E15 Growth Chambers

Specifications

All E15s are equipped with Conviron CMP5000 series controllers. Data logging is available for environmental conditions (temperature and relative humidity) and can be accessed on the internet using the following link: http://131.104.193.187:9001/?Folder=E15.

Growth Area 1.4 m^2 (15 ft^2)

Growth Height 116 cm (46")

Growth Capacity 1700L (60 ft^3)

Temperature range with lights OFF: 4 – 45 ^{o}C

Temperature range with lights ON: 10 – 45 ^{o}C

Combination of T12 fluorescent and incandescent lamps. Light levels depend on distance of plant canopy from the lamps, the age of the lamps, and the temperature in the chamber. An independent light sensor is available from the Coordinators if you wish to check your light levels during an experiment.

Relative Humidity - additive humidity is available, but temperature dependent. Consult with the Phytotron Coordinator.

Six E15s are available in the Phytotron. One of the six has extended growth height. Four of the six have high light options.

Additional tips:

- Air flows in the chamber up through the floor, cooling first the plants, the air around and above the plants and finally the lights. To ensure even temperatures in the chamber, try not to block the entire floor with trays – open trays without holes (daisy baskets) will allow for the best airflow
- **The hole in the middle of the floor is NOT a drain** – this is where air is returned to the chamber's environmental sensors for sampling and ultimately decisions the chamber makes about heating/cooling, humidification etc. Do NOT block this hole. All chambers have additional tubes that fit in this hole, allowing you to adjust the position of air sampling. Ideally, you should sample at the height of your plant canopy.
- Watering can be performed in the chamber – there is a drain under the floor and all chambers are connected to floor drains. All electrical components and environmental sensors under the floor are protected. Take care not to get water down the hole in the middle of the floor described in the previous point – this will interfere with air sampling and environmental control
- If you are concerned about particular environmental conditions, specific alarms can be programmed as e-mail alerts to alert either the researcher or the Phytotron Coordinator about potential problems. Phytotron staff receive all notifications regarding temperature alarms as both e-mail alerts and phone calls.
- To minimize the effects of any environmental gradients inside the chamber on plant growth, we recommended that plant position in the growth chamber be randomized so that particular treatments are not spatially aggregated. A useful random number generator for randomizing plant positions in the chamber can be found at www.random.org
- For additional information about reporting environmental conditions for your growth chamber experiment see the following document: http://www.controlledenvironments.org/Guidelines/Minimum-Guidelines-Brochure-version-A4.pdf