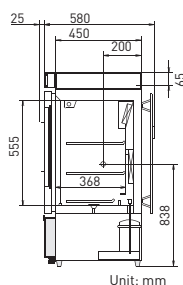


Stacked MIR 154 with Stacking kit MIR-S154SB-PW

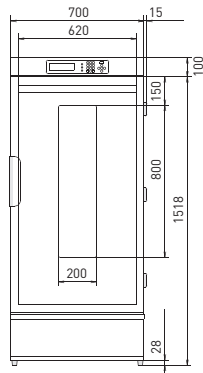
Dimensions MIR Cooled incubators



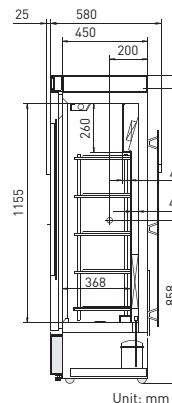
MIR-154-PE



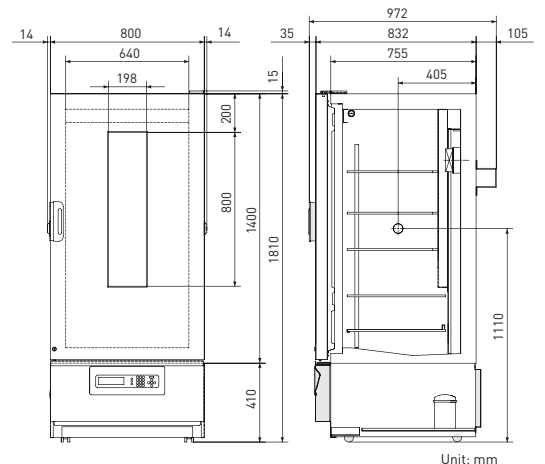
Unit: mm



MIR-254-PE



Unit: mm



MIR-554-PE

SPECIFICATIONS

Models: MIR-154-PE | MIR-254-PE | MIR-554-PE

MIR Cooled incubators				
Model Number		MIR-154-PE	MIR-254-PE	MIR-554-PE
External Dimensions (W x D x H) ¹⁾	mm	700 x 580 x 1018	700 x 580 x 1618	800 x 832 x 1810
Internal Dimensions (W x D x H)	mm	620 x 368 x 555	620 x 368 x 1088	640 x 550 x 1160
Volume	liters	123	238	406
Net Weight	kg	78	108	195
Performance				
Temp control range and fluctuation	°C	-10 ~ +60 (AT; +5 ~ +35, no load), ±0.2 with Heater PID control (SV 50), ±1.5 with Compressor control (SV 5) PID control: 7°C above AT for MIR-154/254; 10°C above AT for MIR-554		
Temperature uniformity	°C	±0.5 SV (35)		
Performance ambient temperature	°C	20, no load		
Control				
Temperature Sensor		Thermistor		
Refrigeration				
Insulation material		PUF		
Insulation thickness	mm	40	40	80
Compressor		150	250	250
Refrigerant		R-134a	R-404A	R-404A
Cooling method		Forced air circulation		
Construction				
Exterior material		Painted steel		
Interior material		SS SUS-304		
Outer door	qty	1		
Outer door lock			MIR-LP option	Y
Reversible door		Y	Y	N
Inner door	qty	N	N	2 small inner doors (MIR-55ID option) MIR-LP option
Shelves	qty	3	5	5
Max. load per shelf	kg	20	20	50
Max. total load	kg	61	100	250
Access port	qty	1	1	2
- position		left side	left side	left and right side
- diameter	∅ mm	40		
Interior fluorescent lamp		1, 15, with MIR-L15-PE ²⁾ option		
Alarms (R = Remote Alarm, V = Visual Alarm, B = Buzzer Alarm)				
Power failure		-	-	R
High temperature			V-B-R	
Low temperature			V-B-R	
Door open			V-B	
Electrical and noise level				
Power supply	V	230		
Frequency	Hz	50		
Noise level ³⁾	dB(A)	41	44	45
Options				
Stacking kit		MIR-S154SB-PW	-	-
Door padlock bracket		MIR-LP-PW	MIR-LP-PW	-
Additional illumination kit		MIR-L15-PE	MIR-L15-PE	MIR-L15-PE
Inner doors		-	-	MIR-55ID-PW
Door window blanking plate		MIR-154BP-PW	MIR-254BP-PW	-

Notes:

- 1) Exterior dimensions of main cabinet only, excluding handle and other external projections - See dimensions drawings on website for full details
- 2) MIR-L15-PE operates between +2°C and +50°C
- 3) Nominal value. Background noise 20dB

