ACS | TESTING FOR A BETTER PLANET

Angelantoni

Modular
walk-in chambers

ACS | *Angelantoni*
TECHNOLOGY FOR LIFE

Angelantoni Test Technologies
stay ahead to meet the needs
of the Industry of the Future, where
Internet Technology,
Remote Connections,
Communication & Networking
are the keywords for success.

Modular
walk-in chambers 📶

Besides their well-known key features - **modularity**, **flexibility**, **easy assembly** - these chambers are now equipped with **Weazy™** the new onboard HMI providing an intuitive and rsponsive interface for our Powerful Control System.

This line of chambers comes in both thermostatic (temperature only) and climatic (temperature and humidity) versions.

Mix and match to better fit your needs

Without compromising our high standards of quality and reliability, we wanted to reduce delivery times and avoid the costs of design and engineering normally associated with the customized walk-in chambers.
Modular design is the solution.
A cost-effective, modular design comprising the four basic elements of a walk-in chamber that can be mixed and matched to provide a configuration to suit most requirements.
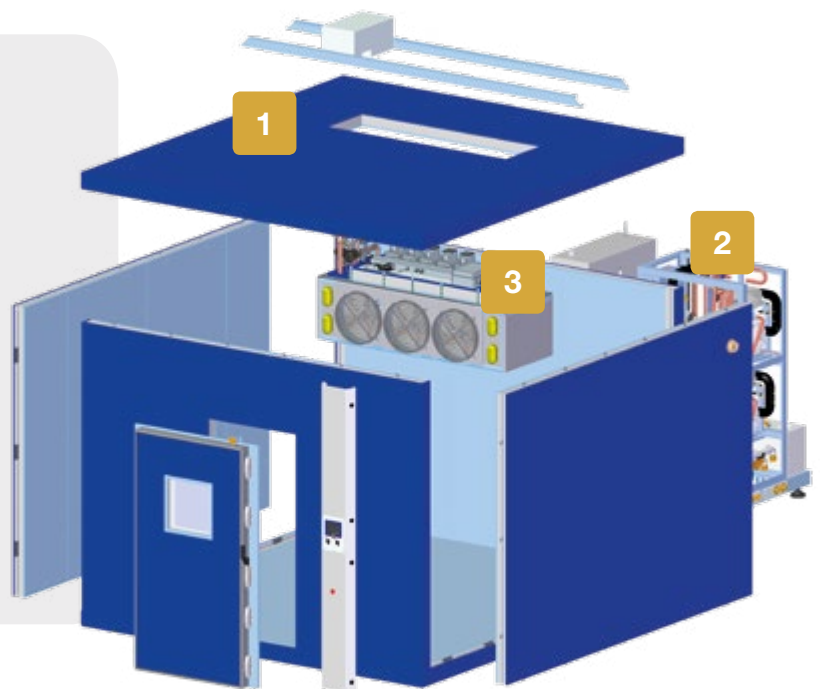
1 Test Room Construction

Vapor tight prefabricated panels suitable for multiple assembly and take down operations, AISI 304 interior, blue plastic coated zincor steel exterior. Insulation thickness: 120 mm.

2 Cooling Unit

Comprising the cooling unit and the humidification system required for the control of temperature and air humidity inside the walk-in chamber. The basic version requires either mains water or tower water for cooling.

3 Air Treatment Unit

Powerful fans draw the chamber air across the heat exchangers for cooling and dehumidification, heaters and control sensors before recirculating the conditioned air back into the chamber. A Pt100 sensor (temperature) and a capacitive probe (humidity) are used for control.
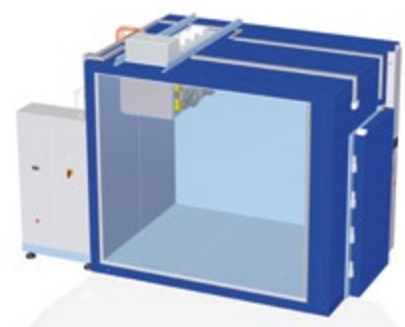
Modular
walk-in chambers
make your life easier!

