



TESTINGLAB
EQUIPMENTS



VISITABLE OR WALK-IN
CLIMATIC CHAMBERS

EICWK SERIES
***WALKIN*line**



INTRODUCTION

The EICWK series stability test chambers are designed to offer customers a large space to test large quantities of samples in parallel in different sectors such as pharmaceutical stability, preservation, cosmetics, food, materials, etc. Always guaranteeing the stability and precision conditions that the EIC series reach-in chambers can offer.

The construction and its designs are completely flexible and allow to adapt to the space of the existing building in the best possible way thanks to the possibility of modifying the standard measures, which allows us to build chambers smaller than 5 m³ up to volumes exceeding 100 m³...

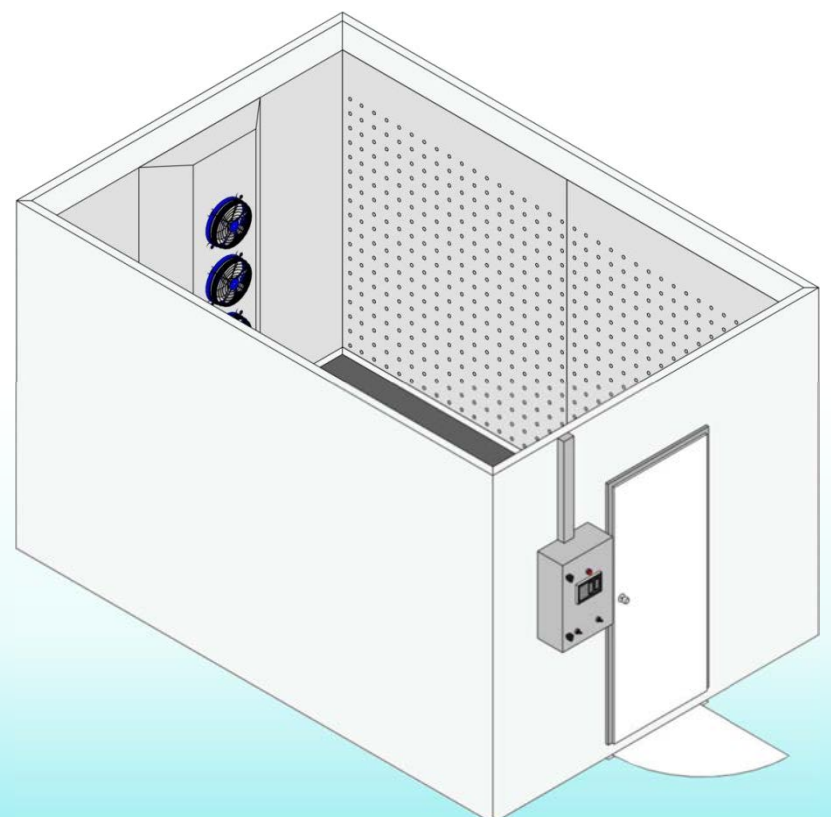
The control is also a completely flexible element with options based on touch screen, simple controllers or advanced controllers for data logging with FDA 21 CFR part 11 compliance..



MAIN FEATURES OF THE EIC WK SERIES

MAIN ADVANTAGES

- ✓ Volumes from 5 to 30 m³ in the standard catalogue.
Special volumes on request.
- ✓ Temperature ranges from +10°C to +60°C, extendable.
- ✓ Humidity ranges from 30% to 90% RH, extendable
- ✓ Interior in AISI304 stainless steel.
- ✓ Galvanized exterior painted in white.
- ✓ Insulation with CFC-free polyurethane.
- ✓ 100 mm non-slip stainless steel floor.
- ✓ Lock with key and internal safety opening.
- ✓ Environmentally friendly low GWP refrigerant gases.



AIR FLOW



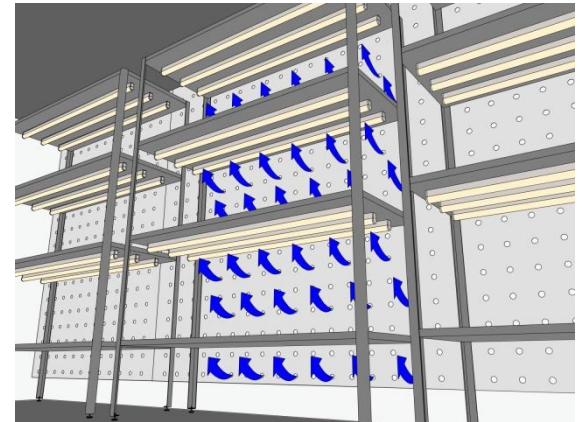
The EIC WK chambers have been designed to provide an optimised air flow system, generating the most stable and uniform climatic conditions inside.

