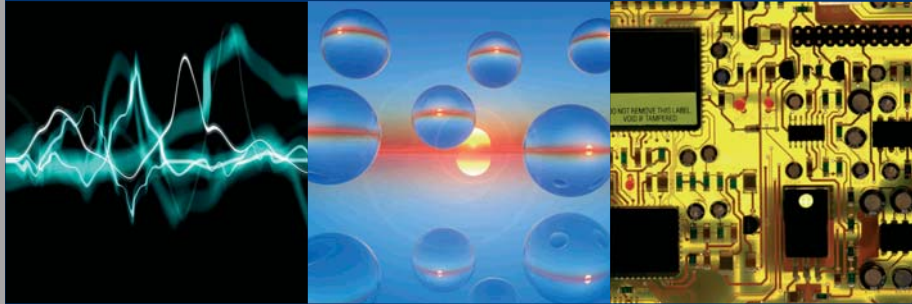
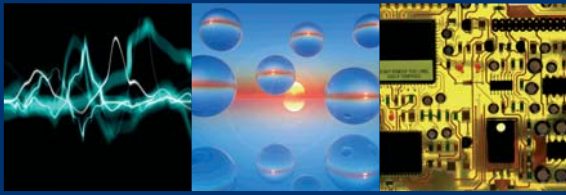


# Discovery Chambers

Temperature and Humidity Tests





“The process of discovery is, in effect,  
a continual flight from wonder”

Albert Einstein

## Discovery Chambers

Angelantoni Industrie S.p.A are proud to announce their newest and most innovative chamber series yet Discovery. This line of chambers has both thermostatic (temperature only) versions and climatic (temperature and humidity) versions.

We have taken over 75 years of knowledge and experience, along with extensive feedback from both customers and our agents, and have produced these feature rich and highly reliable chambers to fill your testing needs.

Just take a look at some of the new features and you'll see why we are so proud to offer these to the testing community.

With the Discovery series you have the ability to apply the known laws of nature (temperature and humidity) and allow the unknown (possible product defects) to reveal themselves. With every test you will discover which of your test items are robust and give you increased confidence in their reliability.

### MAIN STANDARDS

#### TEMPERATURE TESTS

##### COLD ONLY

DIN 40046 Page 3, Test A  
IEC 68-2-1, Test A  
BS 2011, Part 2, Test A  
MIL-STD 810 D, Met. 502.2  
MIL-E 5272, Test 4.2

##### HOT ONLY

DIN 40046, Page 4, Test 3  
IEC 68-2-2, Test B  
BS 2011, Part 2, Test B  
MIL-STD 810 D, Met. 501.2  
MIL-STD 883 C, Met. 1008.2  
MIL-E 5272, Met. 4.1  
MIL-STD 202 E, Met. 108 A

##### HOT/COLD

DIN 40046, Page 14, Test Nb  
IEC 68-2-14 Nb  
MIL-STD 311 A, Part 112.1

#### CLIMATIC TESTS

##### CONSTANT CLIMATE

DIN 40046  
DIN 50014  
IEC 68-2-3, Test Ca  
MIL-STD 202 E, Met. 103 B  
DIN/IEC 68-2-56

##### VARIABLE CLIMATE

DIN/IEC 68-2-30 DB  
IEC 68-2-38  
MIL-STD 202 E, Met. 106 D  
MIL-STD 883 C, Met. 1004.4  
DIN 40046 Page 6 and 31  
IEC 68-2-4, Test D  
BS 2011, Part 2.1, Test Da  
MIL-STD 750 B, Met. 1021.1  
DIN 40046 Page 101  
DIN 50016  
MIL-STD 311 A, Part. 105.1  
MIL-STD 810, Met. 507 Proc. 1-2-3

## New Features

### Optimized Control System

- KeyKratos Plus touchscreen control
- PID control through PLC
- Completely updated hardware and software working together to give much faster control

### Optimized Refrigeration System

- Increased thermal exchange
- Vibration resistant to be able to handle transport conditions better
- Improved refrigeration plant thanks to specific studies based on dedicated Design & Research tools

### Optimized Electrical System

- Improved reliability through new selected components
- Easier access for maintenance

