aralab

BIO

FITOCLIMA WALK-IN BIO HP

HIGH PERFORMANCE

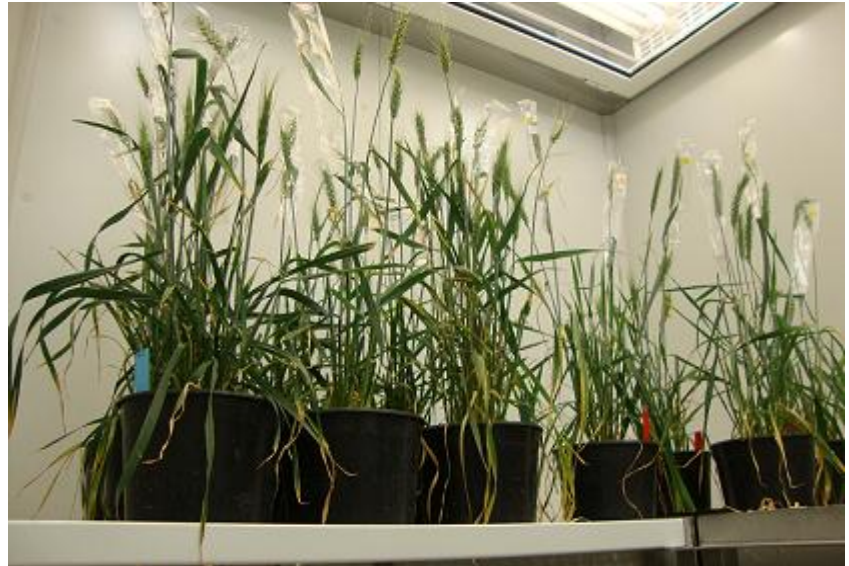**SINGLE TIER PLANT GROWTH CHAMBERS | CONTROLLED ENVIRONMENT ROOMS**

FitoClima High Performance chambers are suitable for plants that require great amounts of light intensity as well as a broad light spectrum.

Common applications include:

Wheat
Corn
Rice
Cotton
Coffee
Cork
Large and tall plants in general
Plants needing high and intense light

ARALAB

ARALAB is a company specialized in designing, developing, manufacturing and servicing of high quality climatic chambers and controlled environment rooms.

Since 1985 we have been perfecting ways to create and control temperature, humidity, light, pressure and many other environmental conditions.

Only the highest quality components are used to manufacture our chambers so customers can have the best equipment for their research and testing purposes.

Aralab. Your own climate.

KEY FEATURES

- Temperature, Humidity, Light intensity and Air Flow controlled with consistent precision through the years

- Adaptive future proof design, with easily removable trays for optimal height distance from light source

- Light source is one single layer on the chamber ceiling with double glass separation and heat extraction system

- All environmental conditions easily programmable with the new ClimaPlus® multicolour touchscreen interface

- Stainless steel shelves and floor for maximum resistance, durability and easy cleaning

- Research protection features, with configurable high / low temperature and humidity alarms and automatic remote notifications

TECHNICAL SPECIFICATIONS

FITOCLIMA WALK-IN BIO *HP* CHAMBERS		
TEMPERATURE RANGE [1]	LIGHTS ON LIGHTS OFF	+5ºC to +45ºC 0ºC to +45ºC
TEMPERATURE PRECISION		± 0,5ºC
TEMPERATURE UNIFORMITY		± 1,0ºC
HUMIDITY RANGE	LIGHTS ON LIGHTS OFF	40 to 80% RH 40 to 90% RH
HUMIDITY PRECISION		± 1% RH
HUMIDITY UNIFORMITY		± 2% RH
TIERS		Single tier, occupying the whole internal area for the most efficient use of the available space.
TRAYS AND GROWTH HEIGHT		Trays can be easily assembled to provide 3 different growth heights: Floor level, at 1.960mm from ceiling/lights First tray level, at 1.550mm from ceiling/lights Second tray level at 1.100mm from ceiling/lights
STANDARD GROWTH AREA [2] FitoClima 5.000 HP FitoClima 10.000 HP FitoClima 20.000 HP FitoClima 25.000 HP		 2,7 m^2 5,2 m^2 10,5 m^2 11,8 m^2
LIGHTS		Located at the ceiling with a combination of Fluorescent and Ceramic Metal Halide. Light source is covered by special glass canopy with heat extraction system to protect the controlled environment conditions
LIGHT INTENSITY [3] **Average intensity at 1.000mm from ceiling/light source** 740 µmoles/m²/s (approx. 55.000 Lux) 535 µmoles/m²/s (approx. 40.000 Lux)		 **Light Type** Fluorescent, Metal Halide and Halogen Fluorescent and Halogen
AIRFLOW VELOCITY		Airflow velocity adjustable by set-point % on the controller
INTERNAL VOLUMES [3]		Ranging from 5.000 to 25.000 liters