There are two chamber models available depending on the position of the fans and the technical area.

EICV WK models with fans positioned at the top of the chamber, with a downward flow along the walls of the chamber and a surrounding recirculation towards the centre of the chamber, creating a horizontal air flow on the shelves.

EICH WK models, positioned at the rear of the chamber with vertical fans creating an air flow through the perforated side walls and generating a horizontal air flow on all the shelves and being recirculated towards the rear of the chamber.

In both options the technical area of the chamber is located in an accessible area for better maintenance of the systems, allowing easy and comfortable access.



CONSTRUCTION

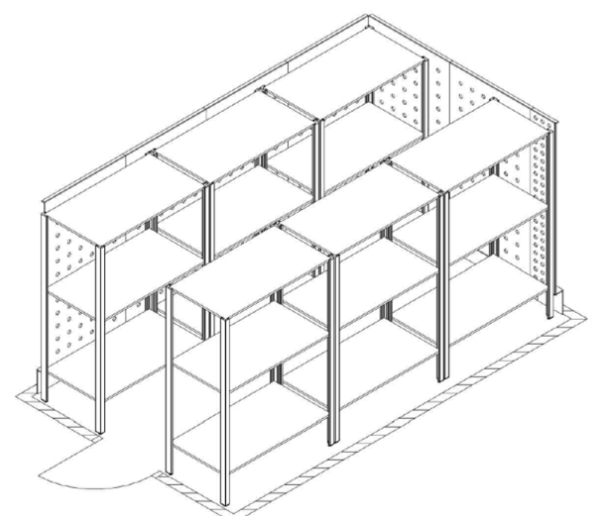
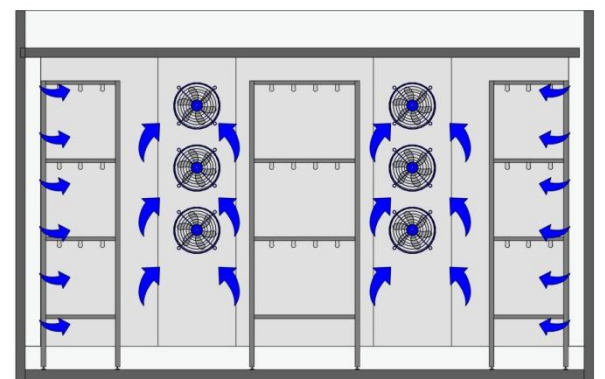


Built with sandwich panels with different thicknesses depending on the temperature required by the client, the volumes of the chambers are adapted to the client's storage needs.

The insulation based on rigid polyurethane foam without CFC or HCFC, has a density of 40 Kg/m³ and an average thermal transmission coefficient "U" of 0.31 W/m² °C, for the standard thickness of 80 mm.

The capacities of the EIC WK chambers can reach up to 100 m³ of useful capacity.

The designs can be adapted to the client's existing space.



VOLUMES



We understand that each client has specific needs. That is why our climate chambers are designed with an adaptable volume, which is adjusted based on the requirements and space available in your facility. Our team of experts will work with you to determine the best volume configuration, taking into account three key factors:

- ✓ **Available space:** We adapt to the space you have in your facility to design a climate chamber that integrates perfectly, without compromising its operability.
- ✓ **Customized shelves:** We offer the possibility of including shelves and interior structures according to your needs, allowing you to maximize storage volume and efficiency.
- ✓ **Optimized air flow:** Depending on the required climate conditions, the air flow of our chambers can be configured to optimize the useful volume and ensure a homogeneous distribution of temperature and humidity.

