



## **PLANT GROWTH CHAMBERS**

Labtop Plant growth chambers are designed to produce environmental conditions (humidity and temperature) that maximize plant growth. These chambers are also known as environmental chambers or seed germinator. Applications include plant breeding and genetic research, photosynthesis, nutrition, and other aspects of plant physiology.

## ILLUMINATION

The plant growth chamber comes with a fluorescent lighting system used to simulate day and night testing. There are separate temperature and humidity set points that correspond with the lights on (day) and lights off (night). The set-points can also be made the same if continuous conditions are needed throughout the light cycles.

## CABINET CONSTRUCTION

The cabinet of Labtop Chambers is insulated with high density CFC free Poly Urethane Foam. Interior of the chambers are mirror finish stainless Steel (304 SS, 0.8 mm thick). The exterior is white powder coated (1.0 mm thick) mild steel and the door has magnetic gasket with a keyed door lock. Specially designed solid stainless steel wire mesh trays ensure even temperature distribution and storage inside. GMP models are in total stainless steel (Inside S. S 304 with mirror finish and outside S.S 304 dull finish and inner S.S 316 is also available on request at extra cost) and the unit is mounted on caster wheels for ease of mobility.

## REFRIGERATION SYSTEM

The cooling is effected by CFC free refrigeration system with a condensing unit located inside the chamber. Labtop condensing units are characterised by high-efficiency heat transfer and low power consumption.



- CFC free eco friendly refrigeration system
- Inner grooved copper tubes and slit aluminium fins for superior heat transfer
- Filter drier for moisture and dirt protection
- Safety and control devices for better system protection
- Thermally protected and permanently lubricated fan motors

## SAFETY FEATURES

- Miniature circuit breaker to protect electronic components in case of abnormal power supply
- Low water level alarm with safety cut off to safeguard boiler heater
- Audio visual alarm when temperature deviates from set temperature
- Provision for mobile alert via GSM technology
- Safety cut off when temperature crosses 60.0°C.
- Overload Protector to safe guard the compressor
- 180 seconds time delay for compressor switch ON

# PROGRAMMABLE LOGIC CONTROLLER (PLC) SYSTEM

A **programmable logic controller (PLC)** is a digital computer used for automation of controlling electromechanical processes, such as control of Temperature, Relative Humidity, Standby systems and event management with less maintenance hence no moving parts.



- 4.3" HMI with color Display and touch screen
- Configurable access for 72 users
- Privilege based grouping
- Multi level Password protected **H**uman **M**achine Interface (HMI)
- Data storage to record set values, process values, date & time with variable time intervals
- High speed Ethernet connectivity
- Calendar programs
- Incorrect password attempt and user lock
- Online data can be printed with date and time stamp
- Non operational screen auto logout
- Configurable maintenance reminder pop up alarm
- Individual Alfa numeric user ID and password
- User operation will be recorded and saved in memory
- Online and offline Log reports on HMI
- Safety cut off for over shoot and under shoot
- Programmable alarms with event management
- Precise control of temperature by using PID control Action
- Data storage capacity up to 200000 readings
- Self diagnostic system with error messages

## ALERT MANAGEMENT

- SMS alert message can be send to 5 users with notifications
- Email alert can be sent to 15 users with notifications
- Call alert can be send to 5 users with voice messages with notifications

## SALIENT FEATURES



- Unidirectional air flow system ensures even temperature distribution and quick recovery after door openings.
- Formed-in-place PUF insulation ensures temperature stability and reduced energy consumption.
- Chamber illumination with fluorescent LED light
- Specially designed solid stainless steel wire mesh trays ensure even temperature distribution.
- Various accessories are available as option
- Caster wheels for ease of mobility
- Teflon coated boiler heater to avoid scaling
- Automatic switch off of UV lights upon door opening
- High quality PT-100 Sensor for better accuracy