✔ Flexible and modular
design for a wide
production range.

✔ Strong standard
floor 3000 Kg/m^2.

✔ Robust self-supported
structure.

✔ High degree
of customization through
many accessories
(portholes, door
inspection windows,
double wing door).

✔ Quick assembling
on site.

✔ Quick disassembling
to relocate or rebuild
the chamber if necessary.

✔ Easy upgrading
and refurbishing thanks
to unit plant and
air treatment modularity.

5

Check out our video about
easy assembly at
www.acstestchambers.com

Modular
walk-in chambers

Customized walk-in chambers

A wide range of solutions are available for any customer requirements.
Our company has extensive experience in supplying equipment for applications in such diverse fields as electronics, aeronautics, automotive, home appliances and defence.

Walk-in chamber equipped with indirect cooling system to test specimen (base station) with high heat dissipation

Walk-in chamber for rain tests

Walk-in chamber for tests on satellite antennas and panels

Calorimeter to measure the efficiency of air conditioning systems

Focus on basic features

Modular walk-in chambers come with a wide range of included accessories

Basic Configuration

Options

- **Weazy™**
- Single wing door
- **Skidproof floor:** stainless steel floor with anti-slip surface treatment
- **Closing:** mechanical
- **Thermostat:** max./min. digital thermostat with independent probe
- **Auxiliary contacts** (specimens, alarms)
- **Interface:** Ethernet port for remote control system connection and USB port for operator panel
- **Water condenser**

- **Inspection window for single wing door:** multiple-crystal, with double heated transparent film, 450x450 mm size **1**
- **Double wing door:** with 2 heated multi-pane windows with double transparent film, 450x450 mm size **2**
- **Additional portholes:** no. 2 Ø150mm portholes, number and positions available as per drawings
- **Set of 4 input PT100 (max 1 set)** (no. 1 set max) **3**

- **Set of no.4 analogic inputs:** 4÷20 mA for user's data acquisition (no. 1 set max)
- **Set of no. 8 auxiliary contacts** (no. 1 set max)
- **No break power unit for PLC**
- **Specimen switching off** in case of chamber alarm
- **Remote air condenser**
- **MyAngel24™**
- **WinKratos**

1 Inspection window on the door

2 Double wing door

**3** Panel with n°2 portholes (Ø150 mm internal size)

Modular
basic elements

Test room

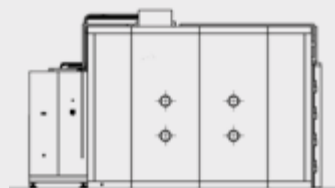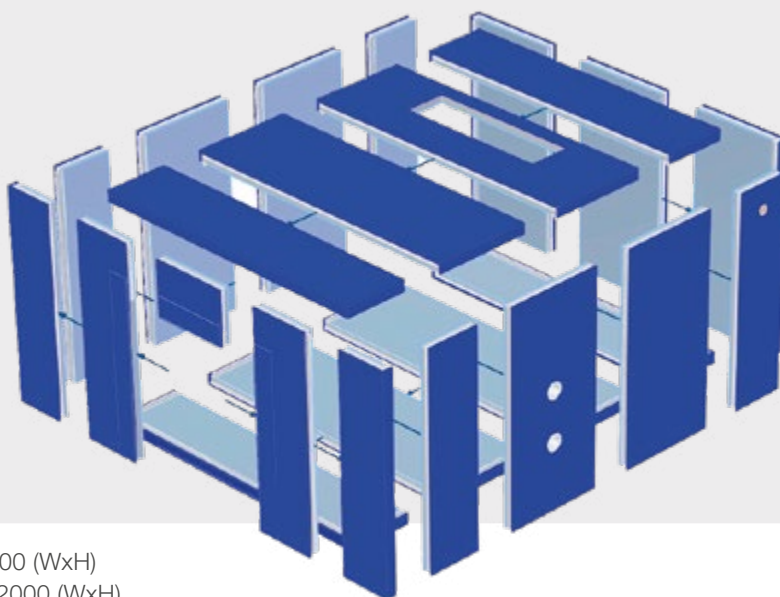|	Useful capacity (m³)	Internal dimensions approx. (mm)			External dimensions approx. (mm)		
		Width	Depth	Height	Width	Depth	Height
Compact	**10**	2120	1820	2560	2360	2060	2800
Medium	**16**	2120	3000	2560	2360	3240	2800
Large	**30**	3300	3640	2560	3540	3880	2800
Extra large	**40**	3300	4820	2560	3540	5060	2800