INSTALLATION REQUIREMENTS	
WATER (FOR MODELS WITH HUMIDITY CONTROL)	Distilled or demineralized water. 1 to 6 bar pressure and ≤ 10µ siemens conductivity.
WATER DRAIN	Advisable: located at floor level and near the equipment, with a minimum inclination of 10° from chamber to drain
ELECTRICAL CONNECTION	3/N/PE AC 400V ± 10%; 50Hz

[1] Temperature / Humidity range extension available. Please contact Aralab for other technical requirements
[2] Standard configuration assumes all floor area (or respective height adjustable trays) as possible growth area
[3] Other intensities, light types and volumes available. Please consult Aralab for bespoke rooms and special requirements

DIMENSIONS AND DRAWINGS

FITOCLIMA 5.000 HP	
EXTERNAL DIMENSIONS (H x W x D) (mm)	2.610 x 2.170 x 1.770
INTERNAL DIMENSIONS (H x W x D) (mm)	1.960 x 1.700 x 1.600
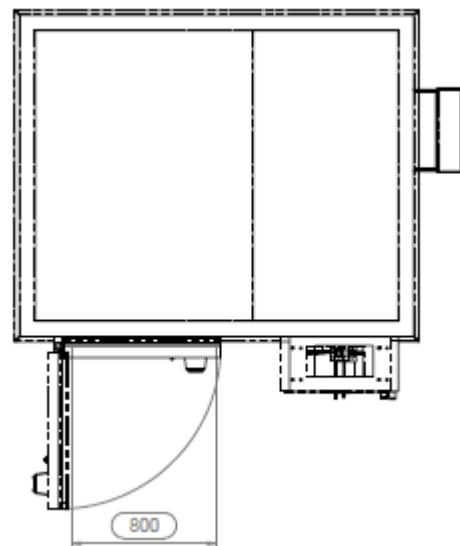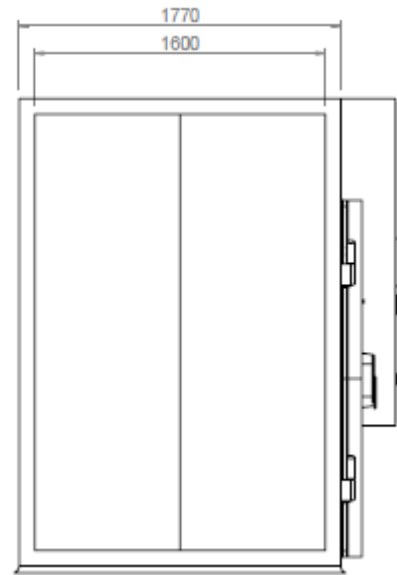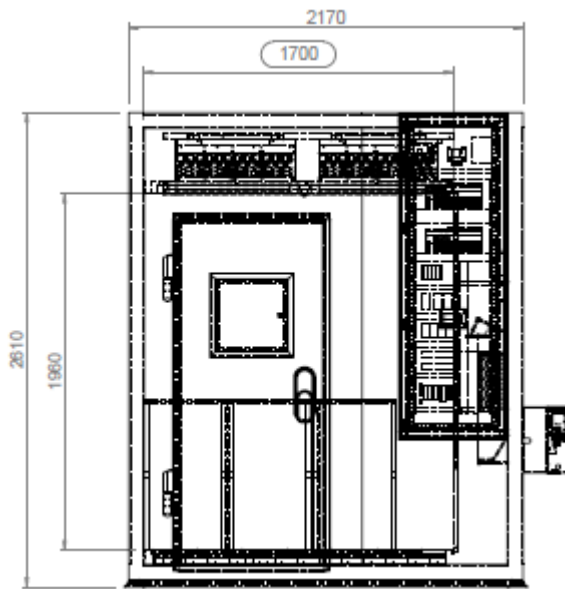
FITOCLIMA 10.000 HP

