



## TESTING

Aralab Curing Test Chambers

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# FITOCLIMA S600 / D1200 PHCI



Environmental testing chambers for curing mortar (cement, lime and plaster)

## Aralab

ARALAB is a company specialized in design, development, manufacturing and after-sales service in temperature and climatic chambers for environmental simulation.

Since 1985 we specialized in controlling temperature, humidity, radiation, air flow and other required environmental testing conditions.

At ARALAB we integrate only the highest quality components available in the market to manufacture our chambers. And all in conformity with our ISO:9001 certifications for Quality Management.

ARALAB test chambers have been developed to meet the most demanding international standards.



## Aralab FitoClima S600 & D1200 PHCI highlights

- 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



Fitoclima D1200 with optional glass door



Special designed trays for curing samples

## Technical specifications

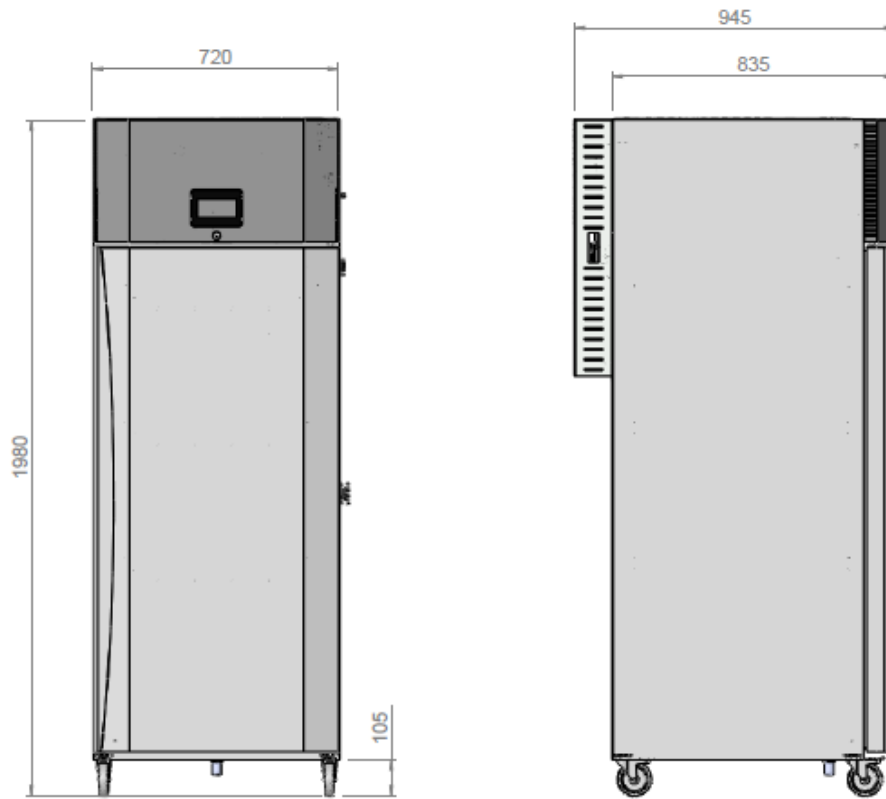
| <b>FitoClima 600 PHCI</b> |                                |
|---------------------------|--------------------------------|
| Temperature range         | -5°C to 45°C                   |
| Display resolution        | 0,1 °C                         |
| Precision                 | ± 0,5 °C                       |
| Fluctuation               | ± 0,5 °C                       |
| Uniformity                | ± 1,0 °C                       |
| Humidity range            | 35% to 98% RH                  |
| Display resolution        | 0,1 % RH                       |
| Precision                 | ± 1 % RH                       |
| Fluctuation               | ± 2 % RH                       |
| Uniformity                | ± 2 % RH                       |
| Shelves                   | 4 shelves with 530 mm x 630 mm |
| Volume                    | 600 liters                     |
| Electrical supply         | 230V ± 10%; 50Hz; 5 Amp.       |

| <b>FitoClima 1200 PHCI</b> |                                |
|----------------------------|--------------------------------|
| Temperature range          | -5°C to 45°C                   |
| Display resolution         | 0,1 °C                         |
| Precision                  | ± 0,5 °C                       |
| Fluctuation                | ± 0,5 °C                       |
| Uniformity                 | ± 1,0 °C                       |
| Humidity range             | 35 % to 98% RH                 |
| Display resolution         | 0,1 % RH                       |
| Precision                  | ± 1 % RH                       |
| Fluctuation                | ± 2 % RH                       |
| Uniformity                 | ± 2 % RH                       |
| Shelves                    | 8 shelves with 530 mm x 630 mm |
| Volume                     | 1.200 liters                   |
| Electrical supply          | 230V ± 10%; 50Hz; 7 Amp.       |

