



PLANT GROWTH CHAMBER

AN ISO 9001 : 2015 CERTIFIED CO. & CE MARK PRODUCT

Model No : SRL / PGC-11



Controller :

PLC based PID controller with 5.6" LCD is capable of controlling temperature, humidity, CO₂ and lighting. Programs may be configured to run in real time or countdown (circadian) mode. Ramping and non-ramping program methods are available for each programming mode. Multiple programs are linked to create complex environmental profiles. additional information regarding the control system 25 steps PLC with HMI based temp. & RH controller, with 50 real time use entered programs in with 99 cycles in each programs. provides precise temp., RH, Humidity, illumination & CO₂ maintaining uniform & accurate growth environment. Timer, alarm, auto tuning & auto start, stop function. with printer interface (centronic port). PC interface with RS232CPS / RS-485 interface for multiple networking of controller. Data loggers up profile controller for Ramp / soak for cyclic application chamber illumination of U.V. Lamps. Low water level circuit etc. Also available stand by humidity & refrigeration system (Manual & auto change over) as optional. Auto diagnostic feature. Ambient temp. monitoring. Autorestart in case of power failure. 24 hour chamber monitoring 4 level password protection for controller operation.

Applications :

This chamber product is frequently used for research application such as lighting for plant pathology research and seedling germination and development.

Lighting System :

Three tiers of lighted shelving is lit by LED fluorescent white lights & tungsten incandescent lamps properly spaced for uniform light intensity. Intensity is adjustable from 600 to 2000 $\mu\text{moles/m}^2/\text{s}$ at 150mm distance from the lamps. Programming and control of the lighting is done controller between temperature +10°C to +40°C. Lamps with 3 on/off light events. Par sensor for light measurements.

TECHNICAL SPECIFICATIONS

Model SRL-PGC-11	Internal Dimension (W X D X H)(cms)	Capacity Ltrs
PGC-A	45 x 45 x 50	100
PGC-B	50 x 50 x 80	200
PGC-C	60 x 50 x 120	350
PGC-D	60 x 60 x 110	400
PGC-E	60 x 60 x 140	500
PGC-F	70 x 60 x 145	600
PGC-G	70 x 70 x 145	700
PGC-H	75 x 75 x 145	800
PGC-I	80 x 75 x 150	900
PGC-J	80 x 80 x 155	1000
PGC-K	85 x 80 x 160	1100
PGC-L	90 x 83 x 160	1200

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Cabinet Construction & Insulation :

Interior Made of 19 guage plated steel exterior of 19 guage plated steel construction 100mm thick puff panels with puff in place density of minimum 1 kg per cubic foot or its equivalent. Insulation with expanded polystyrene or any equivalent. material having R factor of minimum 34 shall maintain its dimensional stability in an operating temperature range of +5°C to +60°C. Insulation panel or its equivalent shall have cam-type fasteners with vinyl gasket or its equivalent. Environment friendly foam (Global warming potential of 0.0 & ozone depletion potential of 0.0)

Temperature Range :

+20°C to +40°C

Temperature Safety Limit Controls:

(Experiment Protection) Adjustable high and low temp. controls, audible alarms, and visual in directors are provided. the controls shut down all the power to the chamber, and activates alarms. when the temperature returns to the normal range the system will auto-matically reset.

Doors :

Two reach in doors for full access. Doors shall have magnetic snap-in perimeter gasket or its equivalent, self closing cam lift gravity hinges or its equivalent a posi-seal door closure or its equivalent. Door shall have key lockable latch handle with an inside safety release. Magnetic gasket is provided for a tight seal.

Humidity control :

50% to 80% RH, $\pm 3\%$, Humidity resolution: $\pm 0.1\%$ Through Will consist of humidifier tank fitted with boiler heaters, and give alarm if fault occurs or Ultrasonic Humidification System. Water reservoir tank will be connected to the humidifier. RH sensor of rotronic hygroclip of SWISS make.

Shelving :

2 Stainless steel shelves, shall be adjustable in 0.5 inch increment / Decrement.

Humidification :

Air Heaters are provided for heating above ambient temperatures. Humidity is controlled by steam injection method. The boiler tank is used for steam generation, Electro-magnetic switch is used for sensing the Water Level. Thus eliminating the humidity interruption.

Co2 Application : [Optional]

0-2000 ppm complete with cylinders & regulators operated directly from PLC with NDIR sensors.

De-Humidification :

De-humidification coils are installed below the cooling coils for lower humidity.

Airflow/Circulation :

Uniform forced air circulate across the shelf via air diffusers on the top wall. Uniform horizontal or vertical airflow shall be provided for maintaining uniform temperature and RH in the room. System for adjustable forced air exchange shall be provided with up to 20 air exchanges per hour of fresh air to the room or its equivalent and an option to shut it down when not required.

Refrigeration :

Air cooled condensing unit which is self contained with hot gas bypass system for continues compressor operation. Temperature control in accurate and it extends its life by alternately cycling refrigerant and hot gas to the coil. Long neck solenoid values for quiet and long life operation.

Optional :

To be provided with air flow regulator adjustable from 50% to 100% depending up the plant growths.

Safety Features :

Built-in temp. deviation, audio/visual alarms. Safety thermostat for over shooting of temp. safety circuit to cut of the whole systems in case of malfunction. (only applicable to microprocessor based models). HRS fuses for compressor heaters & mains.



Due to continuous development & improvements in design, we reserve the right to change the specification without notice.