DYCOMETAL
Testing Technology

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GENERAL CATALOGUE

www.dycometal.com

Our factory in Viladecans (Spain)

DYCOMETAL

THE COMPANY

DYCOMETAL EQUIPOS DE CONTROL DE CALIDAD, S.L. , founded in 1988, it has become the reference manufacturer of chambers for simulation of environmental tests both in Spain and internationally. From our beginnings we have the compromise with our customers of guarantee that our equipment reproduce faithfully the environmental conditions that the nature is capable to offer, satisfying the needs of the most exigent tests.

Our product range includes any kind of environmental test like, temperature, humidity, thermal shock, corrosion,…. That allow us to be one of the worldwide manufacturer with the more extensive portfolio of simulation devices, thanks to our high experience. Knowing that the importance that a good maintenance prolongs the life time of the devices, Dycometal has a technical maintenance service available to the customers continuously.

“The knowledge and extensive experience of our technical staff have created the basis of competitive and efficient maintenance”

DYCOMETAL

GOALS

Our first objective is design, develop, manufacture and give to the customers, quality products and service, with the end to satisfy the most exigent demands in the field of the environmental tests, maintaining our national leadership and our international projection.

Our R&D and engineering departments analyze each project to satisfy at maximum the needs of our customers.

The constancy actualization of our devices with the most advanced control systems, electronic regulation and informatics, according with the market.

CERTIFICATED LABORATORY

LCIS-DYCOMETAL is a laboratory belongs to DYCOMETAL EQUIPOS CC, S.L., but it have its own management, organization and own installations, adjusting to an own quality manual. LCIS has with enough means and with an organized and independent structure. It defines the technical direction of the laboratory, who assumes the responsibility from itself and the quality responsibility. Under these conditions, it is consider the LCIS like an impartial entity.

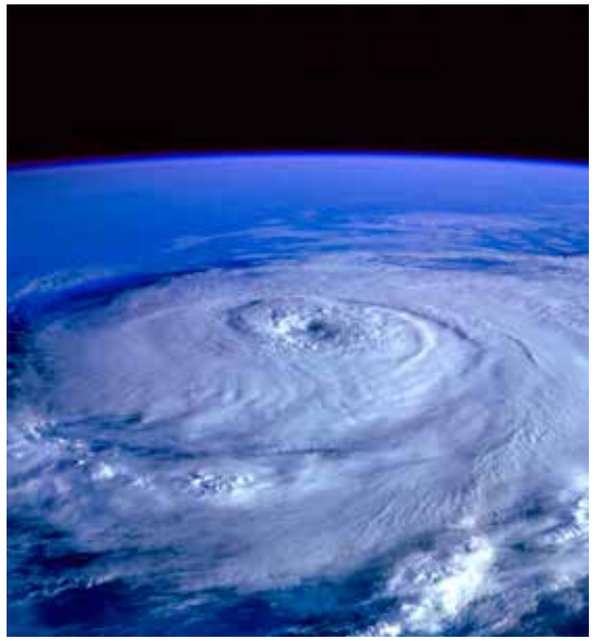
LCIS has a Quality Management System, to comply with the requirements of the customers, according with the standard: UNE-EN-ISO/IEC 17025:1999. This quality system is applicable in the activities of calibration and test in the installation of LCIS and the “in situ” tests made in the installation of the customers. This applies also to the calibration and test made over new chambers in the factory of DYCOMETAL.

DYCOMETAL

DYCOMETAL IN THE WORLD

During the years, we have gone increasing and reinforcing our international presence, have supplied devices in in much placed on the world and in all the continents.

At this moment, DYCOMETAL has a web of collaborators in several countries of the world, giving a direct support to the customer to guarantee the reliability of operation of our equipments, and a close and personalized maintenance service. The international interest for our equipments continues to grow.



OUR VALUES

DYCOMETAL in its development desire and protection of the environment, has acquire the compromise complying with the European directives and maintaining the quality standards and specifications in our products. Our main objective is the reduction of consumes, recycling materials, use of CFC's free gases, etc.