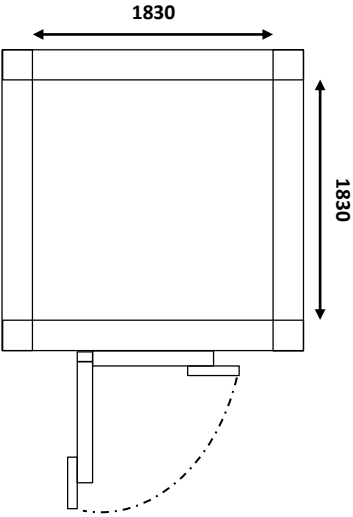
In this way, we guarantee that our climate chambers perfectly fit the needs of each client, providing an efficient, customized and high-performance solution.

But we also have standardized solutions, designed according to performance.

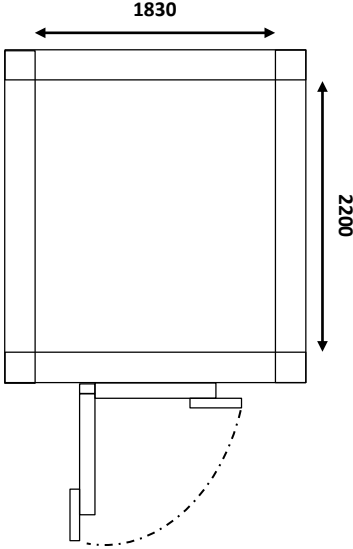


DESIGNS WITH VERTICAL AIRFLOW

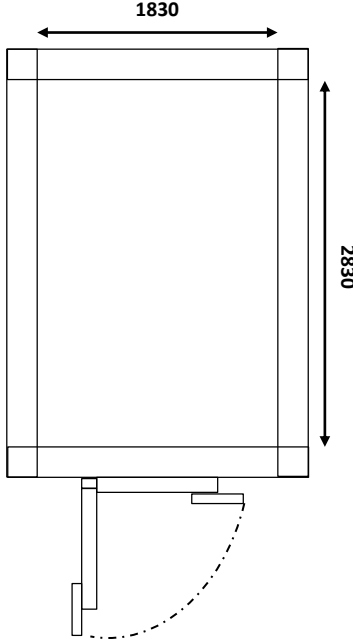
EICVS 7000 HR ICH



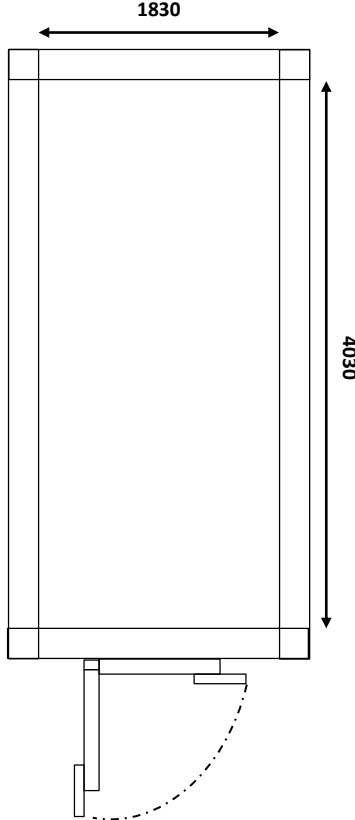
EICVS 8000 HR ICH



EICVS 10000 HR ICH

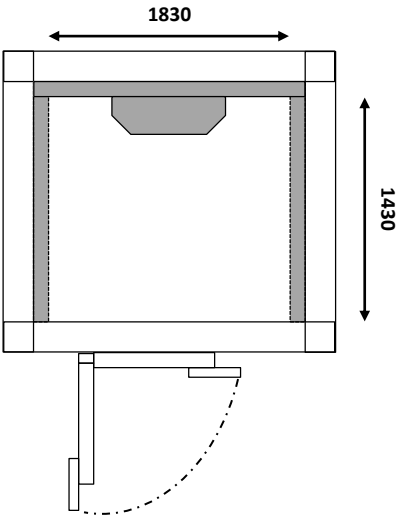


EICVS 15000 HR ICH

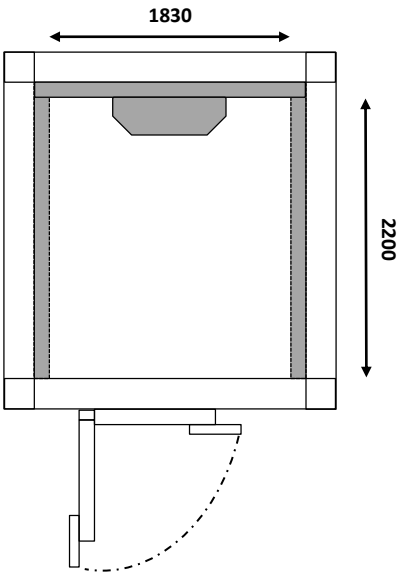


HORIZONTAL AIR FLOW DESIGNS

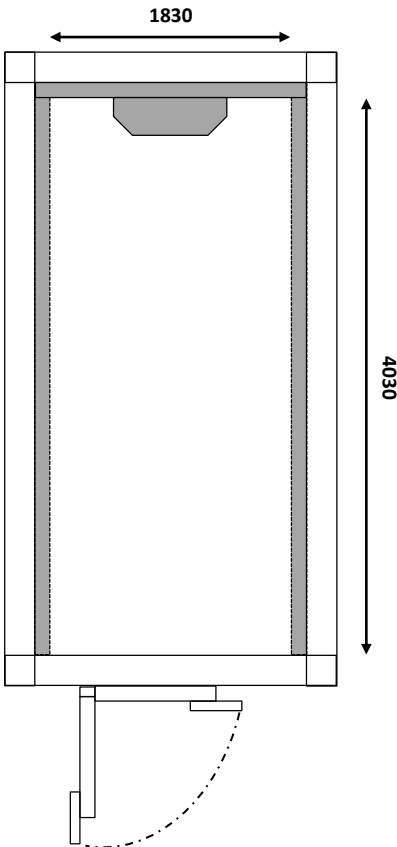
EICHS 7000 HR ICH



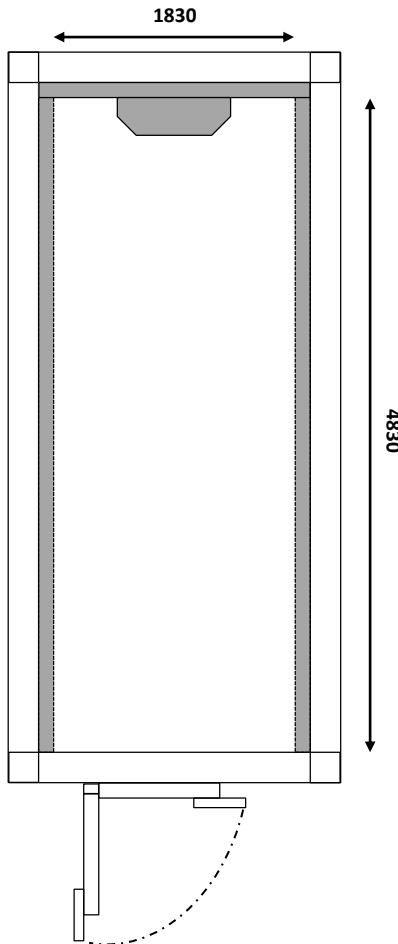
EICHS 8000 HR ICH



EICHS 10000 HR ICH



EICHS 15000 HR ICH



TEMPERATURE CONTROL



Good temperature control is the basis of a good climatic chamber. Knowing this, we have designed the chambers with the most suitable heating system to provide the greatest stability and uniformity, using dual heating technology with hot gas bypass and stainless steel electric heaters.

