DYCOMETAL

Testing Techn

CLIMATIC TEST CHAMBER

CCK-T SERIES

DYCOMETAL

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DYCOMETAL EQUIPOS DE CONTROL DE CALIDAD S.L. is a Spanish company with extensive experience in the manufacture of climate chambers for environmental testing.

The objective of our products is to simulate environmental conditions, from the most common to the most aggressive, adapting the devices to the needs of each client and supplying equipment for the required tests according to the standards and directives they require.

We have installed devices worldwide (on 4 continents) and have an international distribution network in more than 20 countries.

Our added value is completed with our specialized technical service, which offers the customer professional installation, training, calibration, preventive maintenance, spare parts, telephone or web support, on-site diagnostics and repair.

DYCOMETAL is a leader in the Spanish market and offers its expertise in environmental systems for consulting services. We analyze and propose different solutions for specific tests and manufacture solutions according to your requirements.

SUSTAINABILITY	We are committed to protecting our planet, which is why the materials we use are mostly recyclable. All our equipment bears the CE marking and complies with current environmental safety standards.
QUALITY	Our technical and R&D offices are constantly developing new prototypes, as well as adapting current models for different applications within the field of Quality Control in the area of Technological Testing.
R+D	All our devices are thoroughly tested before being shipped to the customer to ensure it functions correctly. For special projects, the equipment will be custom-designed to guarantee it meets all the customer's requirements.

CLIMATIC CHAMBER CCK-T SERIES

NEW DESIGN

The **CCK-T series** of climate chambers has been designed to offer precise, reliable, and versatile environmental control in testing processes.

With robust engineering and advanced temperature and humidity control technologies, these chambers allow for the reproduction of extreme or highly specific conditions to guarantee the quality, strength, and performance of materials, components, and products.

The **CCK-T range** combines efficiency, safety, and ease of use, making it an indispensable tool for laboratories, research centers, and production lines that require consistent and traceable results.

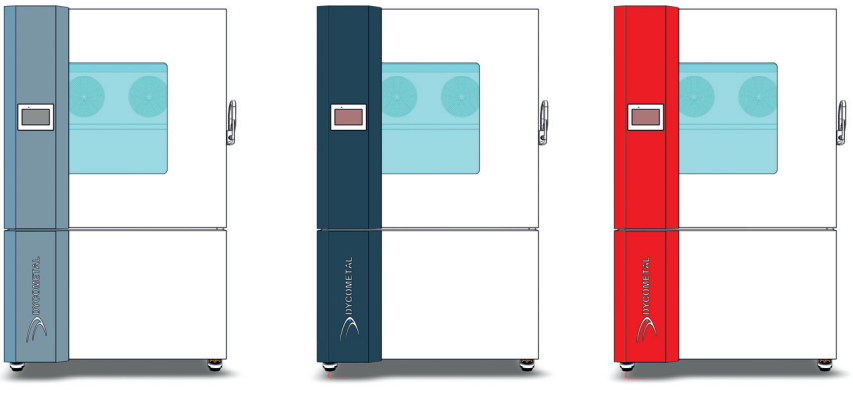
BENEFITS

- Left or right door opening
- Mechanical lock with security key
- Observation window in door
- New air diffusion system
- Mobile design with leveling
- Ergonomically integrated control panel
- Operating status lighting
- Environmentally friendly refrigerants
- Compliant with international standards and requirements EN, IEC, MIL-STD, etc.
- Custom designs

VOLUMES

Standardized compact or monoblock models offer capacities ranging from 125 liters up to larger volumes of 3000 liters in standard configuration. However, sometimes, due to space constraints, the samples to be tested, or the standards to be met, standard compact or “monoblock” chambers may not be suitable for the customer’s needs.

DYCOMETAL offers a detailed needs assessment service for each client, allowing us to adapt our standard chambers to their specific requirements, such as modifications to interior dimensions, horizontal configurations, special doors, and more. Even the color of the chamber can be customized.



TEMPERATURE RANGE

The **CCK-T** series climate chambers have a positive temperature range up to +150 °C, with the possibility of extending it to +180 °C.

This **HEATING SYSTEM** includes:

- Heating system using stainless steel or aluminum heating elements.
- Pt100 DIN Class A temperature control probe.
- Independent over-temperature thermostats with automatic shut-off of the room heating and humidification system.

Regarding the **COOLING SYSTEM**, due to the recent amendment to the European F-Gas Regulation on refrigerants, refrigerants with a GWP (Global Warming Potential) exceeding 150 may not be used in newly manufactured equipment.