Compact
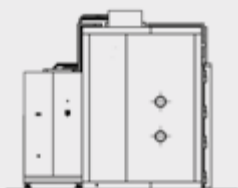
Medium
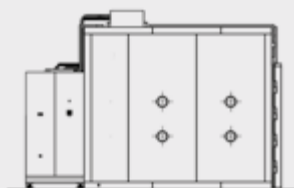
Large

Extra large

Single wing door useful dimensions: 900x1900 (WxH)
Double wing door useful dimensions: 2000x2000 (WxH)
Portholes are positioned in the center of the panel at fixed height.
The drawing shows the right side panels, but the same configuration is available also on the left side.
Right and left panels having the same dimensions, either blind or with Ø150 mm portholes, are interchangeable.
The double porthole panel position and side can be decided by the customer during installation.
Each test room standard size is compatible with any air treatment unit type.
Air treatment units dimensions: 1965x800x570 mm (WxDxH)
Cooling units dimensions: 2000x1210x2070 mm (WxDxH)

Air treatment and cooling units

Capacitive probe (electronic system)
Direct humidification takes place
by means of an electric humidifier
placed in the cooling unit and a steam
distributor located in the air treatment unit.
Dehumidification takes place
in the air treatment unit through
a dedicated battery.

Humidity diagram
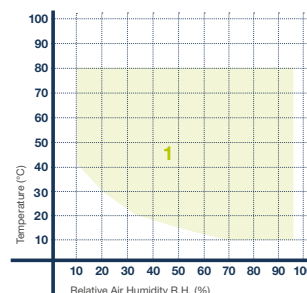
1. Standard working range

MODEL[1]		WZH A1	WZH B1	WZH C1	WZH A2	WZH B2	WZH C2
Temp. changing rate Heating [4+5] (K/min)	Compact	2,7 [note 7]	5,2 [note 7]	5,5 [note 7]	2,7 [note 10]	5,2 [note 10]	5,5 [note 10]
	Medium	2 [note 7]	3,8 [note 7]	5,5 [note 7]	2 [note 10]	3,8 [note 10]	5,5 [note 10]
	Large	1,2 [note 8]	2,5 [note 7]	3,7 [note 7]	1,2 [note 10]	2,5 [note 10]	3,7 [note 10]
	Extra large	1 [note 8]	2,1 [note 7]	3 [note 7]	1 [note 9]	2,1 [note 10]	3 [note 10]
Temp. changing rate Cooling [4+5] (K/min)	Compact	1,1 [note 7]	1,9 [note 7]	2 [note 7]	1,5 [note 10]	2,6 [note 10]	2,8 [note 10]
	Medium	0,8 [note 7]	1,4 [note 7]	2 [note 7]	1,1 [note 10]	1,9 [note 10]	2,8 [note 10]
	Large	0,5 [note 8]	0,9 [note 7]	1,4 [note 7]	0,7 [note 10]	1,3 [note 10]	1,9 [note 10]
	Extra large	0,4 [note 8]	0,8 [note 7]	1,2 [note 7]	0,5 [note 9]	1 [note 10]	1,6 [note 10]
Humidity range (%) [2]		10…95	10…95	10…95	10…95	10…95	10…95
Temperature range for climatic test (°C)		10…80	10…80	10…80	10…80	10…80	10…80
Humidity fluctuation (%)		±3...±5	±3...±5	±3...±5	±3...±5	±3...±5	±3...±5
Maximum thermal Load (W) [5]	T=+25°C	2000	5000	9000	3000	6000	10000
Rated power (kW)		23	38	51	27	42	58
Rated current absorption (A)		38	59	85	46	70	102
Weight (without packing) (kg)	Compact	2050	2250	2400	2300	2650	3000
	Medium	2300	2500	2650	2550	2950	3250
	Large	2800	3000	3150	3050	3450	3750
	Extra large	3150	3300	3500	3400	3750	4100
Sound pressure level dB(A) [3]		68	72	76	72	76	80
Max water consumption (m³/h) [6]		2,6	4,7	7	3,2	5,8	8,7
Supply voltage (Vac)		400V ±10%/50Hz/3 + N + G					