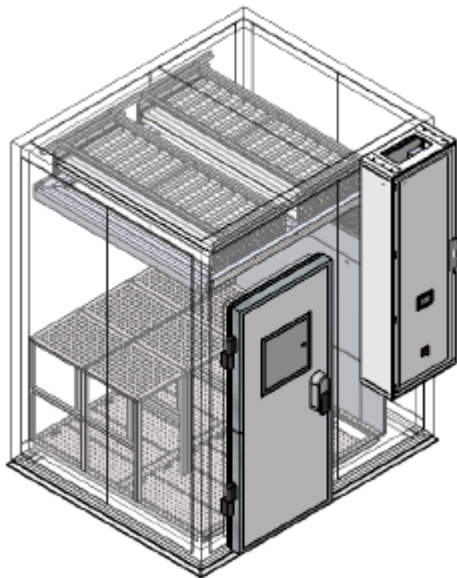|		
EXTERNAL DIMENSIONS (H x W x D) (mm)		2.610 x 4.030 x 2.075
INTERNAL DIMENSIONS (H x W x D) (mm)		1.950 x 3.300 x 1.600

FITOCLIMA 20.000 HP

EXTERNAL DIMENSIONS
(H x W x D) (mm)

2.610 x 3.370 x 4.335

INTERNAL DIMENSIONS
(H x W x D) (mm)

