FitoClima Reach-In Bio chambers

Fitoclima 600   Fitoclima 1200 (optional glass door and high performance lights)

Climatic chambers designed for research in Biosciences

aralab

YOUR OWN CLIMATE

Aralab

ARALAB is a company specialized in designing, developing, manufacturing and servicing of high quality Climatic Chambers.

For more than 25 years we have been perfecting ways to create and control temperature, humidity, radiation 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 chambers. Your own climate.

Key Features

- Wide environmental performance ranges, enabling greater control of climatic conditions
- Optimal internal thermodynamics to ensure uniformity of climatic conditions
- Flexible, future proof chambers, designed for numerous applications
- Modular design, allowing different testing requirements
- Easy to use and maintain
- Nonpolluting construction and cooling
- Equipped with ClimaPlus touch-screen controller
- DIN, EN, IEC, ISO, MIL, NP and UNE compliant

S600 PLH with optional glass door

Models reference

Models	Controlled environmental variables
S600 & D1200 **P**	Temperature only
S600 & D1200 **PH**	Temperature and Humidity
S600 & D1200 **PL**	Temperature and Lights
S600 & D1200 **PLH**	Temperature, Lights and Humidity
S600 & D1200 **PDH**	Temperature and Low Humidity levels

Dimensions

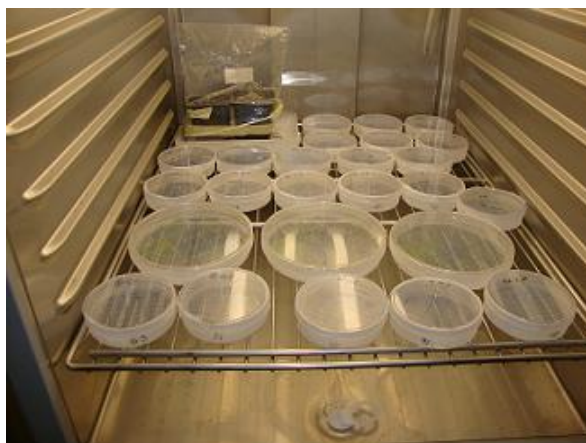|	Exterior Dimensions		Interior Dimensions	
	S600	*D1200*	*S600*	*D1200*
Width	730 mm	1.450 mm	600 mm	1.320 mm
Depth	920 mm	810 mm	660 mm	660 mm
Height	1.980 mm	1.980 mm	1.340 mm	1.340 mm
Internal space volumes			600 liters	1.200 liters

Technical specifications

Temperature Stability chambers

Designed for wide range temperature stability and control, these chambers provide a perfect environment for product testing under constant climatic conditions. Ideally suited for biological material storage, incubation and tissue storage.

Temperature only chambers **(P models)**	600 liters & 1200 liters P model	
Temperature Range	-5ºC to +45ºC (temperature range upgrade possible, up to 60°C)	
Stability	± 0,4 ºC	
Uniformity	± 1,0 ºC	
Shelves included (530 mm x 640 mm)	4	8
Additional shelves (optional) *	+4 (up to 8 shelves total)	+8 (up to 16 shelves total)

* consult available accessories

Temperature and Humidity chambers

In addition to temperature, and for applications that also require control of humidity, the PH models offer optimal stability of all climatic conditions. A flexible, cost effective and future proof solution for storage or incubation purposes.

Temperature & Humidity chambers (PH models)	600 PH	1200 PH
Temperature Range	-5ºC to +45ºC (temperature range upgrade possible, up to 60°C)	
Stability	± 0,4 ºC	
Uniformity	± 1,0 ºC	
Humidity Range	30% RH to 98% RH	
Precision	± 1 % RH	
Fluctuation	± 2 % RH	
Shelves included (530 mm x 640 mm)	4	8
Additional shelves (optional)	+4 (up to 8 shelves total)	+8 (up to 16 shelves total)

* consult available accessories

Temperature and Light chambers

With individually controllable shelf lighting, the PL chambers are ideally suited for Plant Growth. Depending on the height needed for the plant cultivation, the shelves can be easily mounted and dismounted or even upgraded to provide more radiation to the plants.