1. For Temperature only version change the prefix WZH with WZT - **2.** t=+4°C/+78°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 60068-3-5 and IEC 60068-3-6 in the temperature range +80/-30°C - **5.** The performance data refer to +22°C ambient temperature, 400V nominal voltage, without specimen - **6.** With water at T +29°C and temperature difference at 5°C (water temperature range +12÷+29°C) - **7.** Temperature range (-40/+80°C) - **8.** Temperature range (-30/+80°C) - **9.** Temperature range (-65/+80°C) - **10.** Temperature range (-70/+80°C)

weazy™
a lightweight, responsive and unique HMI for ACS chambers

Weazy™ is the onboard HMI, providing an intuitive and responsive interface for our powerful Control System, designed for use across an extensive range of our chambers.

Available on 10 inch display

Simple to use graphical interface

Clarity, consistency and efficiency of use

Fully Modular and User-Configurable Control System

The chamber is equipped with a **PLC** (Programmable Logic Controller) for managing all the chamber's functions and safety interlocks.

The chamber basic control is supplied by **Weazy™**, a very flexible HMI accessible on the 10 inch on board display.

WinKratos (optional) allows the complete management of the chamber functions: from manual control to the creation (through the graphic editor) of test profiles, including monitoring and recording, processing, graphical representation and analysis of data.

MyAngel24™ (optional) is the Advanced Services Platform developed by ACS to offer fast, effiicient and secure remote activities, allowing Automatic Reporting and Preventive Maintenance.

11

Modular walk-in chambers

Weazy™ HMI makes it possible to manage and monitor the chamber via the 10" on-board panel.

Main features
- Ethernet connection to the chamber
- Visualization of measures and recordings
- High configurability of chamber parameters
- Program and Manual chamber operation modes
- Delayed start of a program
- Automatic notifications of events and alarms
- 7 days data storage
- System available in several languages

Test program editor

- Possibilities for storing cycles of 370 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
- 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
- Enable/disable of chart display
- Zoom in, zoom out and scroll functions

Export function to convert the Weazy™ log file into ASCII format (usable in Excel or other applications)

Additional S/W tools for an Easy Integration of ACS test chambers in Test Labs

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 ACS test chambers, for both reading and writing.

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.

Example program LabVIEW
User interface
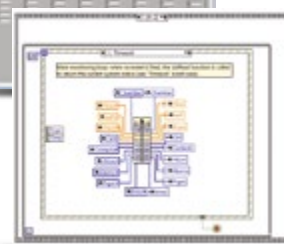
Development environment