The standard range of the chambers is between +10°C and +60°C, but there is the possibility of extending the range to -20°C or -30°C and +70°C, +80°C or +90°C optionally.

The stability in the chamber $\pm 0.3^{\circ}\text{C}$ (at +27°C) or $\pm 0.5^{\circ}\text{C}$ (at +40°C), allows for reliable and reproducible results, for all types of tests.

If necessary, the speed of the fans can be regulated to avoid excess air over the tested sample, and the temperature can be controlled optionally using an additional digital thermostat to ensure their protection by stopping the chamber.



HUMIDITY CONTROL (Option)



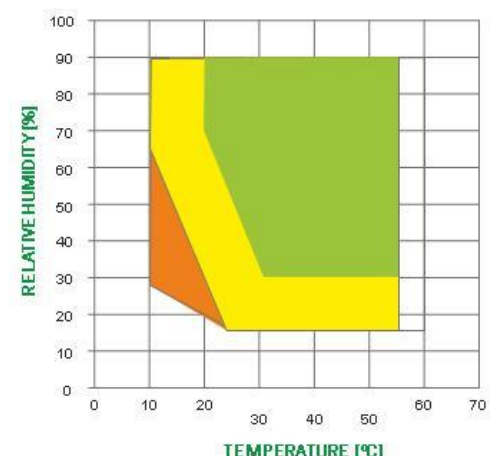
The chambers can be configured for temperature control only, or for temperature and humidity control. Humidification is carried out by an ultrasound system that does not add heat to the medium and is positioned externally to avoid distortions in the medium. The system will carry out the drying through the cooling unit itself.

