

Specifications

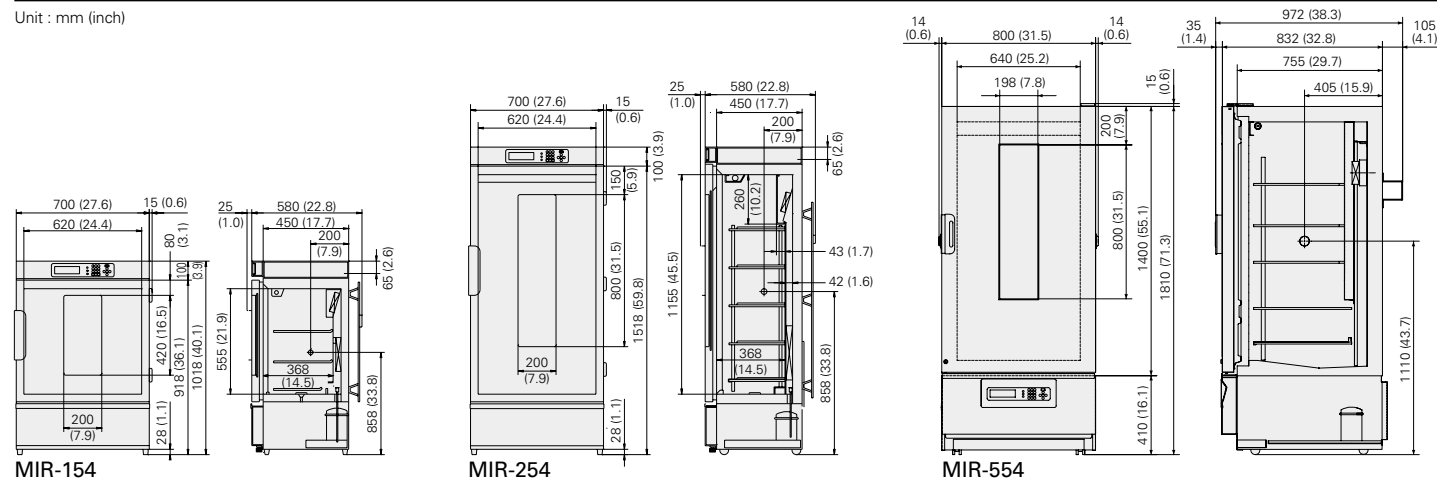
Model	MIR-154	MIR-254	MIR-554
Exterior dimensions (W x D x H) mm (inch)	700 x 580 x 1018 (27.6 x 22.8 x 40.1)	700 x 580 x 1618 (27.6 x 22.8 x 63.7)	800 x 832 x 1810 (31.5 x 32.8 x 71.3)
Interior dimensions (W x D x H) mm (inch)	620 x 368 x 555 (24.4 x 14.5 x 21.9)	620 x 368 x 1088 (24.4 x 14.5 x 42.8)	640 x 550 x 1160 (25.2 x 21.7 x 45.7)
Effective capacity	123ℓ (4.3 cu.ft.)	238ℓ (8.4 cu.ft.)	406ℓ (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	PE coated steel wire, adjustable		
	3	5	5
Insulation	Foamed-in-place rigid polyurethane		
Circulation system	Forced air circulation		
Compressor	Hermetic type		
	Single phase, Output 150W	Single phase, Output 250W	Single phase, Output 250W
Evaporator	Fin and tube type, forced circulation		
Condenser	Wire and tube type natural air cooling system		
Defrosting system	Manual / Automatic		
Heater	Cord heater 141W	Cord heater 218W	Cord heater 322W
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 approx. ±2.5 degrees, 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 memorised.		
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, AT 20°C, No load)		
	±1.5 degrees at Compressor ON-OFF control (SV 5°C, AT 20°C, No load)		
Temperature uniformity	±0.5 degrees (Setting temperature 37°C, Ambient temperature 20°C, No load)		
Total power consumption	205/235W	260/280W	380/440W
Interior lamp	15W x 1, Fluorescent lamp (Setting temperature +5°C to 50°C)		
Net weight	78kg (172.0 lbs.)	108kg (238.1 lbs.)	195kg (429.9 lbs.)
Accessories	—		Key 1 set

• Appearance and specifications are subject to change without notice.

Caution: SANYO guarantees the product under certain warranty conditions. SANYO in no way shall be responsible for any loss of content or damage to content.

Dimensions

Unit : mm (inch)



MIR-154

MIR-254

MIR-554

Options

- Spacers for double stacking: **MIR-S154SB** (only for MIR-154)
- Pad lock key mounting plate: **MIR-LP** (only for MIR-154, 254)
- Lighting addition kit: **MIR-L15**
Note: When the MIR-L15 is installed, the illumination lamps will automatically turn off at the temperatures outside +2°C to +50°C.
- Inner doors: **MIR-55ID** (MIR-554 only)
*The chamber temperature is limited below +50°C.
- Light shielding plate for glass: **MIR-154BP/MIR-254BP**
- SANYO DAQ system: **MTR-5000**/Ethernet (LAN) Interface **MTR-L03**
or RS232C/RS485 Interface **MTR-480**

SANYO Electric Co., Ltd., Biomedical Division, Gunma is certified for:

Quality management system: ISO9001 / Medical devices quality management system: ISO13485 / Environmental management system: ISO14001

Distributed by:

Note: When the MIR-L15 is installed, the illumination lamps will automatically turn off at the temperatures outside +2°C to +50°C.



SANYO Electric Co., Ltd.
Biomedical Division
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Think GAIA
For Life and the Earth



Cooled Incubators

MIR-154/254/554

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

Cooled Incubator

SANYO'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.)

