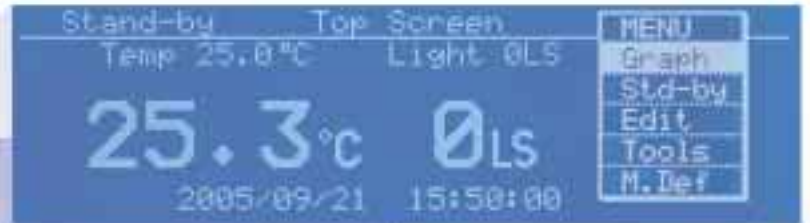


## Plant Growth Chambers

## MLR-351/351H

- Graphic LCD provides easier operation
- Programmable temperature, lighting and humidity function (MLR-351H)
- Microprocessor PID control and Refrigeration Capacity Control
- Data logging function



MLR-351H



MLR-351

- Temperature range:
  - 0 to +50°C** (MLR-351) (Lamp OFF)
  - +10 to +50°C** (Lamp ON)
- Lighting range:
  - 0 to 20,000 lx** (Adjustable)
- Humidity range (MLR-351H only):
  - 60 to 90% RH** (Light OFF)
  - 55 to 85% RH** (Light ON)

Culture of plant cells, tissues and organs

Acclimation and rearing of plants

Incubation and rearing of insects

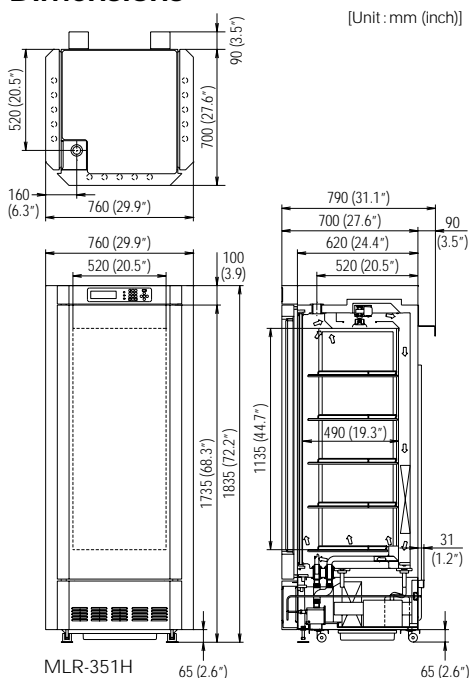
# MLR-351/351H

The wide variety of temperatures and lighting patterns that are essential in plant research can now be accurately reproduced and controlled. And you get humidity control\* too! (\*MLR-351H only)

## Features

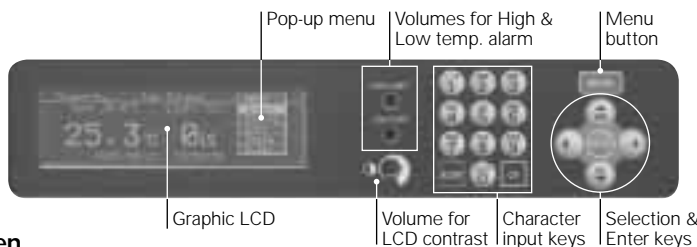
- Microprocessor PID and Refrigeration Capacity control eliminate temperature fluctuations and thereby improve temperature control. This allows superior precision experiments plus energy and electricity savings.
- Programmable temperature function is perfect for temperature cycle and vernalization treatment research.
  - 12-step programmes x 10 patterns can be memorized.
  - Selectable clock mode or timer mode
  - Multiple programmes can be "connected" (Join mode).
  - Starting day and time of operation can be programmed.
- Operation data of approximately last 2weeks (6-minute intervals) can be automatically recorded.
  - The data can be retrieved on the control panel.
  - The data can be transmitted to a PC (CSV data via RS-232C, interface board MTR-480 required).
  - Easy calibration: temperature and humidity can be calibrated easily through the control panel.
- Small and lightweight, high-molecular membrane-type humidity sensor also boasts a high degree of accuracy and reproducibility. Of the newest high-molecular membrane type, the humidity sensor accurately measures chamber humidity (MLR-351H only).