Humidity control will be carried out precisely thanks to the electronic controller with advanced PID parameter control.

The standard relative humidity range will be 30 to 90%RH, with great stability $\pm 3\%RH$ under defined conditions.

There is the option of optionally extending the range to reach humidity levels above 95%RH, to carry out drying tests thanks to additional drying systems such as compressed air dryers.

There are other options for generating humidity on demand such as resistance humidifiers or injectors, according to the user's requirements.



COOLING



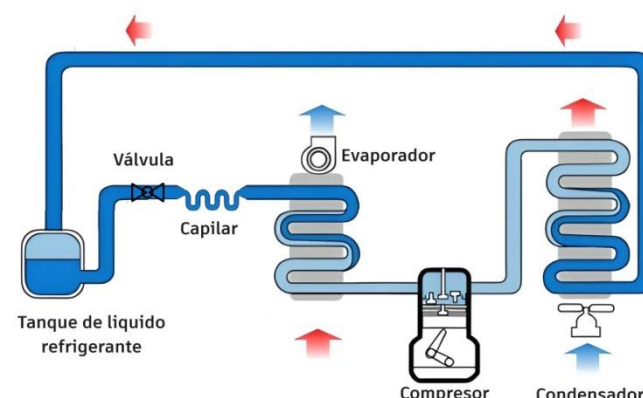
The impact of refrigerant gases on the ozone layer and global warming has been one of the key issues in recent years. The GWP value of refrigerant gases is a key point in order to guarantee the eco-sustainability of mechanical refrigeration equipment, which is why a chamber with a natural refrigeration gas is an advantage, both legally and ecologically.

Our equipment is fitted with R290A gas, a natural refrigerant gas, free of CFC and HCFC, biodegradable and with a GWP value of 3. This gas is a more sustainable and environmentally friendly alternative compared to other refrigerant gases such as R-513A or similar. We also have other solutions based on other types of gas on demand.

Cooling is based on a mechanical refrigeration system using a silent compressor controlled by solenoid valve, mounted on shock absorbers to reduce noise and vibration levels.

The circuit is completed with an automatic evaporator, optionally with hot gas controlled defrost and a pump-based drainage system. If the cooling unit is not needed, it will be automatically deactivated, reducing the energy consumption of the equipment.

Condensation of standard equipment is carried out by air, and the condenser can be tropicalized for areas with high ambient temperatures or optionally replaced by a water-cooled system.



INSTALLATION AND MAINTENANCE

The type of construction and installation of the panels in a vertical manner reduces the number of operators needed to carry out the installation.

The quick and simple fastening system guarantees a perfect fit between the different panels.

As a result, the degree of insulation offered by the chamber once assembled is total, fulfilling its function with the best results.

The polyurethane panels with metal covering have the “N” seal from AENOR according to the EN-14509 standard and have a Quality production process control following the procedures for manufacturing the panel.



CONSTRUCTION

All models are manufactured in modular panels that are easy to install and dismantle. With 80 mm insulation (other insulation depending on application) of high-density injected polyurethane, free of CFC and HCFC..

INTERIORS

EGCWK chambers are built as standard in AISI 304 stainless steel, or as an option in AISI 316 or epoxy coated, depending on the needs of the client and their application. The entire interior is easy to clean.

Internal lighting in the chamber by LED lights.

EXTERIORS

The outer structure of the chambers is made of epoxy-coated steel with corners made in a special curve.

DOOR

The chambers have a blind door with a large handle and a security lock with keys. The door will have a magnetic perimeter seal, ensuring the closure and tightness of the chamber.

The large handle allows for a firm opening, and its opening direction can be changed prior to manufacturing.

FLOOR

The chambers have a floor with an inner face made of 304 stainless steel sheet and non-slip. Resistance of min. 30,000 kg / m²; resistant to forklifts with wheels up to 1,000 kg per wheel contact point.