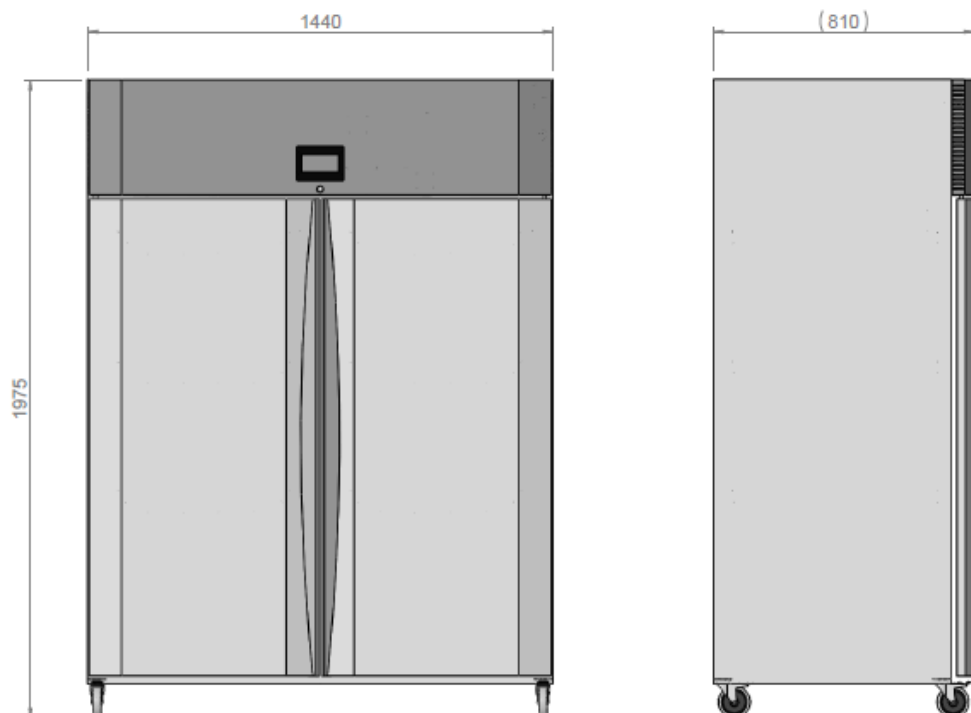
## Dimensions

| <b>Model</b> | <b>Exterior</b> |              | <b>Interior</b> |              |
|--------------|-----------------|--------------|-----------------|--------------|
|              | <b>S600</b>     | <b>D1200</b> | <b>S600</b>     | <b>D1200</b> |
| Width        | 720 mm          | 1.440 mm     | 600 mm          | 1.320 mm     |
| Depth        | 945 mm          | 810 mm       | 660mm           | 660 mm       |
| Height       | 1.980 mm        | 1.975 mm     | 1.395 mm        | 1.340 mm     |

### **FITOCLIMA 600**



### **FITOCLIMA 1200**



**CONSTRUCTION**

- Highly resistant stainless steel in the interior and exterior
- Photostability chamber with shelves in reflective white coating for better light uniformity and distribution
- Polyurethane insulation
- Front panel with zincor steel and gray epoxy paint
- Pivoting door(s) with spring lock, magnetic gasket and safety lock(s)
- 4 or 5 casters with built in brakes for effortless mobility and control
- 35mm diameter side port
- New generation multi-color touch-screen ClimaPlus© controller
- Open door alarm with configurable time-out function
- Free slots for connecting and integrating external devices (CO2 control, Radiometers or others) on the ClimaPlus controller
- Accessible technical compartment for faster maintenance procedures



**CLIMATIC CONTROL**

- CFC free, mechanical refrigeration by hermetic 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 RTD temperature sensor and capacitive humidity sensor



