



Climatron<sup>®</sup>

By Thermoline Scientific

# PREMIUM SERIES PLANT GROWTH CHAMBERS

(+5°C TO +45°C) (AMBIENT TO 90% RH)

(Image: CLIMATRON-6000)



## Climatron Premium Growth Cabinet Series

- Temperature range +5°C to +45°C (Lights Off)
- Temperature range +5°C to +45°C (Lights On)
- CLIMATRON-1260 only: +10°C to +45°C (Lights On)
- CO<sup>2</sup> range up to 3000 PPM
- Ezy-Lift Hydraulic Adjustable Floor Level (with turn handle)
- Uni-Flow perforated flooring
- Growing volume from 1260 litres to 6000 litres
- Light intensity up to 1200µmols @ 1m from light source
- Gro-Sensor adjustable sensor box
- User friendly 7" colour touch screen

**AUSTRALIAN**

**MADE**



## Product Applications and Design Features

Thermoline Scientific have been designing and manufacturing plant growth cabinets for over 30 years in our Sydney, Australia factory. Our new and improved control system provides users with increased flexibility while maintaining a simple to use platform. The Climatron Premium Series provides precise control of the chamber environment including temperature, humidity, CO<sup>2</sup> and lighting for the optimum growth of plant material.

The Climatron Premium Series of Thermoline plant growth chambers are available in five separate sizes incorporating three different configurations. A single door, CLIMATRON-1260, double door CLIMATRON-2400 & CLIMATRON-2900, and the larger four door CLIMATRON-5000 and CLIMATRON-6000.

All Climatron plant growth chambers can be used for agricultural and life science applications including, but not limited to, plant production, bio-engineering, soil and food sciences and research applications.



## Cabinet Construction and Standard Features

All Climatron Premium Series chambers are constructed with a stainless steel under floor pan and air plenum. The working interior is manufactured from highly reflective white aluminium, whilst the exterior is manufactured from scratch resistant PVC coated steel. All chambers are insulated with polystyrene.

Thermoline's unique "Ezy-Lift" hydraulic floor system and "Uni-Flow" even air distribution system are also manufactured from stainless steel for greater corrosion resistance against fertilizers and potting mixture.

The Ezy-Lift hydraulic flooring system allow the user to adjust the floor height down as the plants grow without the need to open the access door or remove the plant material from the cabinet. Each Ezy-Lift floor system can hold a massive 300kg of plant material.

The Uni-Flow flooring also allows for large pots to be placed on the floor without restricting the air-flow through the chamber allowing for a more uniform temperature throughout the chamber regardless of the size of the plants being grown.



Note: Above model shown with Optional Horizontal End Connection

Ezy-Lift hydraulic flooring at different heights on 1260 litre model

## Controller

Via Thermoline's "Gro-Sensor" system, the user can control the temperature and humidity exactly where the plant foliage is located in the cabinet. The easily adjustable spring balanced "Gro-Sensor" has been designed to allow the customer to easily adjust the sensor as the plant grows. The latest control methods are employed in our Climatron Premium Series of growth cabinets which are available with the option of CO<sup>2</sup> control.

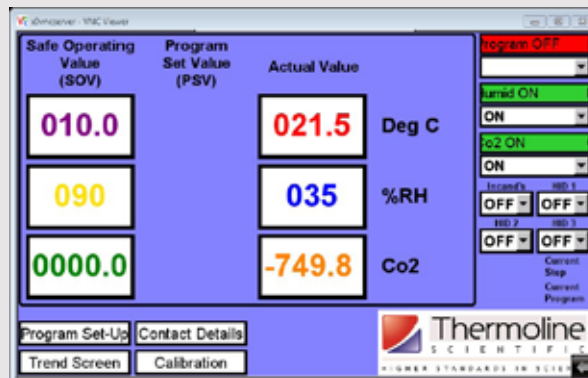
Climatron cabinets are powered by Thermoline's **Select Touch And Run** (STAR 700) touch pad control system. The STAR 700 touch pad control system offers easy to program diurnal control of temperature, lighting, humidity and carbon dioxide.

Standard features of the STAR 700 are a large 154x87mm rugged, touchscreen operator interface terminal which has a full colour TFT LCD display with LED Backlighting. The STAR 700 allows for the operator to synchronize programmed settings to real time.

The STAR 700 has ethernet connectivity which, once connected, will allow the operator to perform all functions via the PC.

The STAR 700 logs the performance of the cabinets to onboard memory. This memory can hold up to 800 days of logged data. For ease of use we have incorporated a live trend screen to allow the operator to quickly check the performance conditions within the cabinet. Alternatively the operator can download the logged data to a USB flash drive for archiving or review via a PC.