SHELVES

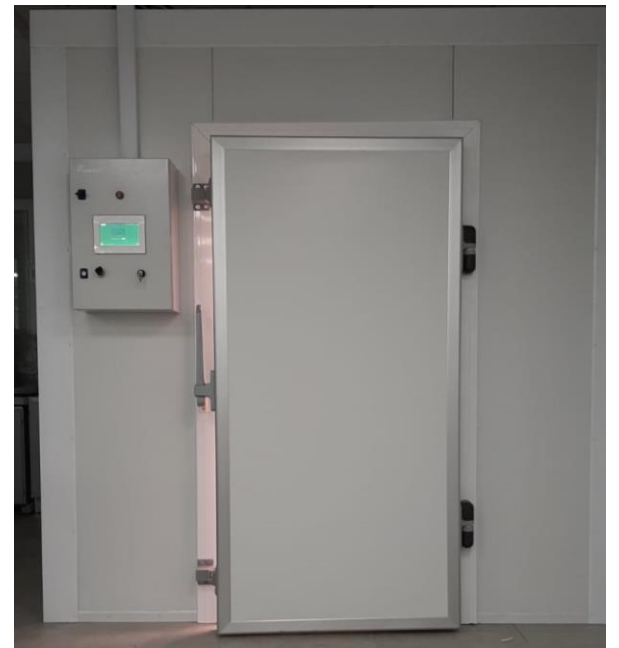
Made of AISI 304 perforated stainless steel (optional AISI 316 or grid) perforated with guides and adjustable in height. Maximum load of 100 kg/m².

Guides and grids easily removable for cleaning.

Different shelf depth options.

PORTS/ CABLE PASSAGE

EGCS chambers come as standard with a 40 mm diameter port for the passage of cables and/or probes and a protective cap. Optionally, alternatives with different diameters are available..



CONTROLLER 4500

The EIC WK series chambers have different control alternatives, one of them is the 4500 series controller, an intuitive and simple controller with 7" color graphic display, microprocessor based.

The controller will execute fixed or variable temperature, humidity and radiation programs over time.

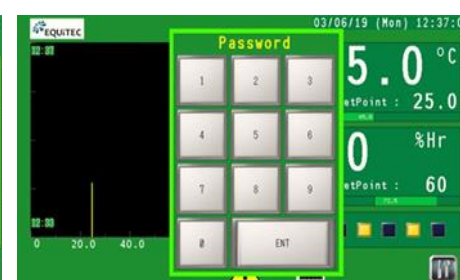
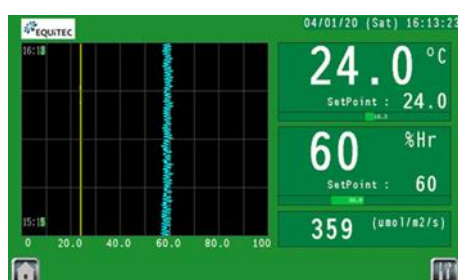
The customer will have segments where he will be able to set the temperature of each cycle, the duration time, the radiation levels, ventilation variation, as well as control and regulation of the CO2 level inside the chamber.

With a back-up battery, with automatic recharge, autonomy is guaranteed for 48 or 72 hours (optional), in case of power failure.

- ✓ 3 levels of numerical password protection (user, supervisor, service), with PIN codes.
- ✓ Checking of the following parameters: open door, humidifier failure, ventilation, defrost and light bank status.
- ✓ Includes a display showing the actual temperature of the chamber, information on the running program, information if the chamber is in stand-by to check if it is running or waiting for action.
- ✓ Temperature and humidity deviation band alarms can be set. In addition, it is possible to set the maximum and minimum temperature for which the chamber cuts off the power if these values are exceeded. It will be displayed if any alarms are active, the date when they occur, and the time.
- ✓ Visual and audible alarm (with automatic reset) for :
 - High or low temperature and/or humidity, with user programmable limits through the menu.
 - Alarm delay time, programmable through the menu.
 - Power failure / Probe failure.
 - Low battery level.



