

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

- Non Condensing steam injection type humidity system .
- High quality PT-100 Sensor for better accuracy .
- Chamber illumination with LED lights.
- Specially designed solid stainless steel wire mesh trays.
- Unidirectional air flow system ensures even temperature distribution and quick recovery after door openings.
- Various accessories are available as option
- User friendly height adjustable trays



Technical Specifications							
Cat. No.	LGC-60WP	LGC-80WP	LGC-100WP	LGC-120WP	LGC-150WP	LGC-180WP	LGC-225WP
	LGC-60WGP	LGC-80WGP	LGC-100WGP	LGC-120WGP	LGC-150WGP	LSC-180WGP	LGC-225WGP
Volume	6000	8000	10000	12000	15000	18000	22500
Temperature range	A5.0 – 60.0 °C (Light off)						
Temperature range	10.0 – 60.0 °C (Light ON)						
Accuracy	± 0.5 °C						
Humidity Range	40 – 95%						
Accuracy	± 2 %						
Illumination (LUX)	20000						
Door Size	750 x1800 mm						
Observation window	300 x 1400						
Wall Thickness	80 mm						
Density	40 kg /m3						
Inner size (WxDxH) cm	200 x 150 x 200	200 x 200 x 200	200 x 250 x 200	200 x 300 x 200	200 x 300 x 250	250 x 300 x 250	300 x 300 x 250
Outer size (WxDxH) cm	216 x 166 x 216	216 x 216 x 216	216 x 266 x 216	216 x 316 x 216	216 x 316 x 266	266 x 316 x 266	316 x 316 x 266
Number of Racks	4	4	6	6	8	10	10
Number of trays	16	24	32	48	48	48	48
Tray size	600x600	600x900	700x600	900x600	900x600	900x600	900x600
Power	7000 W	8000 W	8000 W	8000 W	8000 W	9000 W	12000 W
Voltage	230 / 415 VAC, 50 / 60 Hz						

REFRIGERATION SYSTEM

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



- CFC free refrigeration with time delay to safe guard the compressor .
- Powder coated body to make the units UV and corrosion resistant.
- 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.
- Smaller footprint for ease of handling and installation.

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.

- 7" HMI with color Display and touch screen.
- Configurable access for 72 users.
- Privilege based grouping.
- Multi level Password protected Human Machine Interface (HMI).
- Data storage to record set values, process values, date & time with variable time intervals.
- Display of set value and process value.
- High speed Ethernet connectivity .
- 1 min- 999 hrs timer.
- 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.
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- 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.



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 .

SAFETY FEATURES

- Miniature circuit breaker to protect electronic components in case of abnormal power supply
- Audio visual alarm for temperature, humidity variations from set Values
- Safety includes shut off of boiler and air heaters in case of temperature overshoots or undershoots beyond specified limits with alarms

- Low water level alarm and power cut off to safeguard the boiler heater
- Overload load protector to safe guard compressor.
- Provision for mobile alert via GSM technology for any abnormal conditions.
- Self closing mechanism ensures that the door remains closed.
- Facility to open the door from inside in case of door locked with emergency alarm having switch inside chamber.

GMP Model: Inside and outside chamber is made stainless steel 304

Standard Model: Inside stainless steel 304 and outside galvanised Iron pre painted

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.
- Browser 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

Temperature and Humidity Data Scanners

8 /16 Channel programmable Data Scanner (4 temperature and 4 humidity) for record, store and print the data online and off line with variable print time intervals, suitable for 80 col. Dot matrix printer.

Software

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

Gas purging

Gas purging facility for inserting Co2 or any other gas

Stand by Refrigeration system

Ready to use stand by refrigeration system if the regular system fails (for 600 litres and above). This includes Compressor, Evaporator, condensers and other accessories.

Light bank

Chamber Illumination LED light bank for photosynthesis studies

Ultra violet lamp

Chamber illumination with UV-C lamp to sterilize the interior

UV and LUX Meter

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

Mobile alert

Mobile alert via GSM Technology in case of system failure

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

Door access

Biometric magnetic door access for secured door opening with software to maintain log record

Documentation

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

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).