New climatic and thermostatic chambers
The chamber is equipped with a PLC (Programmable Logic Controller) for managing all the chamber's functions and safety interlocks. A special device (Guardian Evo) controls the chamber via “mobile” devices, such as Tablets and Smartphones, or by establishing a remote Internet connection. The HMI system consists of an on-board panel (Keykratos Evo) and a remote control (MyKratos™ and MyAngel24™) connected to the chamber.

All-in-one software: all functions in one application

MyKratos™ control software makes it possible to manage, monitor and assist the chamber anywhere, at any time, in multiple ways (Wi-Fi, Ethernet, UMTS) via mobile and desktop devices. The chamber wireless (Wi-Fi) connection permits operation using tablets and smartphones (iOS 7 or Android 4.2.1 compatible). The operator interface can also be remotely accessed through a chamber connection to the client’s LAN or via GPRS/UMTS (on activation of a SIM card data). It includes the MyAngel24™ remote-assistance system.

Main features
- Wi-Fi or Ethernet connection to the chamber
- Visualization and graphical analysis of measures and recordings
- Synoptic charts of the entire system
- Multilanguage support
- High configurability of chamber parameters
- Unlimited measures recording possibilities
- Program and Manual chamber operation modes
- Delayed start of a program
- Possibility to select more than one chamber from a single Tablet: secure access by means of multiple password levels
- Automatic notifications of event and alarms
- Archive manager for easy access to the stored recordings
- Possibility to send email notification
- Possibility to send SMS notification (SIM card required)
- Multi-chamber management

Test program editor
- Unlimited possibilities for storing cycles of 350 segments delaying their execution
- Internal repetitions of 10 groups of segments up to 999 times each
- Possibility to upload, edit, export, and delete already existing cycles and recordings
- Graphic and numeric profile parameters data entry

Graphic functions (Graphic viewer)
- Live data update of measures on the charts
- Graphic charts or numeric table representation views on the monitor
- Graphic cursor for in-chart data measurements and evaluations
- Calculation of Measure Slopes and report generation
- Enable/disable of chart display
- Zoom in, zoom out and scroll functions

Export function to convert the MyKratos™ log file into ASCII format (usable in Excel or other applications)
Our communication protocol - ModBUS RTU for serial or Fetch/write for Ethernet communication, can be supplied to allow any chamber connection using the customer’s own programming languages and operating systems.

Communication drivers for an easy integration into customer-developed Serial or Ethernet based applications, (LabVIEW, LabWindows CVI, Microsoft.NET, Visual Basic 6, etc…) can be supplied on request. The drivers come with a set of examples written in Visual Basic 6, LabView, LabWindows CVI, VB.NET, and permit total interaction with Discovery My chambers, for both reading and writing.

Example program
LabVIEW

Example program
LabWINDOWS CVI

Full safety thanks to access through personal touch screen code

Operator Safety
It is possible to customize the temperature range for opening the door (the default range is between 0 and 60°C).

Personal Identification Number
A PIN code can be set to open the chamber and ensure maximum safety for the products being tested.

Additional S/W tools for an Easy Integration of Discovery My chambers in Test Labs

System available in several languages: Italian, English, additional languages on request.

Development environment

Development environment
Further customise your discovery

Discovery chambers come with a wide range of included accessories.

### Basic Configuration
- MyKratos™ and MyAngel24™
- Electromagnetic closing system
- Inspection window
- Self-pivoting wheels and feet
- Air condenser
- Internal light
- Self feeding system (town water through chamber embedded softener)
- No. 1 internal grid shelf
- Humidification water recycling system
- Min/max digital thermostat with independent probe
- Silicone portholes
- No. 1 auxiliary free contact
- Ethernet port
- RS232 serial interface

### Options
- Additional portholes
- UV lamp
- Handling port hole (available for models from 500 litres up)
- Internal shelves
- Water condenser
- Reinforced floor
- Capitive probe
- Notch
- Set of no.4 analogic inputs
- Set of no. 4 PT100 inputs
- Set of no. 4 PT100 probes
- Set of no. 8 auxiliary contacts
- No break power unit for PLC
- Temperature extension to -40°C
- Air fan motor speed adjustment
- Air flow booster
- Specimen switching off in case of chamber alarm
- Compressed air dehumidification kit
- T e RH analogic retransmission
- Surface cleaning set
- Tablet

### Additional Features
- Water cooled condenser
- Through holes Ø 80 and 150mm. For electrical, mechanical, and hydraulic connections inside and outside the chamber.
- UV lamp
- For ageing tests on painted, plastic, rubber, and other surfaces.
- Reinforced floor
- Withstands samples up to 500 kg.
- Notch
- 70x50(h) mm. Ideal for complex connections to the sample.