MyAngel24™
ACS Advanced Services Platform

MyAngel24™ is the Advanced Services Platform developed by ACS for its customers. The system offers services designed to satisfy and anticipate customer needs, such as automatic reporting, remote chamber control, and monitoring of the main components status for preventive maintenance.
The chamber can be connected to Angelantoni servers through SIM card via mobile network or, through LAN connection via Ethernet.
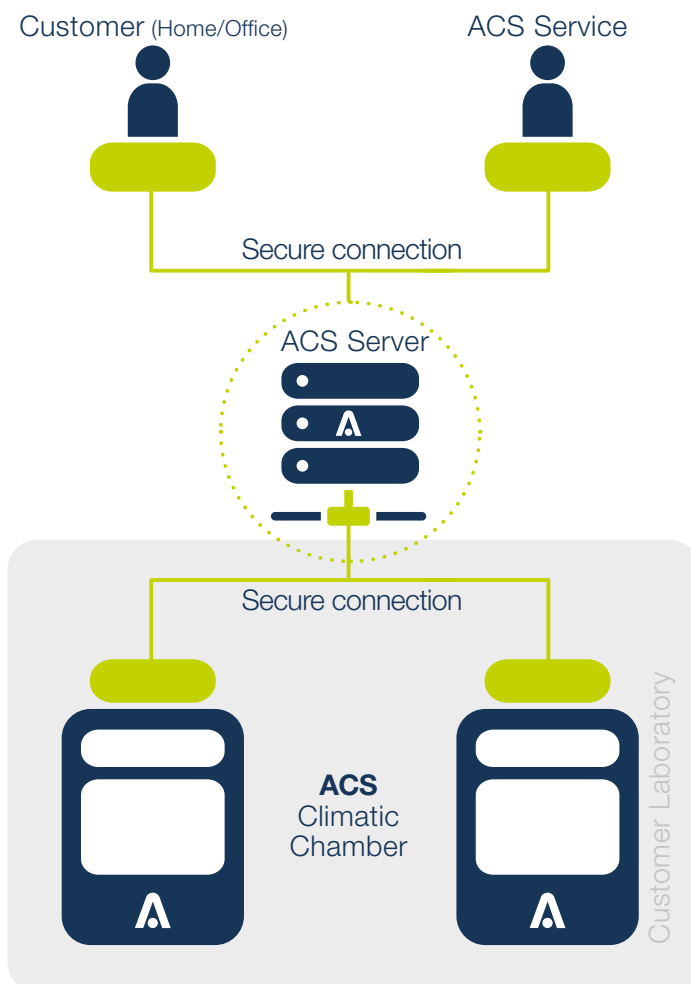
Diagnostics

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 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.

Security

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

Customer (Home/Office)   ACS Service

Secure connection

ACS Server

Secure connection

ACS Climatic Chamber

Customer Laboratory

13

WinKratos

Control and Supervision Software for ACS Environmental Test Chambers

WinKratos is the Advanced Software developed by Angelantoni Test Technologies for the control and supervision of ACS environmental test chambers. Designed for comprehensive and intuitive management, the software enables full control of chamber functions, from manual operation to the creation of customized test profiles via a graphical editor.

WinKratos integrates advanced tools for monitoring, data recording, processing, and analysis, providing detailed graphical representations for optimal test management. Reliable and field-proven, the software supports the simultaneous management of multiple ACS chambers, offering exceptional flexibility to meet the specific testing requirements of each customer

Installed on a dedicated PC, WinKratos allows centralized control of multiple chambers from a single workstation.

The desktop-style graphical interface is designed for quick and intuitive access to all functions, simplifying system operation.