### Innovative Humidification System

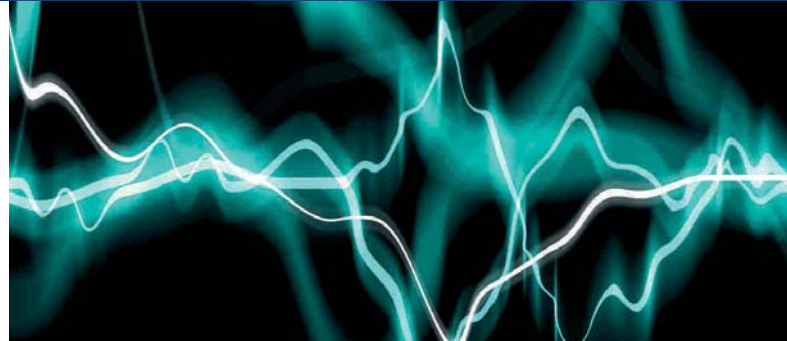
- New humidifier with a self contained heater for better reliability
- Internal water demineralizer
- Better layout of pipes to obtain a perfect tightness of the system
- Choice of psychometric system or capacitive probe

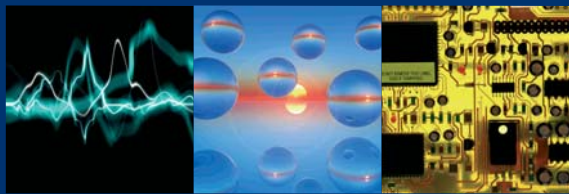
### New Door Style

- Aluminum alloy frame
- Stainless steel back, with 135 mm of insulation
- Electromagnetic door closers
- Choice of opening with keycard (for security) or through a button on the touch screen with configurable opening temperature range

With all of these changes, what has stayed the same?

Our commitment to quality and reliability, our network of workers in over 40 countries, and our willingness to make each chamber to order.

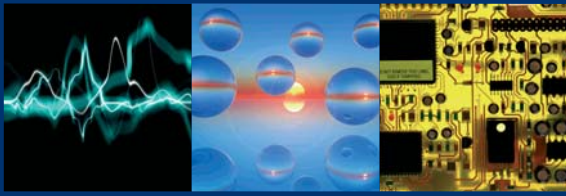




Discovery line







Your chamber has never been easier to use!

## Control system and user interface

KeyKratos Plus



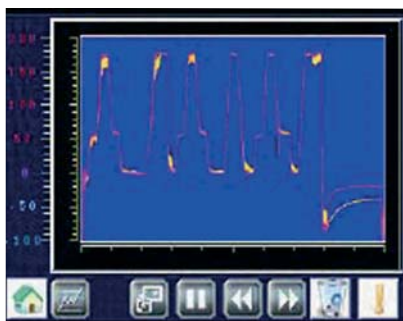
Main window

KeyKratos Plus



Maintenance activities

KeyKratos Plus



Trend chart

### KeyKratos Plus

#### Hardware

- 4096 colours with STN technology
- Faster control
- 3 types of memory support for storing cycles, recordings, and alarms
- Compact Flash, Pendrive (USB key style), Internal memory

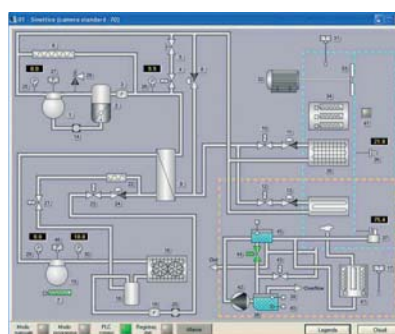
#### Software

- Touch menu with related pop up screens where necessary
- Memory capacity to 1000 cycles with 350 segments (on compact flash)
- Real time recording of temperature and humidity versus time (LOG on compact flash)
- USB interface on front panel for stick or printer
- Recordings in CSV format (Comma Separated Value) for easy export to Excel®, program files are easily convertible into graphic format
- A trend chart for recorded variables available with a scale from -100/+200
- Four traces: temperature set point, actual temperature, humidity set point, and actual humidity
- User friendly data input during editing, check and administration of cycle
- Synoptic graphs for the chamber, humidity, low stage refrigeration and high stage refrigeration
- Messages on scheduled maintenance activities
- The system is available in 6 languages: ITALIAN, ENGLISH, GERMAN, SPANISH, FRENCH, DUTCH

### PC WinKratos software

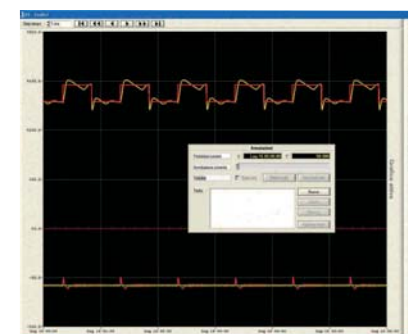
- Ability to add notes on the graphs
- Delayed start of the tests
- Optimized view of synoptic graphs
- Two editing modes: "entry-level" and "advanced"

