

## GR64 and GR192 Growth Rooms

### Specifications

All GR64 and GR192 growth rooms are equipped with Conviron CMP4000 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=GR64> and <http://131.104.193.187:9001/?Folder=GR192>

Growth Area GR64 5.9 m<sup>2</sup> (64 ft<sup>2</sup>) GR192 17.8 m<sup>2</sup> (192 ft<sup>2</sup>)

Growth Height GR64 203 cm (80") GR192 203 cm (80")

Growth Capacity GR64 11,980 L (420 ft<sup>3</sup>) GR64 36,000 L (1280 ft<sup>3</sup>)

Temperature range with lights OFF: 5 – 25 °C

Temperature range with lights ON: 15 – 35 °C

Combination of T8 fluorescent lamps, compact fluorescent lamps and incandescent lamps in the GR64s. Combination of T12 fluorescent lamps, compact fluorescent lamps and incandescent lamps in the GR192s, with retrofits planned to update the lamps to T8. 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 in 2 of the GR192 rooms, but temperature dependent. Consult with the Phytotron Coordinator.

Five GR64s are available in the Phytotron. One of the five GR64s is used as a Tissue Culture room. Three GR192s are available in the Phytotron.

### Additional tips:

- Air flows in the room down from the fan units hanging from the ceiling, running down the middle of the rooms. The air goes down towards the floor, cooling first the plants, the air around and above the plants and finally the lights. To ensure even temperatures in the room, nothing should be left in the middle aisle way underneath the fans. In addition, if benches are present in the room, they should be pulled about 10cm away from the back walls to ensure good airflow.
- Watering can be performed in the room – there is a drain at one end of each room. If water is not flowing towards the drain, Phytotron staff can provide a floor squeegee to assist with moving water towards the drain.



Growth room aspirator

- The white box inside the growth room (also known as the aspirator) contains the chamber temperature sensor and relative humidity sensor along with a circulating fan. Take care not to get the box wet as moisture will damage the fan and the relative humidity sensor.
  - The aspirator should also be kept at the level of the plant canopy to ensure accurate environmental measurements and good 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](http://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>