1.960 x 3.200 x 3.300

FITOCLIMA 25.000 HP

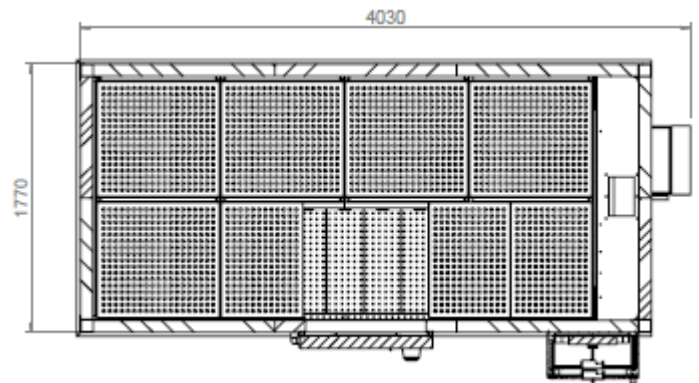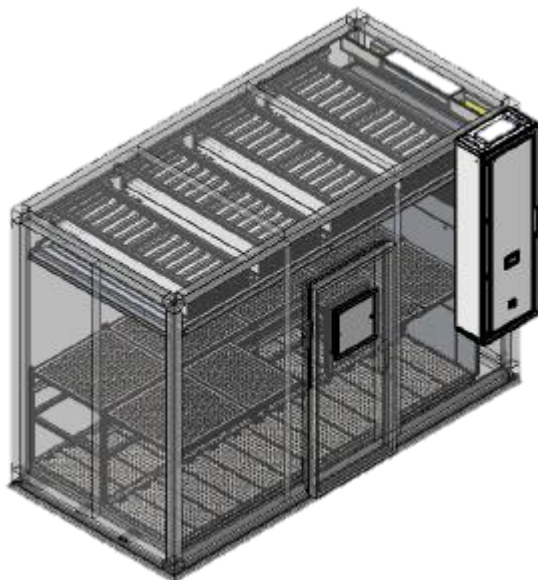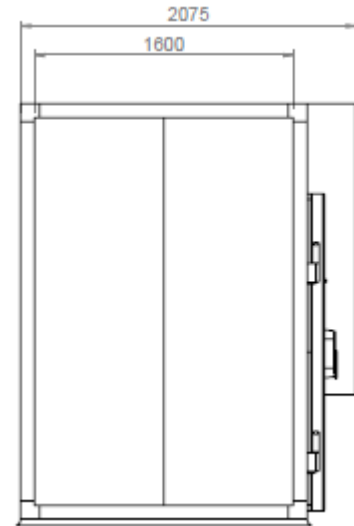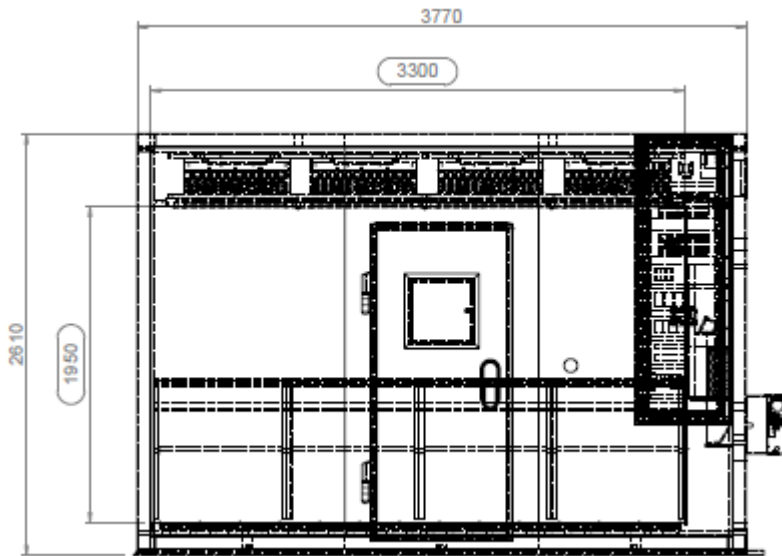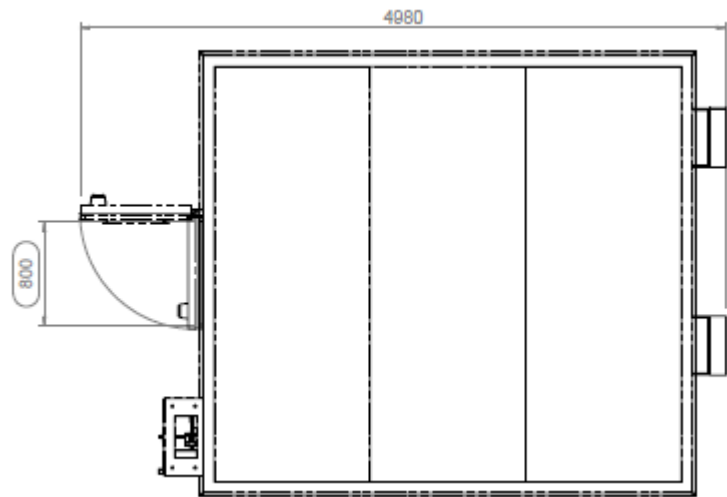