Our customer has the maximum compromise and guarantee of the environment protection, with each device that is acquired of our brand.

Sustainability

We advocate for maintenance of our planet and for these reason the materials that we use are recyclable in its great majority. All our equipments have a CE mark and comply with the current laws of Environmental Security.

R&D

Our technical and R&D office are continuously developing new prototypes, and as well as adapting the current models in different applications inside of the market of quality control in the Testing Technologies field.

QUALITY

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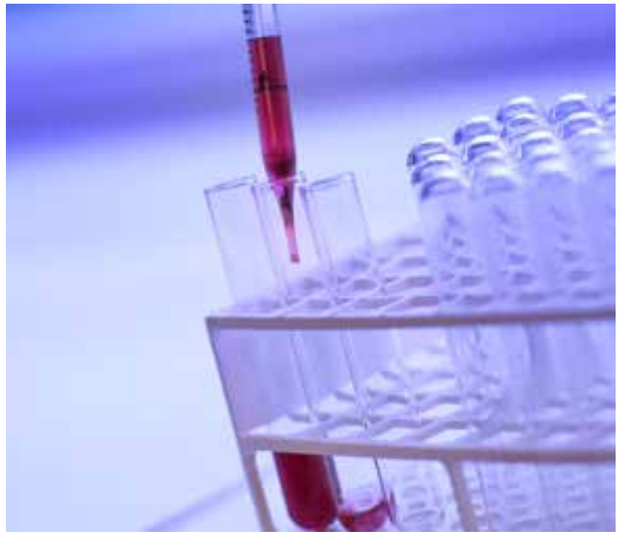
MARKET

Automotive

The manufacturers of cars and auxiliary automotive industry, must to guarantee the correct performance of each element that compound the vehicle in each type of climate, from the extreme heat of the dessert to the polar cold, passing by the most aggressive corrosion conditions.

Depending of the sample dimensions to be tested, the tests could be done in small compact chambers or in big drive-in chambers where the vehicle could be introduced completely



Pharma

Pharmaceutical products require of validation tests under conditions of temperature and humidity, with very long time for its approval. In addition, the capacity of store of these chambers will be very big, to conditioning an enough quantity of samples so that the test is repetitive.

All the conditions must to follow a strict conditions according with the international guidelines of the pharmaceutical industry. Our solutions pass from the smallest benchtop chamber to the big walk-in chambers.

Building

All the building materials installed outdoor, must to support strong environmental actions (rain, ice, sun, wind, etc) during the years. In Winter, it experiments high thermal changes during the day/night cycles, with humidity absorption during the day and freezing during the night provoking an important degradation in the material. Concrete curing, carbonatation, freeze-thawing, etc, are a part of our specialized portfolio in these type of tests

Other markets

If you look all the elements around you in your life, you will find that all of them must to pass an environmental test to guarantee them correct operation, transport or storage, definitely, during them life time.

Food, electronic components, furniture, etc, all of them must to pass a series of environmental test, to verify the durability and resistance at different conditions. For this reason, DYCOMETAL has always been in the vanguard presenting solutions for all type of applications.

"To be present everywhere means to conquer. To conquer, it is necessary to innovate and develop permanently, Innovation and development but also communication and service. These are the basic pillars of Dycometal"

DYCOMETAL

GENERAL CATALOGUE

CLIMATIC CHAMBERS
CCK / CM / CCK NG SERIES

General features

Devices totally designed to simulate the most different conditions of temperature and humidity, that could be generated in the nature as well as the accelerated conditions inspired of the industrialized world.

Organized according to:

1 Volume

The standardized compact volumes or “monoblock” have capacities from the smallest bench-top chambers of 48 liters until the higher volumes of 3000 liters.

CCK - 40/48

CCK - 70/300

2 Temperature range

Depending of the application, the climatic chambers CCK/CM, could be configured according with the necessary temperature range for each application, it could be from ambient, +10°C, 0°C, -25°C, -40°C or –70°C, until +180°C.

3 Humidity range

Humidity is the other characteristic control parameter for the climatic chambers, it could be from the 10% ,or lower, to the 98-100% RH.