Temperature & Light chambers (PL models)		600 PL	1200 PL
Temperature Range Lights ON Lights OFF		5ºC to +45ºC -5ºC to +45ºC (temperature range upgrade possible, up to 60°C)	
Stability		± 0,5 ºC	
Uniformity		± 1,0 ºC	
Lighting levels and radiation included $\mu E/m^2/s$ at 150mm from lamps at 25ºC	Option 1	4 lighting levels of 4 x 18W (0 to 250 $\mu E / m^2s$ each)	8 lighting levels of 4 x 18W (0 to 250 $\mu E / m^2s$ each)
	Option 2	2 lighting levels of 8 x 18W (0 to 500 $\mu E / m^2s$ each)	4 lighting levels of 8 x 18W (0 to 500 $\mu E / m^2s$ each)
	Option 3	2 lighting levels of 4 x 55W PLL (0 to 650 $\mu E / m^2s$ each)	4 lighting levels of 4 x 55W PLL (0 to 650 $\mu E / m^2s$ each)
	Option 4	1 lighting level of 8 x 55W PLL (0 to 1200 $\mu E / m^2s$ each)	2 lighting levels of 8 x 55W PLL (0 to 1200 $\mu E / m^2s$ each)
Shelves included (530 mm x 640 mm)		Same as lighting levels	

Temperature, Humidity and Light chambers

In addition to a perfect temperature and radiation control, the *PLH* models will provide the relative humidity levels needed for any required simulation. This flexibility to control all climatic variables on the same chamber can prove very useful and economical to meet the long term changing requirements and purposes that a user may face during time.

Temperature, Humidity & Light (PLH models)		600 liters PLH	1200 liters PLH
Temperature Range Lights ON Lights OFF		5ºC to +45ºC -5ºC to +45ºC (temperature range upgrade possible, up to 60°C)	
Stability		± 0,5 ºC	
Uniformity		± 1,0 ºC	
Humidity Range Lights ON Lights OFF		40% to 85% RH 40% to 95% RH	
Stability		± 1 % RH	
Uniformity		± 2 % RH	
Lighting levels and radiation included µE/m²/s at 150mm from lamps at 25ºC	Option 1	4 lighting levels of 4 x 18W (0 to 250 µE / m²s each)	8 lighting levels of 4 x 18W (0 to 250 µE / m²s each)
	Option 2	2 lighting levels of 8 x 18W (0 to 500 µE / m²s each)	4 lighting levels of 8 x 18W (0 to 500 µE / m²s each)
	Option 3	2 lighting levels of 4 x 55W PLL (0 to 650 µE / m²s each)	4 lighting levels of 4 x 55W PLL (0 to 650 µE / m²s each)
	Option 4	1 lighting level of 8 x 55W PLL (0 to 1200 µE / m²s each)	2 lighting levels of 8 x 55W PLL (0 to 1200 µE / m²s each)
Shelves included * (530 mm x 640 mm)		Same as lighting levels	

Low Humidity Seed Drying chambers

With Aralab highly advanced air drying system, these chambers guarantee an unsurpassed stability of cool and dry conditions, making them perfect for Seed drying purposes. The *PDH* chambers maintain their flexibility by allowing a wide temperature range for other demands and future needs.

Temperature & Low humidity chambers (PDH models)	600 liters PDH	1200 liters PDH
Temperature Range	-5ºC to +45ºC (temperature range upgrade possible, up to 60°C)	
Stability	± 0,5 ºC	
Uniformity	± 1,0 ºC	
Humidity Range	Ambient down to 5% RH	
Stability	± 1 % RH	
Uniformity	± 2 % RH	
Shelves included (530 mm x 640 mm)	4	8
Additional shelves (optional) *	+4 (up to 8 shelves total)	+8 (up to 16 shelves total)

* consult available accessories

Suggested lights and shelving configurations

Because different applications require different setups for shelves and lighting, we suggest some standard setups. According to the research needs, lights and shelves can be easily removed or adjusted in height at any time

4 light levels of 4 x 18W
[Standard configuration - **Option 1**]
Approximate height between shelves: 19 cm

2 light levels of 8 x 18W
[Standard configuration **Option 2**]
Approximate height between shelves: 50 cm

1 light level of 8 x 55W
[Standard configuration **Option 3**]
Approximate height between shelves: 120 cm

600 liters internal volume

The same light options are available for the 1200 liters chamber but with even more flexibility. It is possible to choose similar configurations on both sides of the chamber, thus increasing growth area under similar light conditions, or to have different configurations on each side of the chamber.

1.200 liters internal volume

Technical Characteristics, Software & Accessories

Features:

- Monobloc design, with polyurethane insulation and stainless steel interior and exterior
- Front panel with Zincor steel and gray epoxy paint
- Pivoting door with spring lock, magnetic gasket and safety lock
- 4 or 6 casters with built in brakes
- 50mm diameter side port
- ClimaPlus Bio touch-screen controller
- Flexible shelving configuration
- Audible and visual alarm system
- Open door alarm
- Free connection slot for external devices

Easily removable and interchangeable lighting levels

Temperature and Humidity

- Electronic capacitive humidity sensor
- Low-noise, air based, CFC free mechanical refrigeration by sealed condenser group
- Humidification by ultrasonic generator with automatic level control and self-cleaning function
- Dehumidification by condensation of the cooling system evaporator
- Heating by stainless steel electric resistors
- Thermal safety with maximum and minimum temperature limits controlled by independent thermostats with incorporated alarms
- Air-flow forced by sealed fans with electronic switching
- Air renovation through adjustable breathing holes
- **Note:** the humidification system works exclusively with deionized or demineralized water, with an inlet pressure 1-6 bar and conductivity of ≤ 5µ siemens