No specific software is required to view logged data. A simple spreadsheet program is sufficient (Microsoft Excel or similar).



Viewing window



Uni-Flow Flooring

## Refrigeration

The chambers are supplied with a self contained air cooled refrigeration system. The CLIMATRON-1260 model has the refrigeration system mounted locally within the cabinet, while the larger units have remote air cooled condenser with hotgas bypass for continuous compressor operations resulting in longer compressor life and close tolerance control conditions. The option of water cooled units is also available (not available for model CLIMATRON-1260).

The Climatron Premium Series plant growth chambers are very simple to use. Some units are simple plug in to the power, while the larger units require connection to power and a simple refrigeration system connection. Having done this, plug in power, turn the cabinet on, set your conditions our control system does the rest. Our EPSC (Electronic Proportional Switching Control) will also reduce your running costs. Thermoline also manufacture smaller single door upright diurnal incubators suited for small research groups and applications.

**Note: Continuous operation at temperatures lower than 15°C will result in ice build-up of the refrigeration evaporator.**

# Safety Features

## Alarms

The STAR 700 incorporates a research/experiment safety alarm. In the event that the air temperature exceeds the set values by +/-5.0°C an alarm event is triggered. In the event of an over temperature condition all sources of heating (including Lights) will be isolated. In the event of an under temperature condition the refrigeration system will be isolated. This alarm is auto resetting. An optional volt free BMS connection can be fitted to inform operators of an alarm condition.

All out of tolerance conditions can be viewed in the logged data as the set values are also logged as well as the actual values.

## Safe Operating Values

The STAR 700 has a safe operating (power fail) condition. In the event of a power failure the STAR 700 will reset the diurnal cycle and upon power restore, will control the safe operating values. The safe operating values can be set by the operator.

# Lighting

Standard lighting in all Climatron Premium Series plant growth chambers is achieved by both Incandescent and high pressure sodium lamps situated in a uniform manner to provide an even distribution of light through the work interior. The incandescent, along with the high pressure sodium lamps, give a level of light in the orange to red light spectrum (600-700nm). Thermoline's unique lighting system also allows each of the high pressure sodium lamps to be replaced with metal halide lamps of the same wattage without the need to replace any of the lighting equipment. This allows the end user more versatility in being able change the ratio of spectral intensity by mixing the amount of high pressure sodium lamps and metal halide lamps.

The lamps are housed in a purpose built light loft area with a thermal transparent barrier shield between the lamp loft and growing area. The light loft heat can be removed by ducting out if necessary. Lighting heat is extracted by a vertical ducting outlet with an option horizontal outlet available for those with restricted height above the chamber. The light intensity ranges from 700micromols/ m<sup>2</sup>/sec to 1200micromols/m<sup>2</sup>/sec at 1 metre nominal distance.



Model	Lighting		Ezy-Lift Weight Capacity (kg)
	Standard	Lamps	
	Micromols / M2 / Sec at 1M nominal		300
CLIMATRON-1260	800	5x400 Lucalox	
CLIMATRON-2400	1200	5x1000 Lucalox	
CLIMATRON-2900			
CLIMATRON-5000	1000	8x1000 Lucalox	2 x 300
CLIMATRON-6000			

Model	Capacity (litres)	Access Doors	Internal Dimensions (WxDxH mm)	External Dimensions (WxDxH mm)
CLIMATRON-1260	1260	2	1200x700x1500	1920x870x2020
CLIMATRON-2400	2400		1800x900x1490	2710x1060x2170
CLIMATRON-2900	2900		1800x900x1800	2710x1060x2470
CLIMATRON-5000	5000	4	2370x1400x1530	3330x1670x2210
CLIMATRON-6000	6000		2360x1400x1800	3320x1670x2500