- ✓ Acoustic alarms, with continuous warning indication on the display and automatic callback in case the alarm situation persists. Alarm return time programmable through the menu.
- ✓ Battery charge status function.
- ✓ Alarm history for the last 30 alarm conditions (not suppressible), with the possibility to check on the display - the alarm condition and all related information (start time, end time, high/low temperature and humidity peaks reached).
- ✓ Defrost history for the last 30 days (not deletable), with the possibility to check the type of defrost, start time and duration.
- ✓ USB port for downloading recorded data.
- ✓ Economical day/night function, minimizes energy consumption.
- ✓ Integrated data logger, with readings every 15 seconds, allows readings up to 30 days.
- ✓ MODBUS TCP/IP for Ethernet connection.
- ✓ Built-in VNC communication to access chamber control from any remote location.
- ✓ Text available in 4 different languages.



NANODAC CONTROLLER

NANODAC series controller, with graphical display of temperature and/or humidity, intuitive and simple user control. Its 3.5" color TFT screen offers an extremely clear visualization of the process parameters with a wide selection of views that can be configured to suit the application..

- ✓ 3.5" backlit TFT graphic display.
- ✓ Secure data recording
- ✓ Two PID control loops.
- ✓ Intuitive and simple user control.
- ✓ Removable data storage on USB
- ✓ 50 MB flash memory
- ✓ Communications via Ethernet
- ✓ Back-up battery, with automatic recharging, guaranteeing autonomy for 48 or 72 hours (optionally), in case of power failure. Graphical indication of the battery charge level on the screen.
- ✓ Temperature and humidity graph on the screen.
- ✓ Resolution / Accuracy: +/-0.1 °C.
- ✓ 3 levels of protection by numeric password (user, supervisor, technical service), with PIN code.
- ✓ Reprogrammable PIN codes for greater security against unauthorized personnel.
- ✓ Visual and acoustic alarm (with automatic reset) for:
- ✓ High or low temperature and/or humidity, with limits programmable by the user through the menu.
- ✓ Voltage or probe failure.
- ✓ Low battery level.
- ✓ FDA option, 21 CFR part 11



CONTROLLER 2000

Simple and independent controller (1 for T^a and/or 1 for %RH), for applications where an advanced controller is not required, such as simple applications without the need for records.

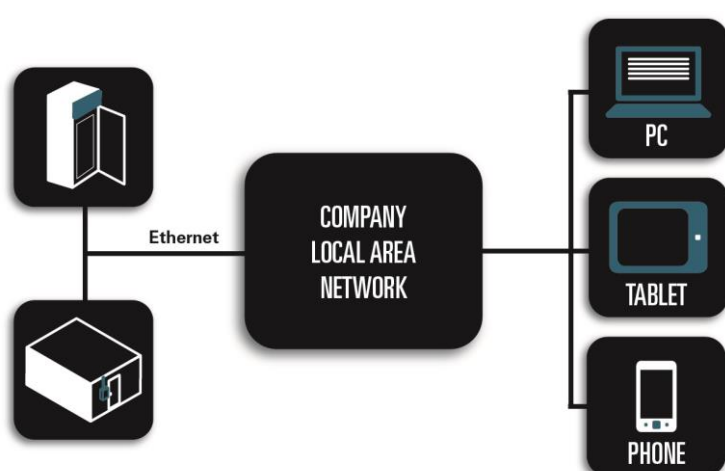
- ✓ Easy and intuitive.
- ✓ PID with double action.
- ✓ 2 4-digit MULTI Color displays
- ✓ Numeric password protection.
- ✓ Visual alarm
- ✓ Audible alarm
- ✓ Alarm test function.



OPTIONAL CONTROL ACCESSORIES

REMOTE CONTROL SOFTWARE FOR TEST CHAMBERS

Advanced control for plant growth chambers. For researchers requiring the highest level of control in their plant growth chambers, Equitec FITOCONTROL provides the most advanced solution for programming environments and monitoring experimental data, all accessible from a color touch screen interface mounted on the chamber.



