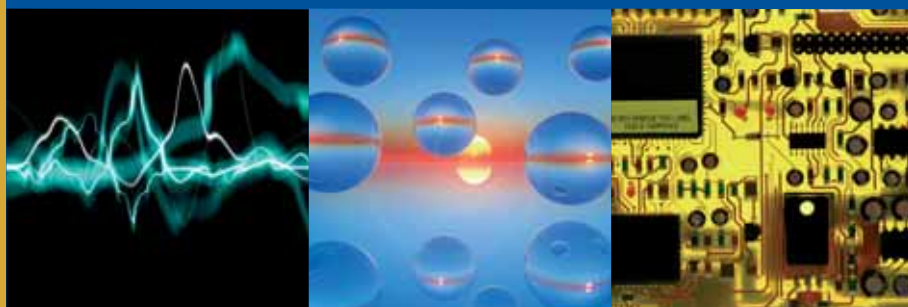
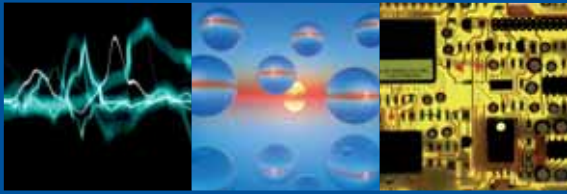


Wazzle

A new range of standard walk-in chambers





Mix and match to better fit your needs

Purpose

Without compromising our high standards of quality and reliability, we wanted to reduce delivery times to twelve weeks or less and avoid the costs of design and engineering normally associated with the customized walk-in chambers.

The solution is the WAZZLE; 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 the majority of requirements:

- | | |
|-----------------------|-------------------|
| 1. Test room | 3. Cooling Unit |
| 2. Air Treatment Unit | 4. User Interface |

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.

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.

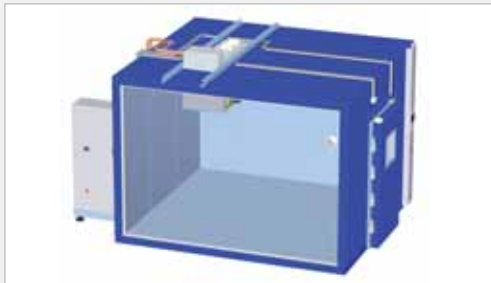
COOLING UNIT

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.

USER INTERFACE

The control system interface is placed near the door for all the versions of the walk-in chamber. It comprises:

- | | |
|--|--|
| 1. Emergency STOP push button | 3. Ethernet and USB connectors |
| 2. Touch panel programmer / controller | 4. Software + personal computer (optional) |



Advantages



Thanks to the new remote assistance system MyAngel24™ the chambers stay connected to the remote server 24 hours a day, monitoring running conditions and any anomalies, in order to guarantee faster and more efficient service and maintenance activities. They are accessible whenever and wherever, from any device with an internet connection and a simple web browser.

- 1. Reduction in the lead-time for chamber production
- 2. Improved cost-effectiveness of the equipment
- 3. Possibility to use the same combination of cooling unit and air treatment unit in walk-in chambers which have:
 - different geometry
 - different temperature rates
 - different minimum and maximum temperature limits
 - different thermal load
- 4. Easy to assemble on site thanks to complete installation instructions
- 5. Easy to disassemble, relocate and rebuild the equipment, if necessary
- 6. Possibility to refurbish existing facilities by using the cooling unit / air treatment unit / user interface without requiring major reconstruction work.
- 7. Possibility to upgrade the chambers through new accessories (portholes, windows on the door, S/W releases)

MAIN ACCESSORIES (optional)



Inspection window on the door



Panel with no. 2 portholes (ø150 mm internal size)



Double wing doors



PC remote control via WinKratos software



Remote air condenser (power supply at customer care)





Assembled WAZZLE





Customised walk-in chambers

A wide range of solutions are available for any customer requirements thanks to the experience of our Company in supplying equipment for applications in such diverse fields as electronics, aeronautics, automotive, home appliance and military.



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



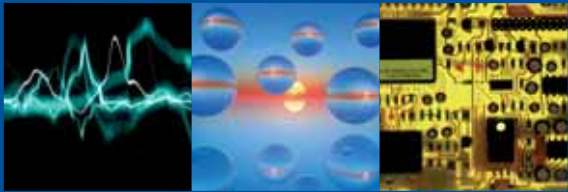
Walk-in vacuum chamber to test aircraft assemblies, it is able to simulate the altitude level up to 100.000 feet.