TECHNICAL SPECIFICATIONS									
Cat. No.	LGC-100P	LGC-200P	LGC-300P	LGC-400P	LGC-600P	LGC-800P	LGC-1000P	LGC-1500P	LGC-2000P
	LGC-100GP	LGC-200GP	LGC-300GP	LGC-400GP	LGC-600GP	LGC-800GP	LGC-1000GP	LGC-1500GP	LGC-2000GP
Volume	100 Liters	200 Liters	300 Liters	400 Liters	600 Liters	800 Liters	1000 Liters	1500 Liters	2000 Liters
Temperature Range	10.0-60.0 °C								
Accuracy	± 0.2 °C								
Uniformity	±2.0 °C								
Humidity Range	40-98% RH								
Accuracy	±2 % RH								
Uniformity	±3% RH								
Co2 (optional)	300 to 5000 ppm								
Control system	PLC								
Illumination (LUX)	Up to 20000								
No. Of tray	2	3	4	4	4	8	8	10	10
No. of Doors	Single	Single	Single	Single	Single	Double	Double	Double	Double
Power	1500 W	1750 W	1750 W	1750 W	2000 W	2500 W	3500 W	3500 W	3500 W
Voltage	230 VAC and 50 / 60Hz								
Dimensions (W x D x H) in mm and weight									
Internal Size	435x400x600	505x400x1005	565x450x1205	635x530x1205	745x670x1205	1120x600x1205	1150x670x1300	1300x890x1300	1500x1030x1300
External Size	580x845x1275	650x880x1680	710x935x1885	780x1010x1880	890x1150x1960	1370x1075x1920	1400x1145x1920	1550x1365x1920	1750x1505x1920
Packing size	707x972x1478	777x1007x1883	837x1062x2088	907x1137x2083	1017x1277x2163	1497x1202x2123	1527x1272x2123	1677x1492x2123	1877x1632x2123
Net Weight	125	150	205	260	285	315	340	365	385
Gross Weight	180	230	280	330	355	405	430	460	485

NB: P- Models are with Programmable logic control (PLC)

G- Models are made out of Stainless steel 304 (GMP)

# LABTOP DATALINX SOFTWARE

Title 21 CFR Part 11 is the part of Title 21 of the code of Federal Regulations that establishes the United States Food and Drug Administration (FDA) regulations on electronic records and electronic signatures (ERES). Part 11, as it is commonly called, defines the criteria under which electronic records and electronic signatures are considered trustworthy, reliable, and equivalent to paper records.

- 21CFR-PART 11 compliance.
- Web based software
- Multiple chamber data acquisition on single software.
- Reports in Tabular and Graphical form
- Mean Kinetic Temperature Report.
- Automatic Back up Provision.
- Privilege based Group creation
- Privilege based user creation
- Trend analysis report
- Equipment audit trial report
- User ID with Alfa numeric password protection
- Multi user environment (LAN)
- Multiple level password with automatic expiry
- Electronic signature
- Separate reports for alarm and events
- Remote integrations with Control systems.
- Software audit trial report
- Email, SMS and call alert in case of system failure
- Online and offline trends



## OPTIONAL ACCESSORIES

### Data scanner

Eight/Sixteen Channel programmable temperature and humidity data Scanner to record, store and print the data online and off line with variable print time intervals, suitable for 80 col. Dot matrix printers.

### Software

“LABTOP DATALINX” CFR 21 Part 11 compliance web based communication software for data management. Complete with RS-485 multi dropping to monitor multiple chambers to one software.

### Stand by Refrigeration system

Ready to use stand by refrigeration system in case of regular system fails. This includes Compressor, Evaporator, condensers and other accessories.

### Standby Humidity system

Ready to use stand by Humidity System in case of regular system fails.

### Door Access system

Biometric magnetic door access for secured door opening and closing with PC interface communication

### Mobile alert

Mobile alert via GSM Technology in case of system failure

### UV and LUX Meter

Calibrated LUX and UV meters for measuring and controlling light intensity and ultraviolet rays

### Power Backup

Uninterrupted online power supply for PLC in case of power failure

### Trays

Additional rack and tray suitable for above equipment as per your requirement

## DOCUMENTATION

LABTOP offers IQ, OQ, PQ and DQ validation with documentation, reports, calibration and test

## CALIBRATION

The equipment is calibrated with the help of master calibrator, which is certified for its accuracy by Electronics Regional Testing Laboratory (ERTL West) Government of India recognized testing laboratory with traceable reference to National Physical Laboratories (NPL).

## SERVICE AND SUPPORT

The training undertaken by our Channel partners and engineers is of the highest standard in the industry, ensuring that our customers are supported by the highest level of technical expertise and as such can be assured that their equipment will perform to the standards required at all times.

Our wide network of Engineers/Technicians enables us to respond to any technical query, ensuring that our customers receive the maximum benefit from their equipment.

NB: Specifications are subject to change without prior notice.



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