WinKratos S/W



Synoptic graphs

WinKratos S/W



Notes on the graphs

And now, your choice

## Configuration and technical data



### Basic Configuration

- mm 450x450 inspection window (mm 300x300 for DY110)
- self-pivoting wheels (DY110 excluded)
- internal light
- 80 mm porthole
- no. 1 internal shelf
- air condenser
- humidification water recycling system
- RS232 or RS485 serial interface
- min/max digital thermostat with independent probe
- UPS connection
- no. 1 auxiliary free contact
- T & RH analogic retransmission
- KeyKratos Plus control system

### Options

- PC Winkratos software
- multichamber remote control
- noise reduction system (water condenser)
- UV lamp
- 150 mm porthole
- additional internal shelves
- teleservice
- analogic inputs
- PT100 inputs
- additional auxiliary free contacts
- trolley (for DY110)

### Technical features

	MODEL <sup>1</sup>	DY110 (C)	DY250 (C)	DY340 (C)	DY600 (C)	DY1200 (C)
Useful capacity (l)		112	226	336	559	1152
Internal dim. (WxDxH) mm		548x460x447	601x545x692	601x810x692	850x740x790	1000x1130x1020
External dim. (WxDxH) mm		872x1112x1280	919x1555x1638*	919x1817x1638*	1168x1797x2021*	1320x2235x2137*
Temp. Range (°C)	Basic	-40°...+180°	-40°...+180°	-40°...+180°	-40°...+180°	-40°...+180°
	C Execution	-70°...+180°	-75°...+180°	-75°...+180°	-75°...+180°	-75°...+180°
Temperature fluctuation		±0.1 C°... ±0.3 C°	±0.1 C°... ±0.3 C°	±0.1 C°... ±0.3 C°	±0.1 C°... ±0.3 C°	±0.1 C°... ±0.3 C°
Temperature rate of change (measured at the control probe) **						
Heating	Basic (-40/+180°C)	3.2°C/min	5°C/min	4.5°C/min	4.5°C/min	4°C/min
	C Execution (-70/+180°C)	3.2°C/min	5°C/min	4.5°C/min	4.5°C/min	4°C/min
Cooling	Basic (+180/-40°C)	2°C/min	3.5°C/min	3°C/min	4°C/min	4°C/min
	C Execution (+180/-70°C)	2.8°C/min	2.5°C/min	2°C/min	4°C/min	3°C/min
R. H. range (T=-20/+94°C)***		10%...98%	10%...98%	10%...98%	10%...98%	10%...98%
R. H. precision		±1%... ±3%	±1%... ±3%	±1%... ±3%	±1%... ±3%	±1%... ±3%
Int. Dissipation (W)	Basic T= -25°C	100	400	400	1000	1300
	C Execution T= -55°C	250	600	600	1500	2000
Absorbed Power (Kw)	Basic	2	4,3	4,3	6,8	8,2
	C Execution	2,5	5,2	5,2	8,6	10,2
Weight (Kg)	Basic	340	680	750	930	1080
	C Execution	350	735	805	1010	1180
Noise db (A) ****	Basic	58	59	59	64	65
	C Execution	60	63	63	66	68
Supply Voltage (Vac)		230V+6%/L-10%/50Hz/1+G		400V +6%/L-10%/50/3+N+G		

<sup>1</sup> for Temperature only version add the suffix T

\* height without wheels= decrease of 60 mm

\*\* according to IEC 60068-3-5 and IEC 60068-3-6

\*\*\* T= +2°C/+94°C for continuous tests

\*\*\*\* measured at 1 m from the front in a non reverberating room

REM: Performances related to the basic configuration, without any option

Angelantoni Industrie headquarters in Massa Martana (Perugia, Italy) extend over an area of 80.000 square metres (more than 16.000 covered square meters).

Massa Martana is located in Umbria, a region rich in art, history and tradition.

No location could be more appropriate; Angelantoni Industrie S.p.A. learns from the past to better understand and anticipate the future.

This, combined with dedication and over growing expertise, is why Angelantoni Industrie S.p.A. has become the most complete and diversified European Group for advanced cold technology and test equipment for industry and research.

Established in 1932, Angelantoni Group has today more than 700 employees working in 6 units (2 in Italy, France, Germany, China, India).

## Our core competencies and services for total customer satisfaction:

- Training, both at our facility and at customer site
- Testing and quality checks
- Installation and start up
- Preventive maintenance
- Service
- Calibration using SIT certified instruments
- "Full risk" assistance contracts
- Extended warranties
- Existing chamber validation
- Retrofitting of older chambers, including instrumentation and new environmentally friendly refrigerants
- Exchange and sale of used chambers
- Research and development
- Production and assembly
- Market analysis and advice
- Special applications



ISO 14001



ISO 9001:2000