Additionally, the integration with a PC ensures scalable performance and expandable data storage capacity to meet operational needs.
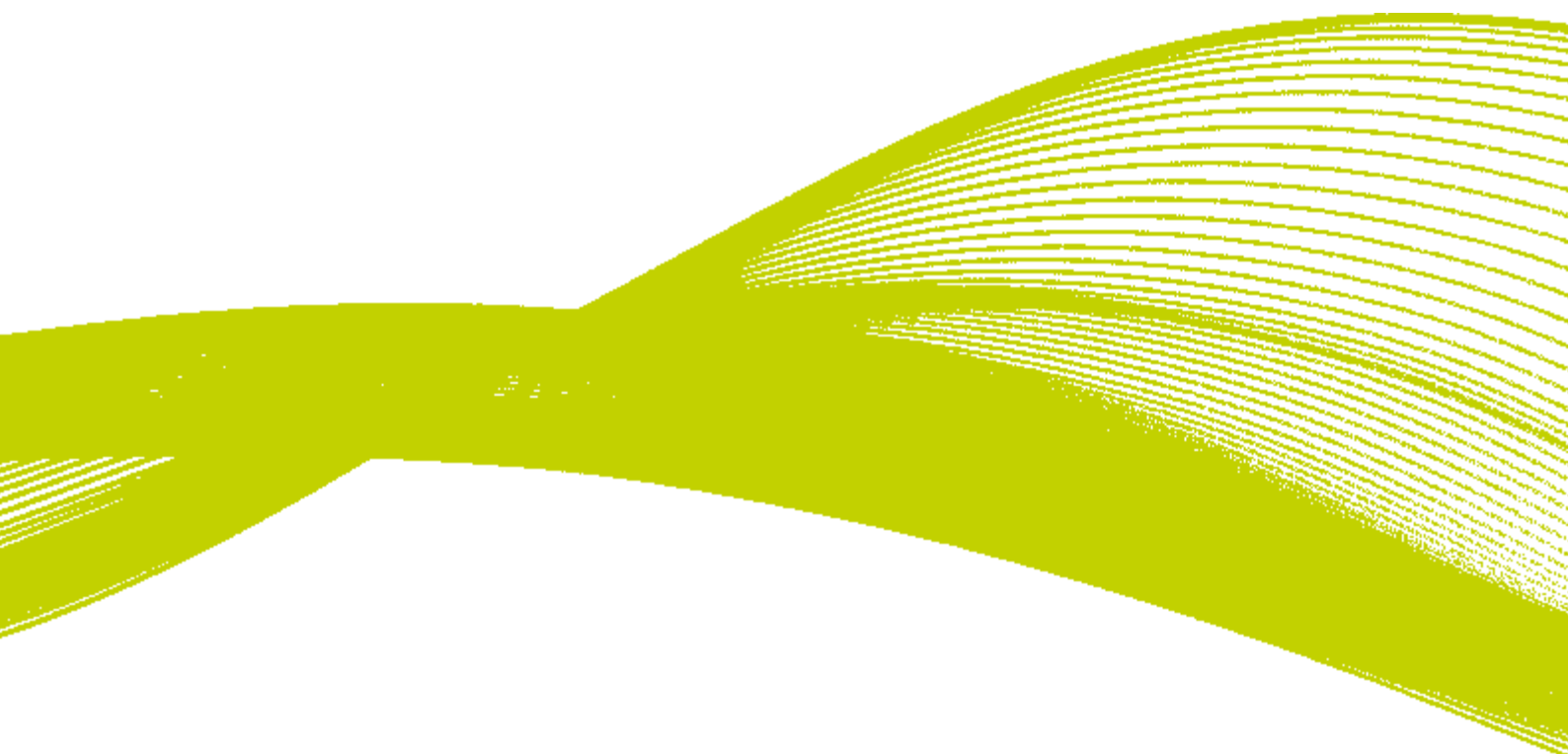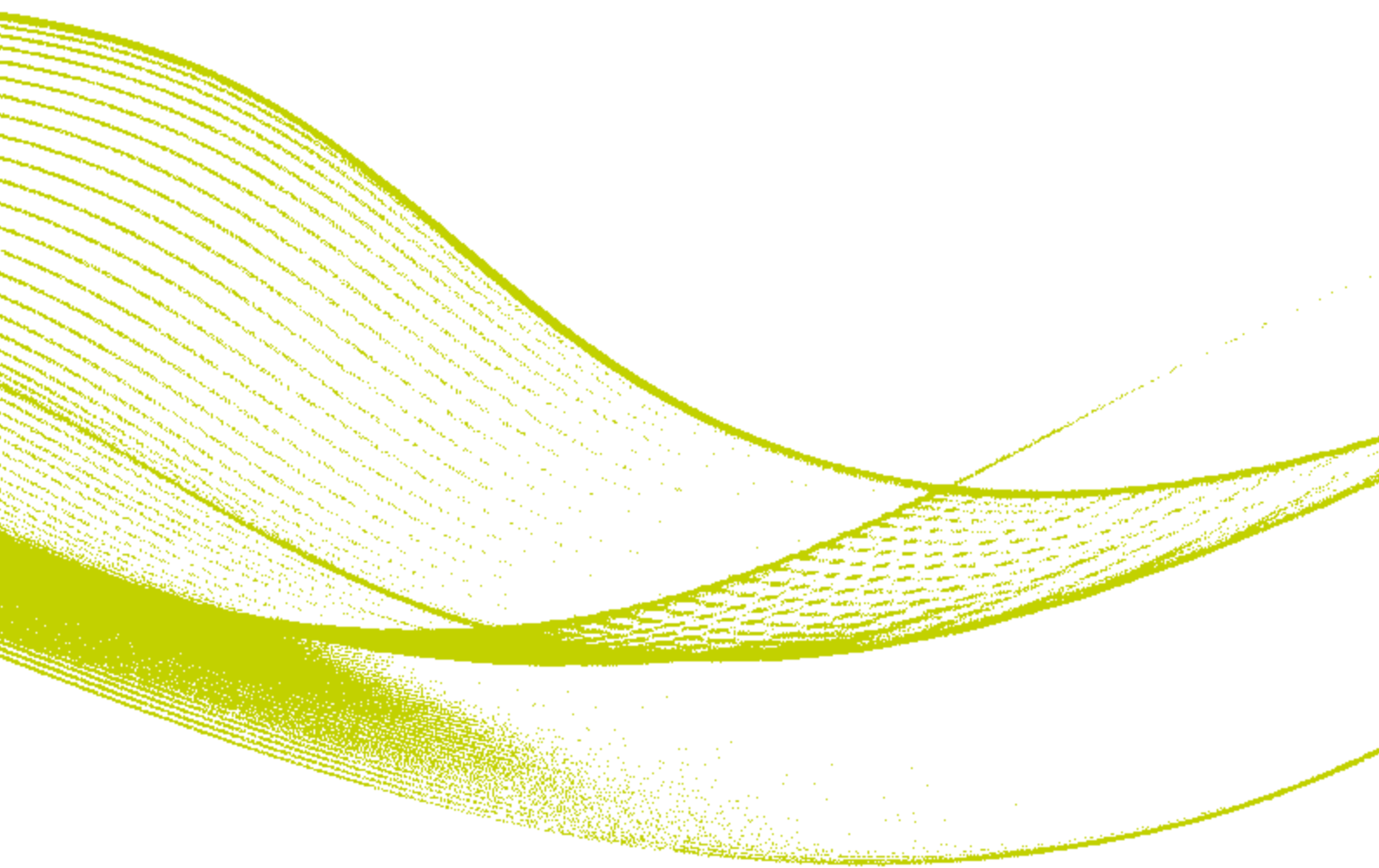
Angelantoni Test Technologies, owned by the **Angelantoni Group**, is the only company capable of offering a comprehensive range of environmental test chambers - **ACS** branded - for a great variety of applications, thanks to the expertise and technical know-how of its teams of experts. Innovation, flexibility and organization have always been the keys to success for ACS, world-famous since 1952 also for its high-tech test equipment such as Thermal High Vacuum Chambers for Aerospace applications and Calorimeters.

ENVIROMENTAL SYSTEM CERTIFICATION
DNV·GL
ISO 14001

QUALITY SYSTEM CERTIFICATION
DNV·GL
ISO 9001

Angelantoni Test Technologies
Località Cimacolle, 464
06056 Massa Martana (Pg) - Italy
Tel. +39 075.89551 (a.r.)
Fax +39 075 8955200
info@acstestchambers.it

Angelantoni
TECHNOLOGY FOR LIFE

ACS