S600 PH with 5 stainless wire shelves

Air Flow

- Air-flow forced by sealed fans with electronic switching
- Air renewal through adjustable breathing holes

Control Panel

On the top of the chamber and equipped with:
- CLIMAPLUS 500 Programmable Controller
- Safety High / Low thermostat, audible alarm

Communications Panel

On the left side of the chamber:

- RS232 and USB interface for PC connection
- Extra input for remote alarm connection

From left to right: S600PL with 3 lighting levels of 4 x 18W; S600PLH with 1 LED Grow Master (top) and 2 levels of 4 x 18W; S600 PLH with 2 shelves of 8x18W fluorescent cool white lights and entomology research nets on each wire shelf

Controller

The Fitoclima Bio chambers are equipped with the ClimaPlus touch-screen controller with dual microprocessor technology for controlling, monitoring and registering all operating data.

- Programmable PLC ClimaPlus touch-screen developed for Aralab
- Easy to use and program
- Non-volatile memory
- Configuration of up to 32 climatic programs with 24 different segments
- 0,1ºC temperature resolution
- 0,1% RH humidity resolution
- Managing and monitoring alarms
- Possibility of integrating external commands and devices with ClimaPlus controller
- RS232 output for connecting devices
- Password protection of controller functions

Software

The **FitoLog** software is a set of applications designed to monitor and register data from the chambers processes variables.

The software consists of 3 applications: **FitoLog**, **FitoLogView** and **FitoProgram**.
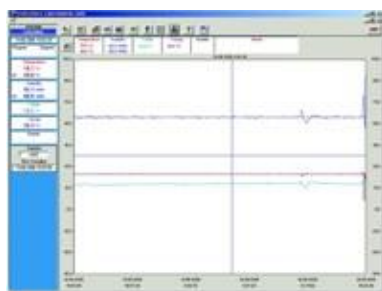
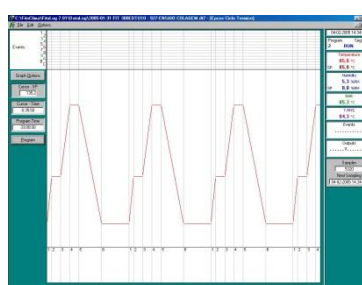| *FitoLog*	*FitoLogView*
(data acquisition, software view)	(graphic overview of the tests)
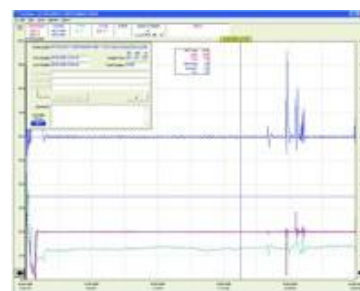
FitoLog: Displays and records in real time all the data and details of the measurements and respective set-points in a file. It also retrieves the data of process variables, errors, alarms and allows external alerts configuration, which may include Email or SMS to report the condition of the equipment or warnings of alarms.

FitoLogView: It is a working tool to process the data acquired by FitoLog. You can view, print and export to other file types, and analyze the data in other programs (Excel, Access or others).

FitoProgram: This application allows the designing of test programs and its integration on the chamber controller.

With **FitoLog** it is possible to gather data from each of the chambers subsystems, which makes it a very useful tool to diagnose any necessary maintenance. This tool is the "Black Box" of the Chamber, giving our technicians the necessary data to remotely carry out a fast and efficient diagnostic. All that is needed is a log file with the occurrence, which can be analyzed by Aralab technicians in less than an hour.