## Dimensions



## Control Panel

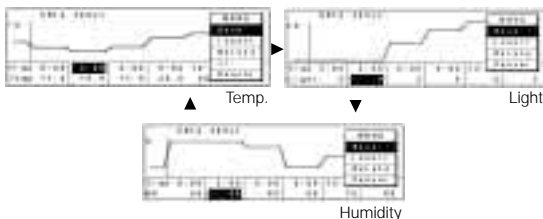
Graphic LCD panel with pop-up menu function on control panel provides more visual display and allows intuitive operation.



## Programme Setting Screen

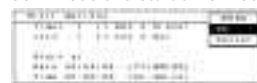
### 1. Selection of menu

Temp. light and humidity pages scroll by down key



### 2. Various ways of starting programmes

Selection from Subtraction & Time mode, Join mode and start time mode



### 3. Data logging function

Operation data can be recorded



## Specifications

Model No.	MLR-351	MLR-351H
Exterior dimensions (W x D x H)	760 x 700 x 1,835mm (29.9" x 27.6" x 72.2")	
Interior dimensions (W x D x H)	520 x 490 x 1,135mm (20.5" x 19.3" x 44.7")	
Effective capacity	294 litres (10.4 cu.ft.)	
Exterior finish	Painted steel	
Interior finish	Stainless steel, paired glass window on right and left sides (370 x 1,110mm) (14.6" x 43.7")	
Door	Painted steel	
Shelves	Hard steel wire on polyester coating, 4 pcs. Inner dimensions: W465 x D450mm (18.3" x 17.7"), Maximum load: 25kg/shelf Hard steel wire on polyester coating with stainless steel cover, 1 pc. (bottom) Inner dimensions: W355 x D395mm (14.0" x 15.6"), Maximum load: 25kg/shelf	
Access hole	40mm diameter x 1 (chamber top position)	
Casters	4	
Air circulation	Forced air circulation	
Heater	340W	
Defrost	Automatic defrost (3 patterns), Manual defrost	
Option	MTR-480, MLR-5144 (Recorder bracket)*	
Net weight (Approx.)	220 kg (485 lbs.)	230 kg (507 lbs.)
<b>Control related specifications</b>		
Temperature control range	0°C to +50°C (Lamps off) +10°C to +50°C (Lamps on)	+5°C to +50°C (Lamps off) +10°C to +50°C (Lamps on)
Temperature distribution (AT 20°C, set temp. 25°C, no load)	±1.0°C (Lamps off), ±2.5°C (Lamps on)	
Temperature fluctuation (AT 20°C, set temp. 25°C, no load)	±0.3°C	
Temperature control	Microcomputer PID and Refrigeration capacity control	
Lighting range	0 to 20,000lx Fluorescent lamp 40w x 15, 6 increments (0, 1, 2, 3, 4, 5)	
Humidity	N/A	Ultrasonic humidifier PID control
Humidity control range	N/A	60 to 90%RH (+15°C to +45°C and light OFF) 55 to 85%RH (+15°C to +45°C and light ON)
Programme function	Temperature and light 12 steps (10 patterns), 98 cycle or limitless Clock mode: 00:00 - 23:59 Timer mode: 00:01 - 99:59	
Data logging function	Up to approx. 14 days with 6-minute intervals (record cannot be logged during a blackout). The daily information can be shown in graph display. (Older data will be deleted automatically when memory becomes full.)	
Real time clock	Battery backup for clock function	
Analog output for recording	0 to 100mV / Temperature: 0 to +50°C / Light: 0 to 5 / Humidity: 0 to 100RH	
Alarms and safety	Temperature alarm, High and low temperature limit, Humidity alarm	

\* Appearance and specifications are subject to change without notice.

\* Recorder is not produced by SANYO.

Distributed by:



SANYO Electric Co., Ltd.

SANYO Sales & Marketing Corporation

5-15, Hiyoshi-cho 2-chome, Moriguchi City, Osaka, 570-8634, Japan  
Telephone: +81-6-6992-0322 Fax: +81-6-6992-9291

URL <http://www.sanyo.co.jp/cmg/biomedical>

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