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, and is ideal for experimentation during night time and holidays, experimentation that requires settings to be changed and microorganism culture and preservation.

Also new MIRs offer the choice of timer mode, 24-hours clock mode and Timer mode to suit the user's experiment. 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:

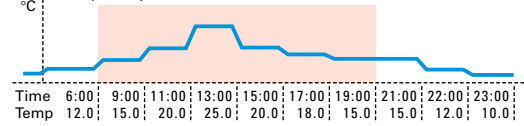
24-hour clock mode

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 the starting of the program, select "Clock mode" on the running mode screen.

Sample program 1

10 Stp 31 Cyc



Sample program 2:

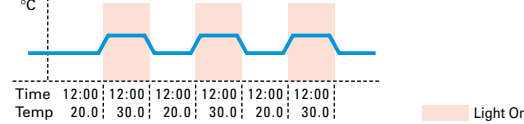
Timer Mode

2 Steps, Cycle: Continuous repeat

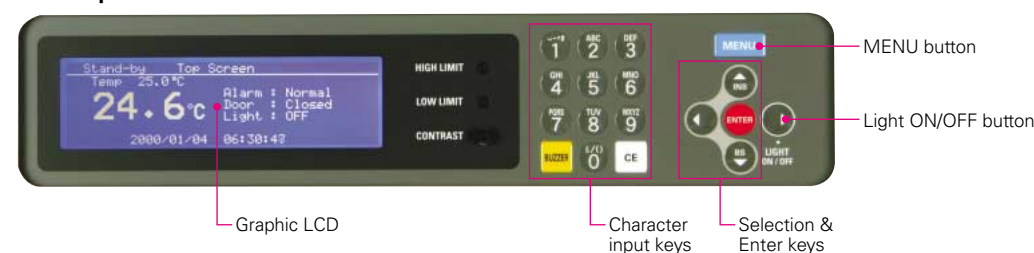
This is one Cycle consisting of 2 Steps, which is repeated continuously in this Program. (Max. is 98 cycles or continuous) At the starting of the program, select "Timer mode" on the running mode screen.

Sample program 2

2 Stp ∞ Cyc



Control panel



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, SANYO Cooled Incubators allow a full range of precise experiments including environmental tests to microorganism cultures and plant germination tests.

Precise Microprocessor Temperature Control

SANYO 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 by LCD display and pop up menu
- 24-hour mode and timer mode are selectable.
- Combination of multiple programs in Join function
- Booking of operation start date and hour
- Operation data can be auto-recorded and graphical displayed.
- Data can be sent to PC using optional communication interface (MTR-480)
- 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.

Alarm and Security System to Protect Sample Safety

Prevents Medium from Drying Out (MIR-154, 254 only)

A DC fan is designed to be aimed obliquely upward to prevent direct wind against 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 that 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 initially 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. 3000lx in 30cm 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 to ± 5 °C, all digits of the digital indicator flash. Fifteen 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.

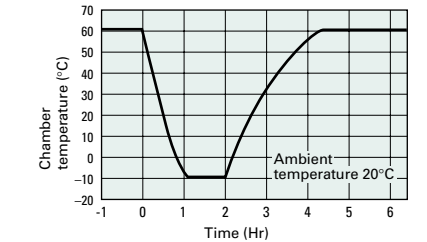
SANYO DAQ System

SANYO original DAQ (data acquisition) software enables remote monitoring of cooled incubators.

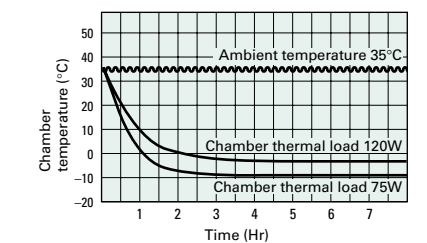
Performance Data

MIR-154

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

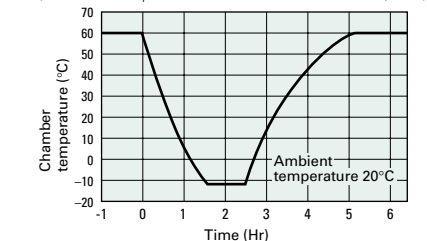


Pull-down characteristics for thermal load in chamber (Outside air temperature 35°C Power source: AC 100V/50Hz)

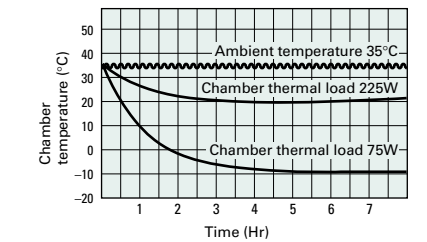


MIR-254

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

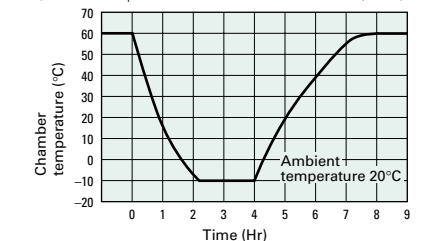


Temperature pull-down characteristics for thermal load in chamber (Ambient temperature 35°C Power source: AC100V/50Hz)

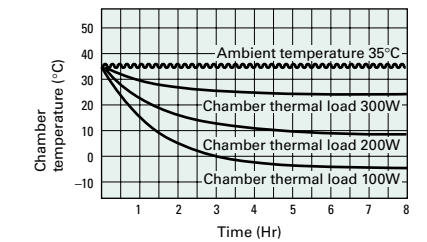


MIR-554

Chamber pull-down/pull-up characteristics (Ambient temperature 20°C Power source: AC100V/50Hz)



Temperature 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 turned off. *Characteristics may vary depending on the product or operating conditions.