Calorimeter to test the efficiency of air conditioning units for industry and home appliance.



Drive-in chamber to test running vehicles.



Standard Sizes

Modular basic elements

FAST DELIVERY

EASY TO ASSEMBLE AND DISASSEMBLE

24H/7D MONITORING

RAPID UPGRADE

SIMPLE TO REFURBISH

Test room

Standard Size	Capacity	Internal Dimensions (WxDxH)
1. Compact	10 m³	2120 x 1820 x 2560 mm
2. Medium	16 m³	2120 x 3000 x 2560 mm
3. Large	30 m³	3300 x 3640 x 2560 mm
4. Extra Large	40 m³	3300 x 4820 x 2560 mm

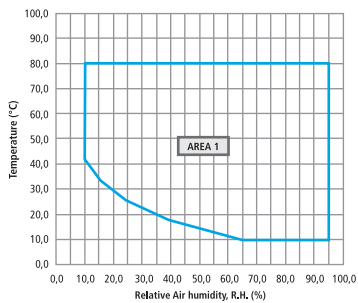
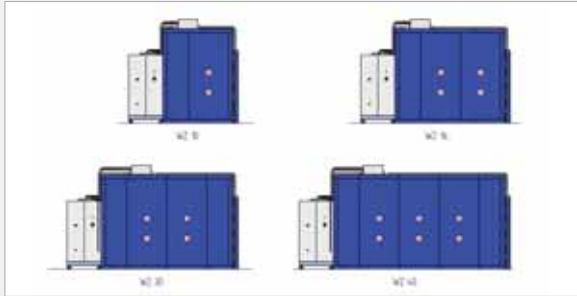
- Single wing door useful dimensions: 900x1900 (WxH)
- Double wing door useful dimensions: 2000x2000 (WxH)

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 the installation. Each test room standard size is compatible with any air treatment unit type.

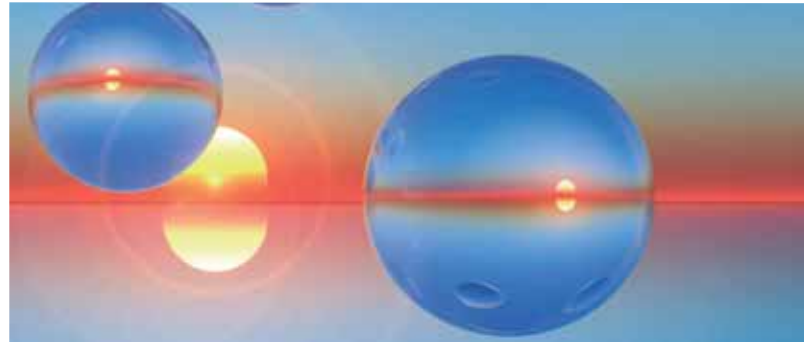
Humidity control system

Climatic working range 10/95% r.h.
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.



Focus on features



Air treatment and cooling units

Type	Electrical power (kW)	Type	Electrical power (kW)	Water consumption (l/min)*
WZH A1	22 KW (avg. 8 KW)	WZT A1	18 KW (avg. 7 KW)	43
WZH A2	26 KW (avg. 12 KW)	WZT A2	22 KW (avg. 11 KW)	53
WZH B1	42 KW (avg. 20 KW)	WZT B1	38 KW (avg. 18 KW)	80
WZH B2	52 KW (avg. 25 KW)	WZT B2	48 KW (avg. 23 KW)	103
WZH C1	61 KW (avg. 30 KW)	WZT C1	57 KW (avg. 28 KW)	120
WZH C2	79 KW (avg. 38 KW)	WZT C2	75 KW (avg. 36 KW)	153

*at a cooling water temperature of +29°C and temperature difference of 5°C, water temperature +12°C to +29°C

Six combinations of air treatment and cooling units are available.

All the air treatment units have the same dimensions:

1965x800x570 mm (WxDxH).