CCK - 70/2000 2P

4 Stability and uniformity

When we want to acquire a climatic chamber, one of the most important points to consider is the homogeneity of the temperature and humidity in the space and in time.

5 Temperature change rates

The standardized models have determined gradients, but depending of the needs, these gradients could be until 10°C/min by mechanical elements, or higher with injection of liquid nitrogen.

CCK - 70/1000/10ESS

CCK - 40 / 110 NG

6 According the programmation

Control Manual (modelo CM)

- Automatic regulation: programs in memory, ramps-stabilizations (model CCK)

- Automatic regulation by touch screen panel (CCK NG model)

TEMPERATURE TEST CHAMBERS
CET,CETM Y CETM NG SERIES

General Features

The manufacturing philosophy of these chambers answers exactly to the same approach of the climatic chambers, both in the constructions features like the control.

- Different applications:electronical and electronic, automotive, aeronautical, etc
- Similar volumes than the climatic chambers, from 48 to 3000 liters
- Volúmenes adaptados en función del tipo de muestra a ensayar y adaptadores.
- Different control options:

  1-Easy regulator for a manual control (CET series)

  2-Automatic regulation with programming possibility (CETM series)

  3-By microprocessor with touch screen panel (CETM NG series)
- RS-232 communication port
- Walk-in chambers by welded structure or by panel.

WALK-IN OR VISITABLE CHAMBERS

General Features

When the number of samples to be tested is high or the dimensions are too big to get into a standard climatic chamber with a standard volume, it is necessary to use the modular chambers also named Walk-in chambers.

- Volumes between 700 liters and more than 300.000 liters
- Configuration adjusting to the existing space and geometrics
- Temperature range from -70°C until +90°C.
- Standard humidity range from 15% until 98% RH
- Different thickness of panel depending of the application
- Different internal finishes
- Standard or customized doors, with manual or automatized aperture.
- Interior shelves like optional
- Special light systems studied for each application.

- Different configurations of the airflow
- MODULBLOC configuration
- Different options of control:

  1-Manual, for stability and conditioning tests

  2-Automatic, for cyclical tests

CHAMBER TO COMBINE WITH VIBRATION SYSTEMS
CCKv Y CETMv SERIES

General Features

These devices combine vibration with the temperature and humidity conditions of a climatic chamber in order to simulate the similar climatic and vibrational conditions that the samples would support during its life time.

- Lateral movement system by rails with breaks.
- Control by microprocessor and remote control software for acquisition of data.
- Digital output/input for communication with the vibrational device.

- Adapted chambers for any kind of electrodynamic or hydraulic shaker.
- Adapted volumes depending of the type of sample to be tested and adapters to be used.
- High temperature change rates.
- Prepared chamber to vertical, horizontal or both vibrational tests.
- Removable base with hole in the floor of the chamber to couple with the vibration devices.
- Diaphragm made in silicone, resistant to high and low temperatures to reduce the losses of energy inside.
- Base without hole to use the chamber like a standard climatic chamber.
- Manual or automatized lift system.

THERMAL SHOCK CHAMBERS
CRT SERIES

General Features

These devices are used in the studies of the behavior that the materials suffer with the suddenly changes of temperature. Its fundament is based in the movement of the sample from one cold compartment to another heated compartment in seconds.

- The basket for samples has a frontal door to access to the workspace.
- The temperature range of each zone could be +250°C in the heat compartment and -70°C in the cold zone.
- Possibility to measure the temperature in air or in the samples, depending of the standards.
- Recovery times in each zone according with the standards.
- All the control elements are placed in an ergonomic position for a more comfortable used.
- Heated compartment with the option to work with humidity control, like a climatic chamber.
- It is possible to incorporate the independent function to work like a temperature test chamber.
- Vertical or horizontal construction, with two zones of test communicated with a movable platform.
- Each zone have observation windows and internal light.
- We have 3 standarized models defined by the size of the basket: 16 liters with basket of 3x 250mm, 64 liters with basket of 3 x 400 mm and 166 liters with basket of 3 x 550 mm.