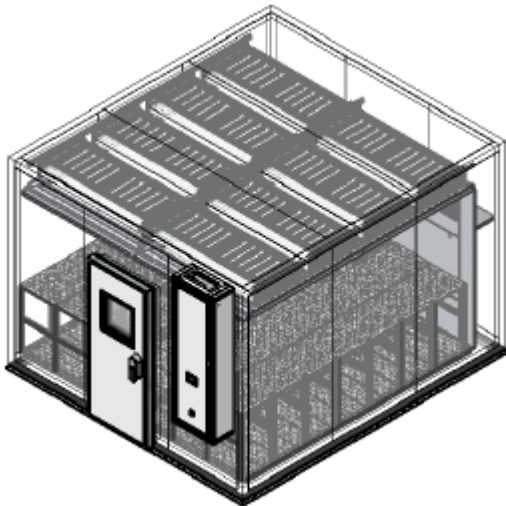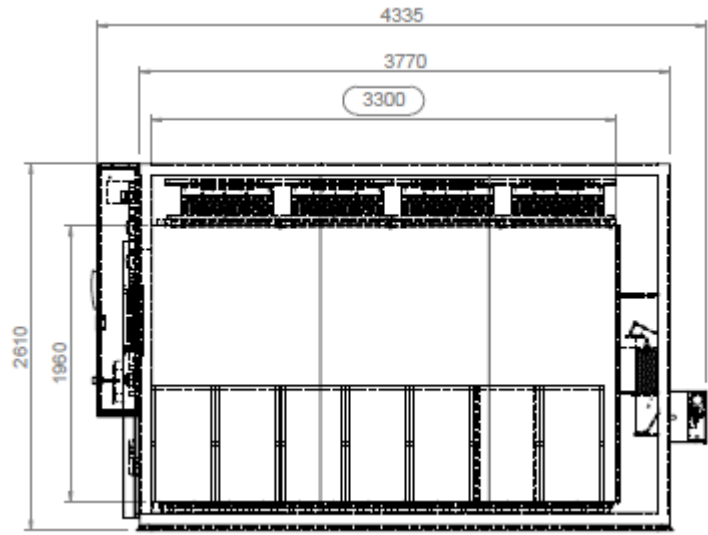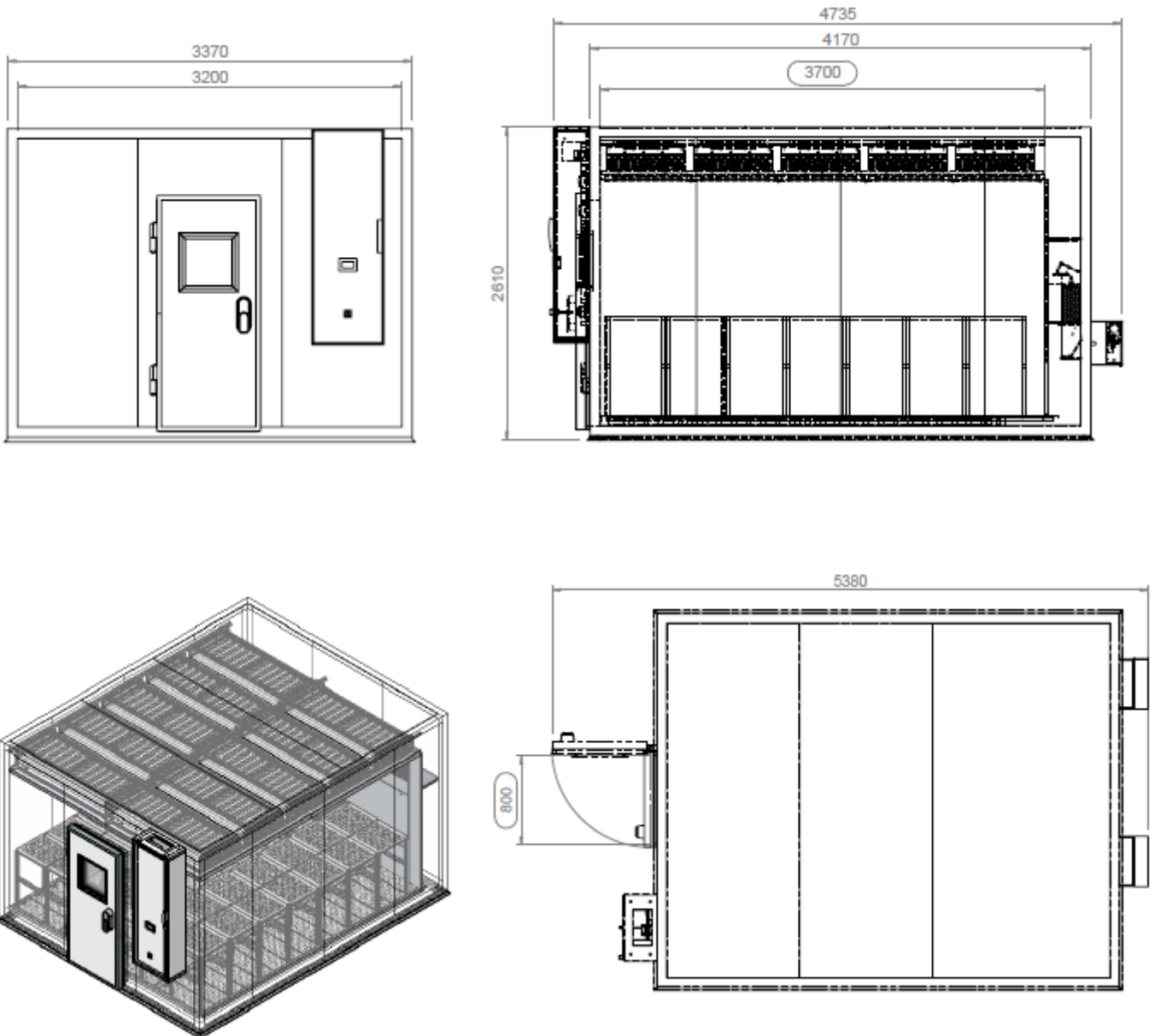|	
EXTERNAL DIMENSIONS (H x W x D) (mm)	2.610 x 3.370 x 4.735
INTERNAL DIMENSIONS (H x W x D) (mm)	1.960 x 3.200 x 3.700