REAL-TIME CONNECTIVITY

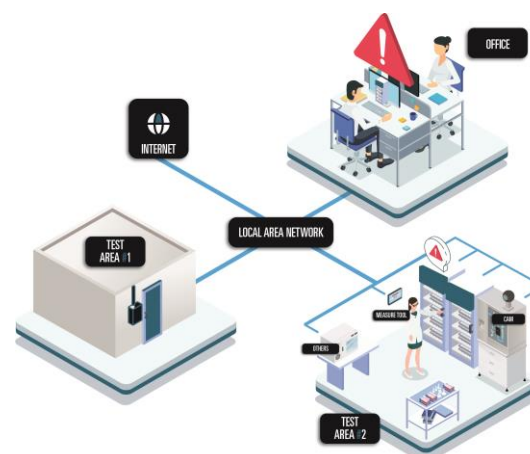
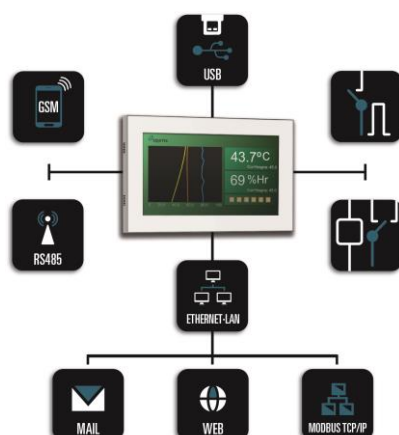
Users have full control of all chambers from any connected PC or mobile device with Internet access.

This includes creating/modifying programs and modifying operating tolerances.

ALARMS AND NOTIFICATIONS

Secure connection to messaging systems. Provides real-time alerts and alarm notifications to PC or mobile devices.

Centralized management (CMS) can also interface with BMS building management systems.



ACTIONS:

- ✓ Send e-mail: The destination e-mail address and the e-mail with copy are configured using the configuration button.
- ✓ Open screen: When an alarm appears from the group selected in "Settings".
- ✓ Execute program: Allows to execute a sequence when an alarm occurs.
- ✓ Go to screen: When an alarm occurs, the program automatically opens the screen where the alarm occurred.
- ✓ Send SMS: Sends an SMS with the alarm data to the specified phone numbers (requires: GSM modem).

ALARM PANEL

- ✓ Alarm history: All alarms that have occurred in the installation.
- ✓ Active alarms: shows the active or unacknowledged alarms in the installation.
- ✓ Unacknowledged alarms: Displays all alarms that have not yet been acknowledged.



- ✓ Activation delay: The minimum amount of time the signal must be above the limits for the alarm to activate.
- ✓ Timeout: The minimum amount of time the signal must be within the alarm limits for it to normalize.
- ✓ Colors: for each state of possible alarm states.
- ✓ Minimum level to be recognized: This is the minimum level a user must have to acknowledge the group alarm. Otherwise, a message will be displayed to warn you that you do not have a sufficient level.

OTHER OPTIONAL ACCESSORIES

Extended negative temperature range

Optional negative temperatures: -5°C / -10°C / -20°C or -30°C.

Extended positive temperature range

Optional positive temperatures: +70°C or +80°C.

Extended humidity range

Extended drying capacity up to +10% RH, with additional air dryer.

Interiors

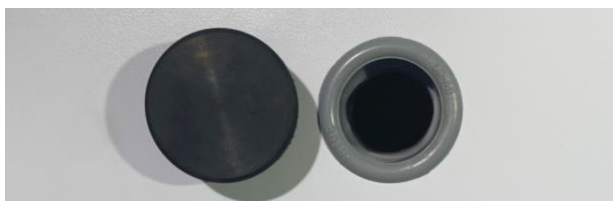
Finished in epoxy-coated steel or AISI316 stainless steel, depending on the application.

Exteriors

Finished in AISI304 stainless steel.

Additional cable ports

For the passage of cables and/or probes. With different diameters and plug.



Water condenser

Cooling system for the condensing unit by water or by water with glycol, existing in the building. Replaces air-cooled condensing units.

Door with window

For viewing samples during testing.

Double tempered glass.



Internal sockets

For power supply of the different electronic elements inside the chamber during the test.



Paper recorder

Circular temperature/humidity recorder for 7 days, with independent battery for operation even in the event of a power failure. Includes 100 graphs (approx. 1.5 years).

Potential contact

Potential-free output for remote alarm control (4-20 mA).

Alarm module

GSM alarm module for retransmission of alarms to external devices via MODBUS.

Photostability

Cold white and near-UV fluorescent tubes for photostability tests. (OPTION II, of the ICH Q1B standard). Optional LED tubes.

Water tank

Optionally for equipment with humidity control: 20-litre water tank and pump for water supply and evacuation with 3-metre drainage tube.

Reverse osmosis

Water treatment system using reverse osmosis.

Documentation

Documents for equipment qualification: IQ, OQ, PQ.



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EQUIPMENTS

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