FORCED AIR FREEZER CHESTS
ACR, CV SERIES

General Features

These devices have special design for samples of different dimensions and weights, with vertical or horizontal configurations that give more ergonomic depending of the samples to be tested.

1 HORIZONTAL FREEZER CHESTS (ACR)

These chests are special indicates for the conditioning of some type of finishes, the fast freezing of liquid substances, thermal fatigue studies in building materials, plastics or rubbers. The volumes differ between 150 and 750 liters, but we have the capacity to manufacture the equipment with special dimensions. The temperature range could get until -75°C.

2 VERTICAL FREEZER CHESTS (CV)

Design based in the climatic chambers. They are more comfortable to work and occupy less space than the horizontal freezers. They are specially indicated for light and manageable samples. Ideal for tests with high temperature change rates. Our wide range of standardized models goes from 81 liters until 2000 liters, in a temperature range until -75°C.

FORCED AIR HEATING OVENS
AFA SERIES

General Features

Thanks to the forced air circulation, the airflow in the interior of the oven generates an envelope of air to guarantee an unsurpassable homogeneity. It is ideal to bring high temperature change rates.

- Our production has of a high diversification in standard models, from 80 liters to 3000 liters.
- Interiors made in stainless steel and exterior made in galvanized and epoxy painted steel.
- Control of the temperature by one regulator to work at a fixed setpoint. Possibility to install one programmer in order to do tests with ramps and stabilization.
- Diversity of applications for test benches. From an external conditioning unit with union by flexible hoses of high temperature to turn-key fixed units.
- Possibility of walk-in chamber by panel or by welded compact structure (“monoblock”).

CHAMBER FOR DUST TEST EXPOSITION
CP SERIES

General Features

Dust test are carried out on different components to evaluate the protection degree against solid agents, evaluating the resistance in values of 1 to 6, being a nomenclature IP XY (X = from 1 to 6). These values will be given in function of the diameter of the particles used during the test.

- Standardized solutions from 216 liters to 8000 liters.
- Chambers characterized by a sturdy stainless steel interior construction, with large observation window with cleaning system for observation of the interior of the chamber.
- Different options of fixed the samples to be tested.
- Access port for cables inside of the chamber.

Devices prepared to comply with the different international standads, based mainly in two methodologies:

1- Dust suspension by envelope through a circulation pump.

2- Aspiration and suspension of the dust by compressed air injection or blower fan.

Depending of the particle type and diameter to be used in the tests the protection degree could change, according with IEC 60529 standards.

Degree Number	Device
IP-1Y	Diameter of particle ≥ 50mm
IP-2Y	Diameter of particle ≥ 12,5mm
IP-3Y	Diameter of particle ≥ 2,5mm
IP-4Y	Diameter of particle ≥ 1mm
IP-5Y	Protected against dust
IP-6Y	Dustproof

- Chambers prepared for different sizes of samples to be test.

CHAMBER FOR RAIN TEST EXPOSITION
CLL SERIES

General Features

Rain tests serves to evaluate and to qualify in alphanumeric form the samples and its encapsulations, depending of their protection level against external agents. The classification of the protection degree are specified by numbers IP XY (Y = from 1 to 7).

- Standard volumes of 512 and 1000 liters.
- Interior of the chamber made in stainless steel AISI 316 L, with big observation window in door.
- Rotating samples support platform with speed control.
- Waterproof connector in the interior of the chamber in order to make the tests with the sample electrically connected.

- Pasa-muros de 80 mm, para el paso de cables al interior de la cámara.
- Sistema programable.

Configuration of the chamber depending of the IP protection degrees, according IEC 60529 normative

Degree number	Device
IP-X1	Dropbox, rotating platform
IP-X2	Dropbox, static platform
IP-X3	Oscillatory arc or shower head
IP-X4	Fixed arc & oscillatory, rotating platform
IP-X5	Spray with sprinklers ∅ 6,3 mm
IP-X6	Spray with sprinklers ∅ 12,5 mm
IP-X7	Bath inmmersion

- Possibility to modify the chamber in order to comply other standards like: SAE J575, JIS D0203, etc. Or possibility to comply several standards in the same chamber.
- T Turn-key solutions with IEC 60529.