EQUIPMENT DESCRIPTION

CONSTRUCTION

- Exterior: EN 14509 sandwich type high density injected polyurethane foam modular panels, 80 mm thick (other thicknesses available for different specific insulation requirements) with galvanized steel in light gray plastic finish. CFC-free.

- Floor: slip resistant AISI 304 stainless steel floor

- Walls: Galvanized steel with white epoxy paint

- Trays: highly resistant AISO 304 stainless steel

- 60mm Ø side port

- New generation multi-color touch-screen ClimaPlus© controller

- Door with double gasket, observation window with key and safety opening mechanism from the inside

- Open door alarm with configurable time-out function

- Free slots for connecting and integrating external devices with the ClimaPlus controller (CO2, O2 control, Auto Irrigation, Aeration, Radiometers and other)

CLIMATIC CONTROL

- Air based, CFC free, mechanical refrigeration by sealed condenser group

- Dual heating technology with hot gas by-pass and stainless steel electric heaters

- Humidification by ultrasonic generator with automatic water level control and self-cleaning function

- Dehumidification by condensation on the cooling system evaporator

- PT100 Class A temperature sensor and capacitive humidity sensor

AIR FLOW

- Dynamic airflow with EC (variable) blower

- Forced in upward direction through perforated floor

- Vertical laminar airflow across all growth area

- Air renovation through adjustable lateral port-holes

- Airflow velocity adjustable at the ClimaPlus© controller

RESEARCH PROTECTION AND SECURITY

- Independent thermostats for maximum and minimum temperature limits

- Automatic cut-off function, in case of excessive heating or cooling

- Configurable maximum and minimum temperature and humidity limits

- Visual and audible alarms for temperature and humidity band limits

CLIMAPLUS CONTROLLER

- Programmable Logic Controller exclusively developed by Aralab for FitoClima chambers

- Easy to use touch-screen interface

- 168mm x 112mm multicolor display

- Controls every environmental variable available for any specific FitoClima model (Temperature, Humidity, Lights, Airflow, CO2, O2 and connected external devices)

- Friendly program editor for creating 32 programs of 24 segments each, allowing the design of complex and comprehensive climatic simulation programs

- Password protection of the controller functions

- Content and research protection feature, with configurable High and Low Temperature and Humidity alarms and automatic notifications

- Managing, monitoring and recording of all alarms

- Non-volatile memory, allowing the automatic restart of previously defined set-points or on-going programs due to power failure, without losing data

- Real-time monitoring of all the functions and active components of the equipment, allowing for a fast and accurate diagnostic in case of malfunction

- Possibility to control and program events by external commands and with external devices

- Graphical view of running programs conditions and environmental variables

- RS232/485, Ethernet and Wi-Fi for connecting computers to the controller

- ClimaPlus controller functions also available at the PC/Laptop with the FitoLog software pack
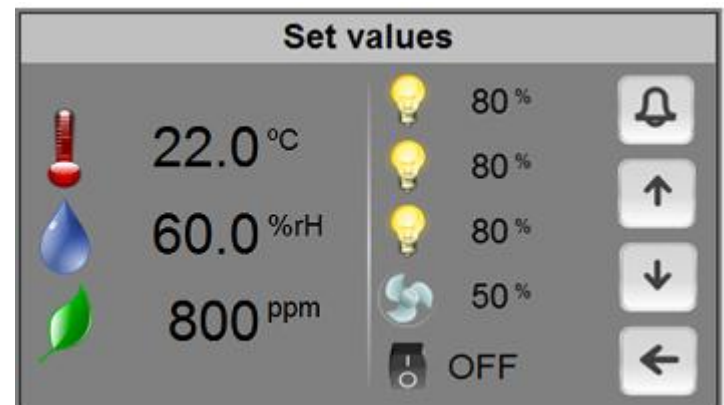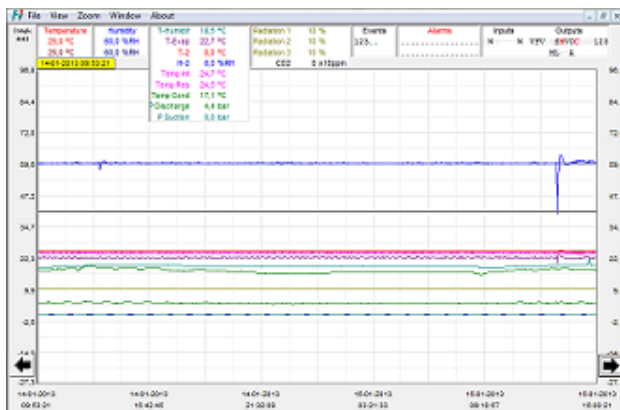
FITOLOG SOFTWARE