LOW GWP

DYCOMETAL, in its commitment to development, environmental protection, compliance with European directives, and maintaining the highest quality standards and specifications for our devices, has replaced the current refrigerants in its new **CCK-T** chambers with new, low-GWP refrigerants that meet the new F-Gas regulations.

This ensures our customers receive the highest level of environmental protection with every piece of equipment they purchase from our brand, such as our **R-744 (CO2)**-based refrigeration system.

TEMPERATURE CHANGE RATES

Modern environmental testing has become increasingly demanding in terms of the temperature gradients to which the sample is subjected. One of the most widely used tests today is the accelerated stress test, or Stress Screening (ESS), during which the sample is subjected to high cooling or heating gradients.

DYCOMETAL's **CCK/CETM-T ESS** models are manufactured to meet the most demanding needs of our customers.

The cooling and heating change rates are configurable in the **CCK-T** series chambers. These models feature a standard gradient that can be modified, reaching speeds of over 15 K/min as required

HUMIDITY RANGE

Humidity is another key parameter controlled by climate chambers, ranging from 10% to 98% RH. **CCK-T** chambers use a **HUMIDIFICATION SYSTEM** based on an electronically controlled water bath with electric heating elements, generating humidity through a steam system.

Producing steam under positive pressure facilitates its entry and subsequent mixing within the main air ducts.

The **DRYING SYSTEM** operates within the refrigeration unit itself, using an evaporative system.

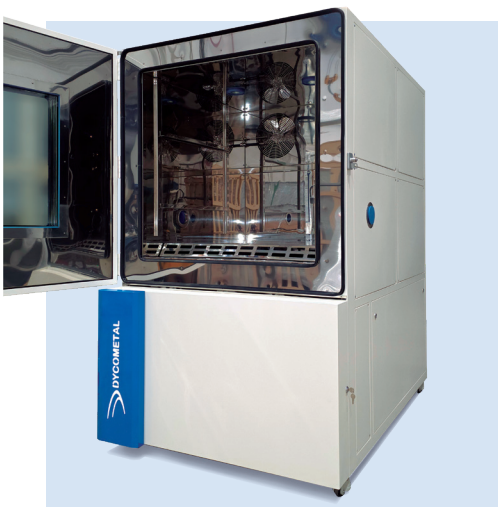
Both systems are controlled by a **CAPACITIVE SENSOR** that requires no wick maintenance or water supply.

STABILITY AND UNIFORMITY

The **CCK-T** chambers feature an interior technical zone located along the entire back wall, housing the entire air treatment system. All air is circulated and conditioned within this zone, creating a forced-draft air envelope.

This design achieves excellent air distribution, maximizing airflow within the workspace to ensure high stability and uniformity of temperature and relative humidity.

To guarantee the stability and uniformity of our equipment, in 2003 we established our own calibration laboratory, **LCIS**. Therefore, all environmental chambers manufactured by **DYCOMETAL** are verified before leaving the factory to ensure quality parameters for our customers.



CONSTRUCTION

The **CCK-T series** climatic chambers offer robust construction with high-efficiency insulation. The materials are exceptionally durable, ensuring reliable performance even under the most extreme temperature and humidity conditions.
Their design facilitates integration into laboratories and testing facilities

- Constructed on a white painted steel tube and sheet metal frame.
- Aesthetic detail in corporate blue that houses the touch screen.
- Large status light indicating device operation.
- Mechanical lock with security key.
- Completely sealed stainless steel interior with no internal welds.
- New floor-mounted air diffuser system with load capacity.
- Thermal insulation consisting of rock wool and PUR.
- Door made of stainless steel inside and out.
- Door aperture to the right or the left, as requested.
- Double-sealed gaskets ensure a superior airtight seal.
- Observation window.
- Interior light controlled via touch panel.
- Access-port with plug, 50 or 80 mm Ø depending of the model.
- 2 stainless steel shelves.
- 4 height-adjustable casters for easy mobility, stability and leveling of the chamber.

CONTROL

The system's intelligence is based on distributed control, incorporating advanced PID temperature/humidity blocks and integrated actuator control, thus optimizing performance. Monitoring and control are accessed via a backlit color touchscreen.

The control panel features an intuitive and user-friendly interface with graphic symbols, providing access to various functionalities and data logging.

The screen allows users to create, edit, and enable programs, as well as view the test profile in a graphical environment, track operating time, and extract the graphed test data log via a USB port.

The communication interface enables communication with multi-chamber a PC-based control and recording software.