SALT SPRAY CHAMBER
SSC SERIES

General Features

The objective of the salt spray tests is study the behavior of the materials, devices and coatings, exposing them during a specific time to a one atmosphere with a highly saline content.

- Chambers manufactured according with standards: ISO 9227, ASTM B117, DIN 50 021, etc.
- 4 standardized volumes: 140, 400, 1000 and 2000 liters.
- Workspace made in fiberglass and resin completely invulnerable to corrosion.
- High homogeneity in temperature thanks to its heating resistances adhered to the wall of the workspace.
- Exterior construction in stainless steel or plastic, depending on the model.
- Canopy made in methacrylate for the models of 140 and 400 liters and in white polyester for the models of 1000 and 2000 liters.
- Canopy manufactured with 30° angle to avoid dripping on the samples.
- Water seal to guarantee the sealing of the chamber.
- Simple and complete control.
- Turn-key solutions
- Possibility of walk-in chambers for big samples.

SSC-400NG SERIES

General Features

DYCOMETAL in its desire for innovation has developed a new model of saline fog chamber, updating the aesthetic, but maintaining the quality parameters that it has been demonstrating in its production process over the years.

- Chamber manufactured according with standards: ISO 9227, ASTM B117, DIN 50 021, etc.
- Designed under the most common volume: 400 liters.
- High homogeneity in temperature
- Workspace made in plastic
- Exterior made in plastic.
- New design of salt spray system.
- Control by 3.5 “color touch screen.
- Different option menus: programmer, historic, profiles, etc.
- Option of different colors for the exterior

CYCLICAL CORROSION CHAMBER
SSCK, SSCV SERIES

General Features

The cyclical corrosion test chambers allow the realization of environmental tests combining different techniques: salt spray, moisture condensation, drying with temperature and humidity control. These cameras are programmed so that each test alternates in any sequence or to repeat itself automatically.

- These tests are very aggressive so the chamber will be manufactured in stainless steel AISI 316L internally.
- The interior of the chamber has a special coating which resists the high temperatures and the corrosion.
- 5 standardized volumes: 216, 400, 600, 1000 and 2000 liters.
- Exterior construction in stainless steel or plastic, depending on the model and painted with epoxy paint.
- Canopy made in transparent methacrylate.
- Canopy manufactured with 30° angle to avoid dripping on the samples.
- Water seal to guarantee the sealing of the chamber.
- Two optional configurations:

  1 - Without cooling group (SSCV), when the test has easy conditions to get, temperature conditions of the room +23°C.

  2 - With cooling group (SSCK), when the conditions of the test are stronger, with temperatures lower than the room temperature or for stage of dry.
- The availability of an integrated cooling group in the same chamber provides greater stability in temperature and humidity, as established by the standards (+/-3% RH).
- Control by microprocessor.
- RS-232 communication port.
- Remote control software.

HUMIDOSTATIC AND KESTERNICH CHAMBER
CH, VCK SERIES

General Features

Kesternich corrosion test chambers are designed to simulate industrial or urban atmospheres, by forming an atmosphere in accordance with DIN 50 018 with the addition of sulfur dioxide (SO2) to the air. We also have a less corrosive variant, called “tropical climate test” or “humidostatic test”, according to DIN 50 017, whose difference lies in the non-introduction of gases.

- Due to the highly corrosive atmosphere with gases, the interior of the chambers is made in stainless steel AISI 316 L, for Kesternich.
- Internal reservoir with immersion resistance for precise control of the water heating temperature, in accordance with the standards of the standard.
- Satandarzied volumes of 300 and 572 liters.
- Possibility of horizontal construction
- Test variant controlling the humidity between 75% and 100%, by air movement to homogenize the hydrothermal conditions setpoint.
- Turn-key solutions.

“TESTING TECHNCLOGY: FIND IN OUR EQUIPMENT THE STABILITY THAT YOUR TESTS NEED”