### Humidity Diagram
1. Standard working range
2. For limited periods
3. Dew point extension -40°C (Optional)

Check out our 3D animation at www.discoverymy.com
**Eco-friendliness**

Flower® patented technology allows to reduce energy consumption and minimize environmental impacts.

**Energy Consumption**

Up to 50% reduction of energy consumption can be assured during the stabilization and transition phases due to a unique and “patented system” which includes:

1. an inverter that controls compressor speed and allows the adaptation of compressor power to different working needs.
2. a “cold sink”

**Noise Level**

Up to 50% sound pressure reduction is obtained due to:

1. an inverter on the compressor which reduces the rotation speed according to working conditions.
2. an automatic control system that reduces condenser blower rotating speed according to ambient temperature and cooling power.

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**MODEL** | FM140 (C) | FM600 (C) | FM2100 (C)
---|---|---|---
**Useful capacity (l)** | 307 | 593 | 1076
**Internal dimensions approx. (mm)**
- **Width** | 601 | 855 | 1000
- **Depth** | 810 | 730 | 1180
- **Height** | 694 | 892 | 953
**External dimensions approx. (mm)**
- **Width** | 919 | 1124 | 1278
- **Depth** | 1786 | 1788 | 2322
- **Height** | 1765 | 2049 | 2111
**Temperature range (°C)**
- **Basic** | -40…+180 | -40…+180 | -40…+180
- **C model** | -75…+180 | -75…+180 | -75…+180
**Temperature fluctuation (K)**
- **Basic** | ±0.1…±0.3 | ±0.1…±0.3 | ±0.1…±0.3
- **C model** | ±0.1…±0.3 | ±0.1…±0.3 | ±0.1…±0.3
**Humidity range (%)**
- **Basic** | 10…98 | 10…98 | 10…98
- **C model** | 10…98 | 10…98 | 10…98
**Maximum thermal Load (W)**
- **Basic T=+25°C** | 2300 | 4500 | 4500
- **C model T=+25°C** | 3500 | 3000 | 3000
**Rated power (kW)**
- **Basic** | 6,9 | 13,4 | 19,5
- **C model** | 8,4 | 16,2 | 32,9
**Rated current absorption (A)**
- **Basic** | 12,5 | 24 | 34
- **C model** | 15 | 29 | 40
**Weight (kg)**
- **Basic** | 790 | 985 | 1180
- **C model** | 830 | 1090 | 1380
**Sound pressure level (dB(A))**
- **Basic** | 58 | 63 | 64
- **C model** | 63 | 66 | 68
**Sound pressure level at steady cond. dB(A)**
- **Basic** | 54 | 56 | 59
- **C model** | 56 | 60 | 63

**SUPPLY VOLTAGE (Vac)**

- 400V ±10%/50Hz/3+N+G

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2) τ = +4°C/+94°C for continuous test
3) measured at 1 m distance in front of the unit in 1,6 m height/free field measurement
4) according to IEC 60089-3-5/standard IEC 60089-5-6
5) the performance data refer to +22°C ambient temperature, 4020 nominal voltage, without specimen
Remote Assistance System

Diagnostics
With MyAngel24™, the climatic chambers stay connected to the remote server 24 hours a day, monitoring running conditions in order to guarantee faster and more efficient service and maintenance activities.

Accessibility
With MyAngel24™, you can stay in contact with the climatic chamber whenever you want and wherever you are, accessing its control panel from any web browser.

Safety
MyAngel24™ uses the highest security standards available for authentication, secure connection, data encryption and storage. Moreover, you can suspend or limit the data sent to the central server for security reasons during one or more test sessions.

The advantages
MyAngel24™ is Intelligent communicating with our technicians, making easier to schedule maintenance activities.

MyAngel24™ is Easy no need for third party software installation.

MyAngel24™ is Everywhere accessible whenever and wherever you are, from any device with an internet connection and a simple web browser.

MyAngel24™ is Functional saving parameters, performance, SW settings and updates.

MyAngel24™ is Secure with 100% protection for data transfer and system access authentication.

Hardware and software infrastructure
4 simple steps for assistance and complete remote control

The remote server located at Angelantoni headquarters (in Massa Martana, Perugia) hosts the database for data storage and acquisition.

The climatic chamber is equipped with an electronic device functioning as an integrated system, allowing for connection to the remote server.

The remote connection is created by connecting the climatic chamber to the VPN by GPRS/UMTS, or on request by Ethernet connection to an enabled company LAN.

The company network connection can be set up through a web browser, with access regulated according to a hierarchy of authentication privileges.

The connection between the climatic chamber and the remote ACS system is managed by a device with integrated VPN technology. The client establishes a secure VPN connection between the chamber and the ACS server, using a unique certificate provided by Angelantoni. The user will see the connection appear as a private network, with all communications encrypted in order to guarantee protection for sensitive data.