The FitoLog software pack is a set of applications designed to facilitate the managing, monitoring and recording of programs and data from the FitoClima chambers. It consists of 3 applications: **FitoLog**, **FitoLogView** and **FitoProgram**.
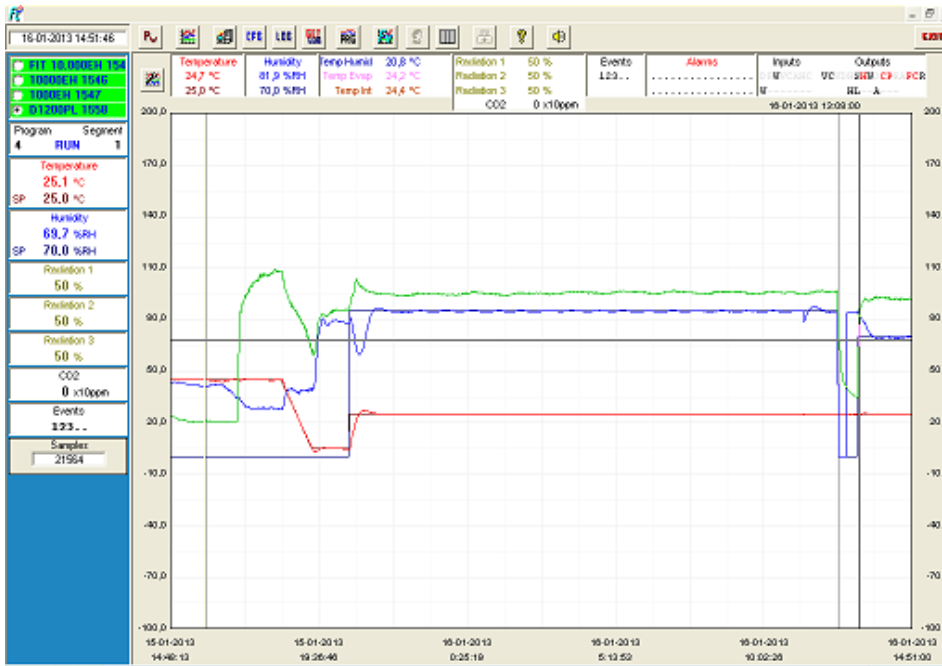
FitoLog: Records and displays in real time all data and details related to the set-points, running variables and equipment behaviour. It also retrieves information about the active components of the chamber, running processes, errors, alarms and allows the configuration of periodic or alarm triggered remote notifications (by email or SMS, depending on existing connections and accessories).

FitoLogView: It is a working tool to process the data recorded by the FitoLog program. One can view, print and export the log contents to other file types, and analyse the data in other data management software (Excel, Star Office, Access or others).
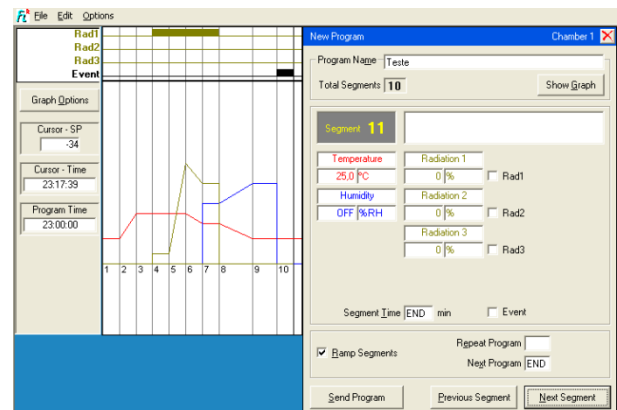
FitoProgram: This application simplifies the creation of programs and its integration on the chamber ClimaPlus controller. Up to 32 programs, each with 24 segments, can be designed and linked to create detailed environmental profiles and simulations.

Research secured with alarms, notifications, fast diagnostics and prompt troubleshooting: With **FitoLog** it is possible to gather data from each of the chambers systems, which makes it a very useful tool to diagnose any necessary maintenance. This tool works as the "black box" of the equipment, giving Aralab technicians the necessary data to remotely carry out a fast and efficient diagnostic. All that is needed is a FitoLog file.