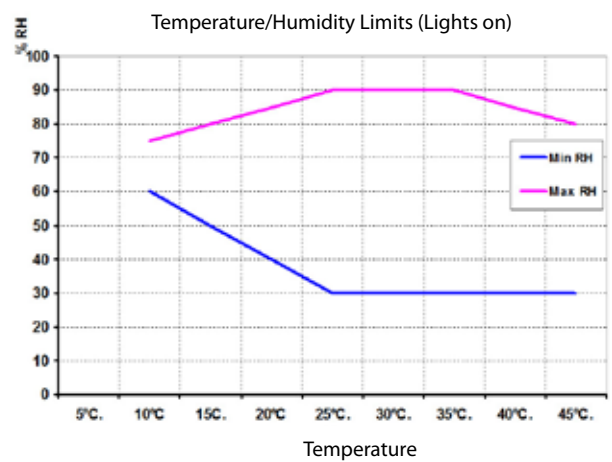
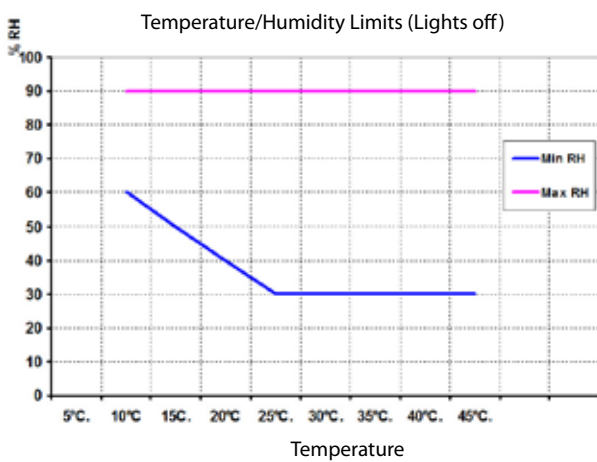
## Electrical

**Models CLIMATRON-1260 :** 415V Neutral 3 Phase supply, 10 Amp Phase, 50Hz

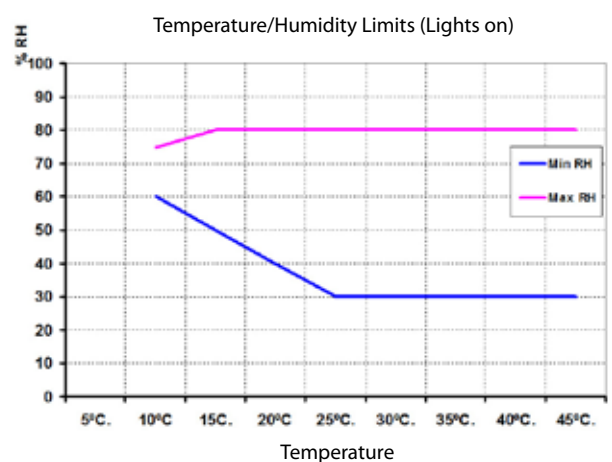
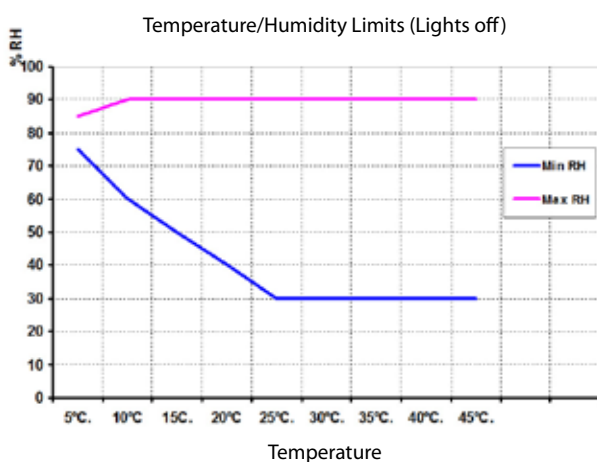
**Models CLIMATRON-2400 and CLIMATRON-2900 :** 415V Neutral 3 Phase supply, 20 Amp Phase, 50Hz

**Models CLIMATRON-5000 and CLIMATRON-6000 :** 415V Neutral 3 Phase supply, 32 Amp Phase, 50Hz

## Performance Envelope for CLIMATRON-1260



## Performance Envelope of CLIMATRON-2400 to CLIMATRON-6000



## Proudly Australian Made

Thermoline Scientific have been manufacturing and distributing high quality laboratory and scientific testing equipment since 1970. Over this time, Thermoline has grown to be a leading brand in the science industry, with our equipment being used in small and large Hospitals, Universities and Research Laboratories across Australia and the Asia Pacific region.

We're proud to say that we are 100% Australian owned and operated.

## Water Feed Tank for Climatron Cabinets

This 55 litre water feed tank allows water to be pumped directly to the cabinet whilst being safely stored on the floor. This specialised tank features a self-priming 12v diaphragm pump, low water protective cut-out, extra-long 6 metre hose and a large opening for easy filling.

### Features

- 55 Litre UV stabilised polytuff tank
- Self-priming 12v diaphragm pump
- 2.6L/min open flow, 50psi
- Low water protective cut-out with audible alarm
- Extra-large filter requires less cleaning
- Large opening for easy filling
- Large outlet for quick drainage
- Extra-long 6 metre hose



Tank Model: 55L-WC-PUMP



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For more information on our complete Climatron range or to speak to a sales team member, please call our head office or email us via the details below:

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