**AIR FLOW**

- Dynamic airflow with EC (variable) blower
- Air renovation through adjustable lateral port-holes
- Uniform air speed across shelves
- Optional Airflow velocity adjustable at the ClimaPlus© controller

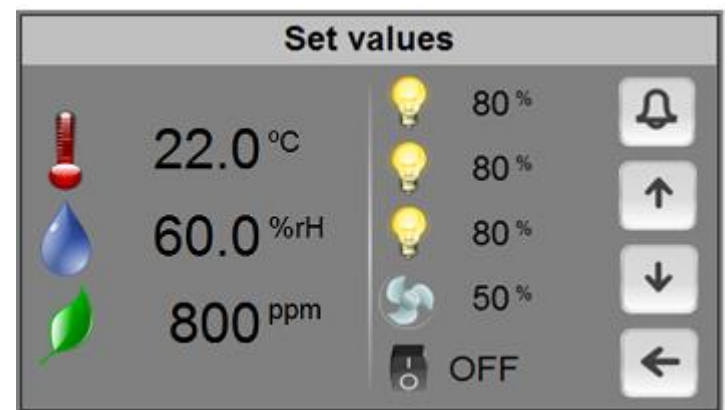
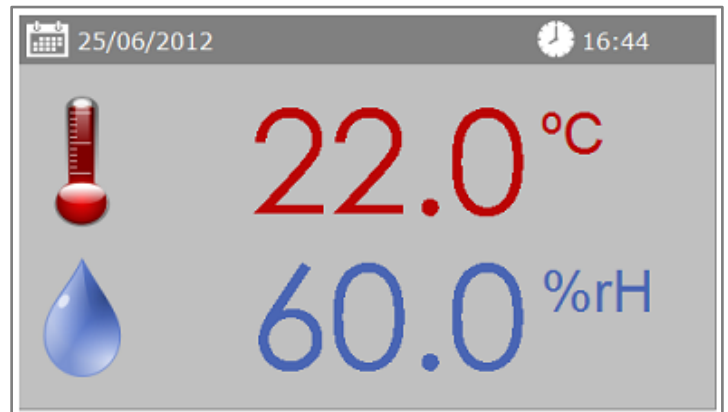