Other optional Accessories

- FitoLog / FitoView software for data monitoring, logging and programs configuration on the PC
- RS232 cable for PC connection
- CO2 Controlling system
- Wall mounting conductivity meter, for water quality control, with assembling accessories
- Water Demineralizer
- 30 liter water tank with electric pump and security valve
- Glass door with double glazing
- Stainless steel wire shelves
- LED Grow Master light level (± 250 µE - m2s) / shelf
- LED Flex Grow light level (± 200 µE - m2s) / shelf), with independent Blue, Red and Far Red spectrum configuration
- 4 x 18W light level (± 250 µE / m² / s)
- 8 x 18W light level (± 500 µE / m² / s)
- 4 x 55W light level (± 650 µE / m² / s)
- 8 x 55W light level (± 1200 µE / m² / s)
- Please consult Aralab for any additional accessories required
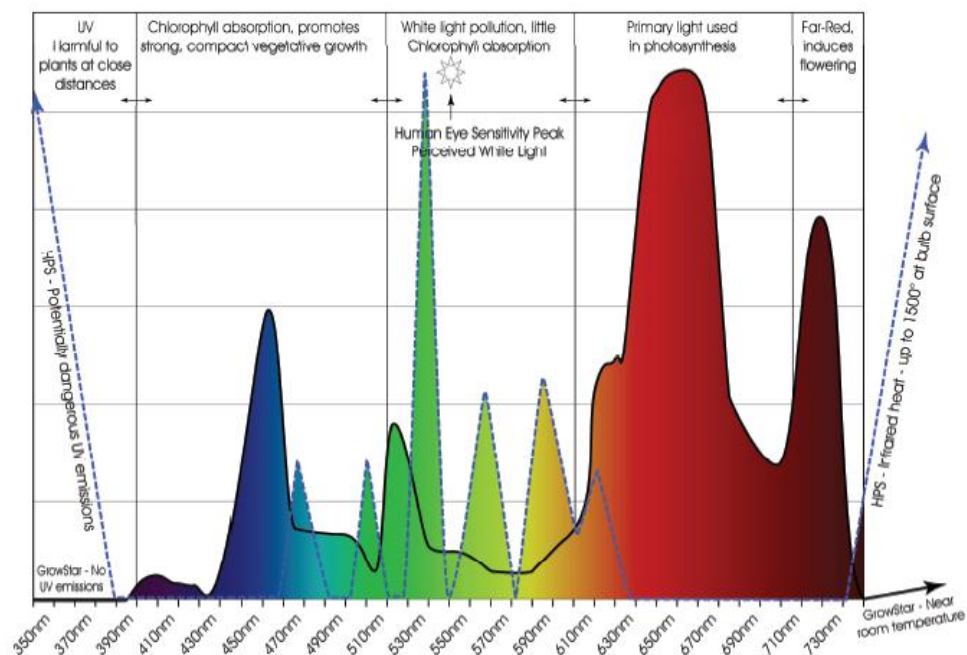

Standard 4x18W fluorescent light level
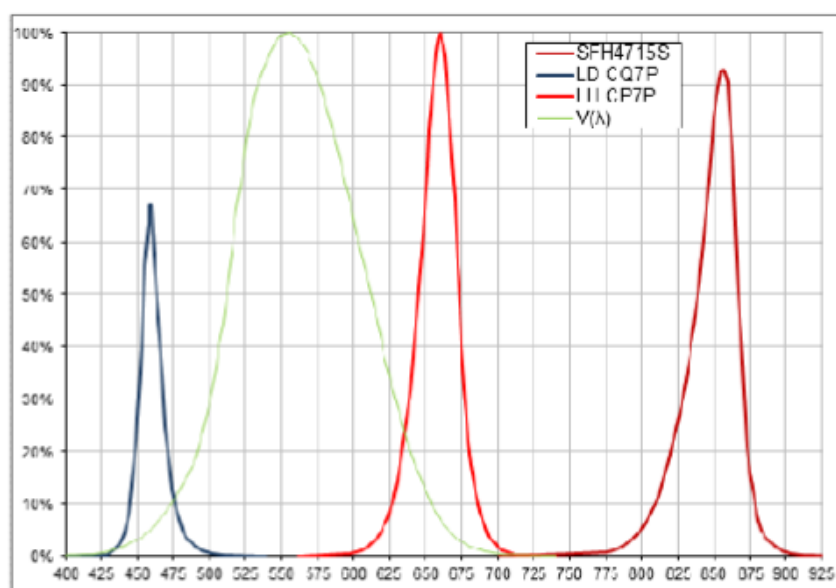

Optional LED Grow Master light level

Optional LED Flex Grow light level

Optional high performance 4 (or 8) x 55W PLL lighting

Spectrum for the LED Grow Master light level (black line on the graphic)

Spectrum for the LED Flex Grow light level that allows independent adjustment of the Blue, Red and Far Red lights

Installation Requirements

To assure a correct functioning of the chamber, the following installation conditions are required:

Installation site
The place should be easily accessible, according to equipment dimensions and weight. It should have good air circulation and a room temperature between 10º and 26ºC. The floor should be leveled and a minimum distance of 50cm from the walls of other equipment must be kept.

Electrical supply
Near the equipment with the specified requirements.

Humidification circuit and demineralized water (for models with Humidity)
The humidification circuit works exclusively with distilled or demineralized water. For this circuit, a water admission pressure of 1 to 6 bares and conductivity of ≤ 5μ Siemens is required.

Drain
At floor level and near the equipment. The draining of the humidification and cooling systems water is done by gravity. For a correct draining there should be a minimum inclination of 10º in a descending trajectory from the chambers draining pipe until the sewage system.