COMMON ACCESSORIES

- FitoLog® software pack for PC/Laptops, enabling data monitoring, logging and managing operations directly on a computer

- Ethernet / Wi-Fi / Other connections

- CO2 controlling unit

- O2 controlling unit

- Radiation control with internal light sensors for accurate intensity regulation

- Positive/Negative pressure unit with HEPA filter

- Phenolic resins coating for Entomology/Insects kit

- Automatic irrigation kit

- Aeration kit for Algae or Hydroponic cultures

- Integrated water tank with electric pump and security valve

- Wall mounting conductivity meter, for water quality control, with assembling accessories

- 5 stage Reverse Osmosis with pre-decalcification water treatment system

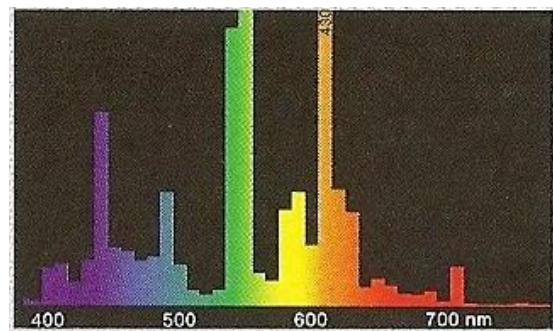- Additional internal electrical connection sockets

MORE ACCESSORIES AVAILABLE. PLEASE CONSULT ARALAB FOR OTHER ITEMS
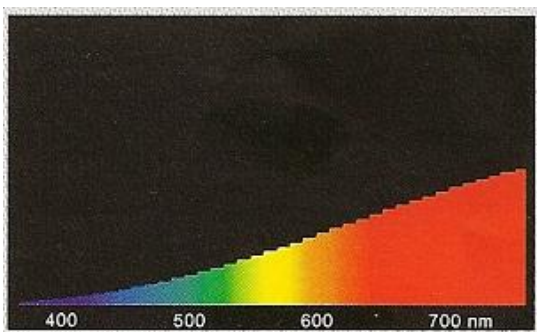
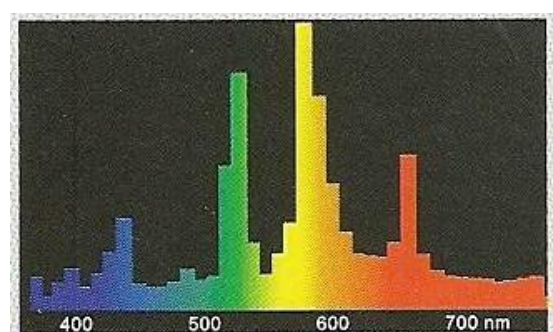# FITOCLIMA HP - LIGHT WAVELENGHTS

Light canopy composed of HF Fluorescent Tubes, Metal Halide and Halogen bulbs
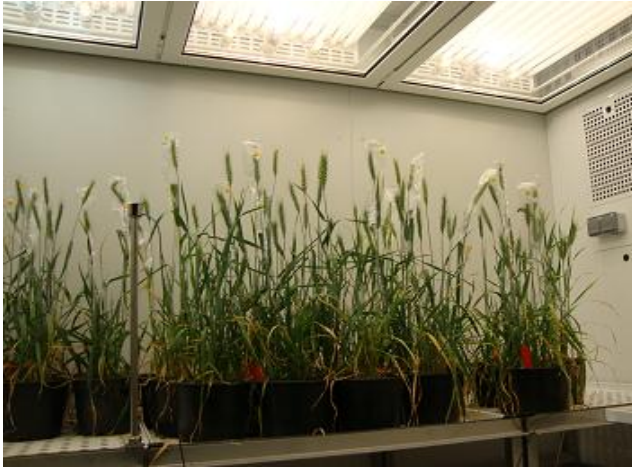

HF Fluorescent lamps wavelength

Halogen lamps wavelength

Metal Halide lamps wavelength

FITOCLIMA HIGH PERFORMANCE CUSTOMER APPLICATIONS
(CUSTOMER SPECIFICATIONS AND ACCESSORIES MAY RESULT IN DIFFERENT PRODUCT IMAGES)

Wheat / Corn research

Mediterranean landscape and exotic plant research

Set of 6 x FitoClima 18.000 PLH Standard Performance chambers

Set of 4 x FitoClima 10.000 HP High Performance chambers

Cork Oak studies

Fruit trees Research

Features and specifications are subject to change. Aralab continuously studies ways to further develop its products to achieve better performances and overall product quality. As a result, characteristics and specifications provided in this document may be subject to changes.

YOUR OWN CLIMATE
Our main goal

Let's meet!
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