**CONTENT PROTECTION AND SECURITY**

- 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

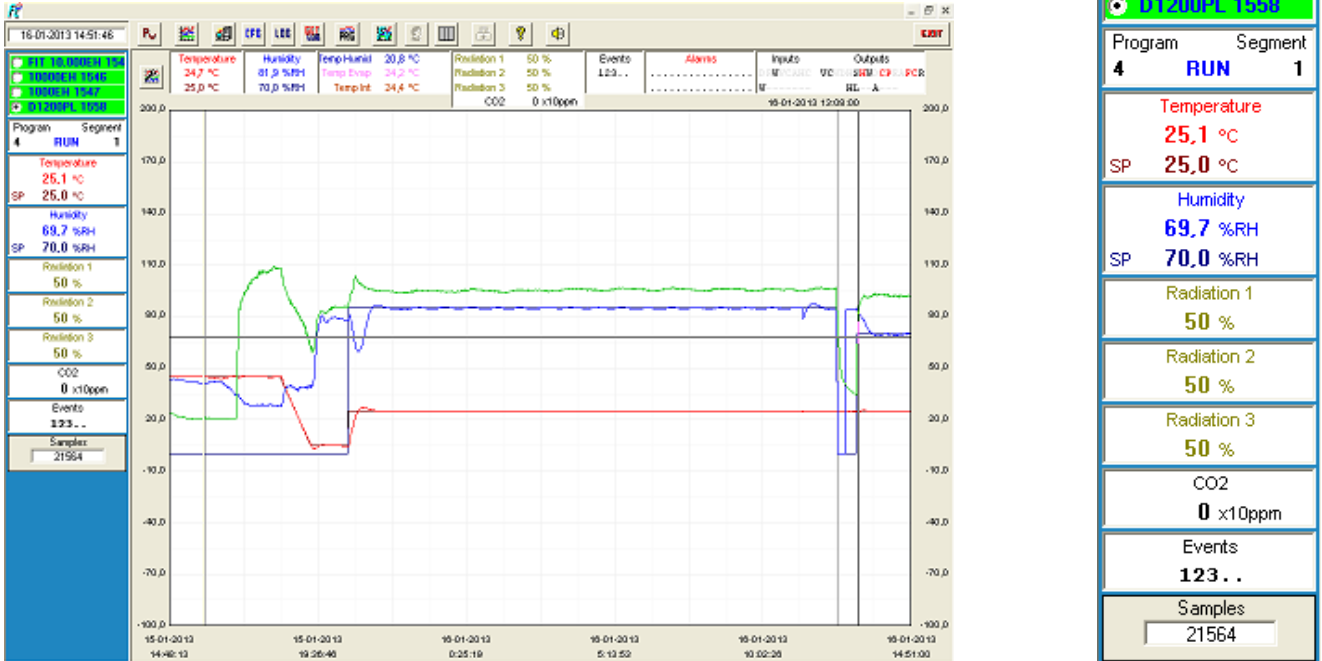
## ClimaPlus Controller

- 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, CO<sub>2</sub>, O<sub>2</sub> 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 programs and climatic variables
- Ethernet port for connecting computers to the controller
- ClimaPlus controller functions also available at the PC/Laptop with the FitoLog software pack

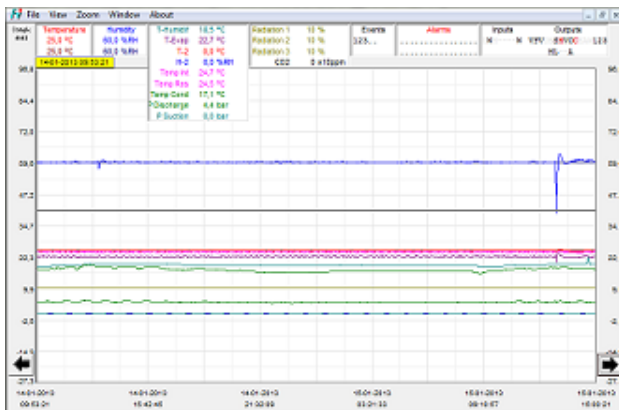


## Software

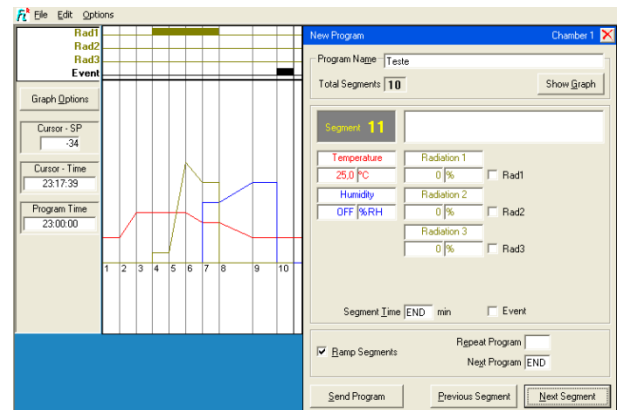
The FitoLog software pack is a set of applications designed to facilitate the managing, monitoring and recording of programs and data from the FitoClima chambers. It consists of 3 applications: **FitoLog**, **FitoLogView** and **FitoProgram**.



**FitoLog:** Records and displays in real time all data and details related to the set-points, running variables and equipment behavior. 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.

**Content of the chamber is 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.

### Optional accessories

- FitoLog / FitoView software for data monitoring, logging and programs configuration on the PC
- Ethernet cable for PC connection
- CO2 Controlling and monitoring system
- Wall mounting conductivity meter, for water quality control, with assembling accessories
- Water Demineralizer
- 20 liter water tank with electric pump and security valve
- Glass door with double glazing
- Additional Stainless steel wire shelves
- Reinforced shelves for heavy samples

### Accessory for accelerated radiation aging

- 8 fluorescent and UV lamps

### Accessory for carbonation

- CO2 Controlling and monitoring system
  - Reading range: 0 to 30% or up to 5.000 PPM
  - Cell: Infrared gas analyzer
  - Precision:  $\pm 2\%$  of the scale or  $\pm 0,2\%$  CO<sub>2</sub>
  - Exit: analogical for 4 ... 20mA logging
  - Electrical supply: 240 V, 50 Hz





## 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 10° and 26°C. 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

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  $\leq 5\mu$  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 10° in a descending trajectory from the chambers draining pipe until the sewage system.

**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.