A air treatment unit: 2 fans

B and C treatment unit: 3 fans

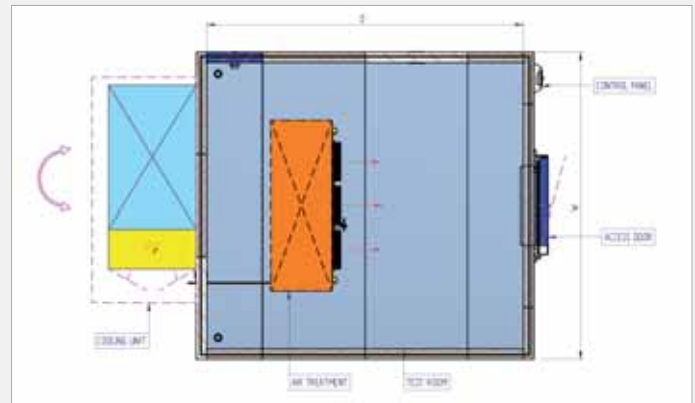
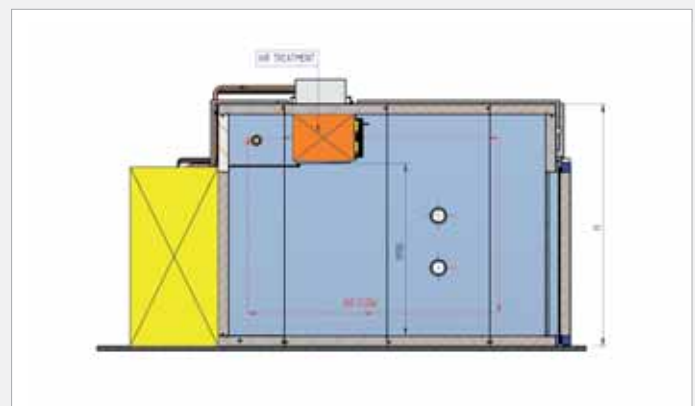
The cooling units are available in two sizes:

1. A1, A2, B1 and B2 dimensions: 2000x1010x2070 mm (WxDxH)

2. C1 and C2 dimensions: 2000x1210x2070 mm (WxDxH)

They can be rotated 180 degrees, in order to invert the opening side of the electrical box.

Thanks to our optimized design single-stage and cascade systems have the same footprint.



TEMPERATURE RANGES AND RATES¹

Size	Compact		Medium		Large		Extra Large	
	▲	▼	▲	▼	▲	▼	▲	▼
A1	2.7	1.1	2.0	0.8	1.2	0.5	1.0	0.4
B1	5.2	1.9	3.8	1.4	2.5	0.9	2.1	0.8
C1	5.5	2.0	5.5	2.0	3.7	1.4	3.0	1.2
A2	2.7	1.5	2.0	1.1	1.2	0.7	1.0	0.5
B2	5.2	2.6	3.8	1.9	2.5	1.3	2.1	1.0
C2	5.5	2.8	5.5	2.8	3.7	1.9	3.0	1.6

▲ HEATING UP

▼ COOLING DOWN

temperature range +80°C/-30°C

temperature range +80°C/-65°C

temperature range +80°C/-40°C

temperature range +80°C/-70°C

1. Temperature variation rates (°C/min) calculated in the temperature range -30°C/+80°C at empty chamber according to IEC 60068-3-5

Angelantoni Test Technologies (ATT), a company of the Angelantoni Group, is the only company capable of offering a broad range of test solutions for a great variety of applications, thanks to the expertise and technical know-how of its worldwide teams of experts. Three leading test technology brands belong to ATT: **ACS**, world-famous since 1952 for its design and manufacture of a comprehensive range of environmental test chambers, including high-tech test equipment such as high vacuum chambers for aerospace applications and calorimeters. With the acquisition of companies in France and Germany, and new joint ventures in China and India, other brands of test chambers are now available on the worldwide market: **BIA Climatic**, **TIRA Umweltsimulation** and **ZUNDAR**.

BIA, providing test benches and crash test systems to major companies, mainly in the automotive and aerospace fields, since 1986. The company philosophy is to provide innovative solutions through close cooperation with the customer in order to guarantee continual improvement of product quality and performance and optimize testing costs.

TIRA, specialized in electrodynamic shakers, material testing equipment, and balancing systems. Internationally renowned automotive manufacturers and suppliers, manufacturers of high-speed rotating components, aviation and aerospace equipment manufacturers, research facilities and institutes, and test centres all benefit from TIRA products and services worldwide.

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