- 4,3" or 7" color display, depending of the model.
- Password-protected access with multiple levels.
- Direct reading of actual and setpoint temperature and relative humidity values.
- AUTO/MANUAL modes.
- Delayed start.
- Program edition.
- Parameter trend monitoring.
- Display of the test profile.
- General description of set and current parameters during operation.
- Unlimited day programming.
- User-adjustable parameter calibration.
- Real-time clock.
- Alarm management via text message on the climatic chamber control screen, notifying the user of the incident, date, time and type.
- Languages: Spanish, English, French, Czech, Polish and Italian. (Other languages available upon request).
- 1x RS-232 or Ethernet TCP/IP port for communication with an external PC.
- WEBSERVER. Allows to use all the touchscreen functionalities on any device on the network. It requires no software installation; it only works with the computer's standard web browser.

SOFTWARE

Programming and data acquisition software in a WINDOWS environment, with the following features:

- Recording and storing of the tests files.
- Viewing existing files.
- Obtaining temperature and humidity registers in a digital file with programmable recording intervals.
- Graphical representation of the test, X-Y type, displaying both programmed and current values.
- Creation of programs or modification of existing ones.
- OPC Server for connecting to remote instrumentation via the Internet, for reading and writing values to monitoring packages such as Wonderware® or Labview (for Ethernet options).
- Ability to convert test records to ASCII format.

TABLES OF MAIN FEATURES

MAIN FEATURES OF 0 ºC CHAMBE

MODELS		CCK-	0/125T	0/180T	0/300T	0/480T	0/648T	0/1000T	0/1500T-1P	0/2000T-1P	All
Volume		Liters	125	180	300	480	648	1000	1500	2000	
	Height	mm	500	600	700	800	900	920	1000	1000	
Internal dimensions	Width	mm	500	600	700	800	900	1000	1000	1000	
	Depth	mm	500	500	625	750	800	1100	1500	2000	
	Height	mm	1450	1560	1660	1760	1830	1895	2150	2150	
External dimensions	Width	mm	700	820	920	1005	1170	1200	1200	1250	
	Depth	mm	850	900	1025	1120	1225	1500	2000	2425	
Thermal Test											
Minimum temperature		ºC									0 ºC
Maximum temperature		ºC									150 ºC
Cooling temperature change rate (1)		ºC/min									1 ºC/min
Heating temperature change rate (1)		ºC/min									2 ºC/min
Temperature stability		ºC									±0,3 ºC to ±0,5 ºC
Temperature uniformity		ºC									±0,5 ºC to ±1,5 ºC
Climatic test											
Temperature range		ºC									+10 ºC to +90 ºC
Humidity range		%RH									30 %RH to 98 %RH
Dew point - Category 1		ºC									+6,5 ºC to +86 ºC
Humidity stability		%RH									±1 %RH to ±3 %RH

MAIN FEATURES OF -20 ºC CHAMBERS

MODELS		CCK-	20/125T	20/180T	20/300T	20/480T	20/648T	20/1000T	20/1500T-1P	20/2000T-1P	All
Volume		Liters	125	180	300	480	648	1000	1500	2000	
	Height	mm	500	600	700	800	900	920	1000	1000	
Internal dimensions	Width	mm	500	600	700	800	900	1000	1000	1000	
	Depth	mm	500	500	625	750	800	1100	1500	2000	
	Height	mm	1450	1560	1660	1760	1830	1895	2150	2150	
External dimensions	Width	mm	700	820	920	1005	1170	1200	1200	1250	
	Depth	mm	850	900	1025	1120	1225	1500	2000	2425	
Thermal Test											
Minimum temperature		ºC									-20 ºC
Maximum temperature		ºC									150 ºC
Cooling temperature change rate (1)		ºC/min									1 ºC/min
Heating temperature change rate (1)		ºC/min									2 ºC/min
Temperature stability		ºC									±0,3 ºC to ±0,5 ºC
Temperature uniformity		ºC									±0,5 ºC to ±1,5 ºC
Climatic test											
Temperature range		ºC									+10 ºC to +90 ºC
Humidity range		%RH									10 %RH to 98 %RH
Dew point - Category 1		ºC									+6,5 ºC to +86 ºC (-5 ºC limited on time)
Humidity stability		%RH									±1 %RH to ±3 %RH

MAIN FEATURES OF -30 ºC CHAMBERS

MODELS		CCK-	30/125T	30/180T	30/300T	30/480T	30/648T	30/1000T	30/1500T-1P	30/2000T-1P	All
Volume		Liters	125	180	300	480	648	1000	1500	2000	
	Height	mm	500	600	700	800	900	920	1000	1000	
Internal dimensions	Width	mm	500	600	700	800	900	1000	1000	1000	
	Depth	mm	500	500	625	750	800	1100	1500	2000	
	Height	mm	1450	1560	1660	1760	1830	2140	2150	2150	
External dimensions	Width	mm	700	820	920	1005	1170	1293	1200	1250	
	Depth	mm	850	900	1025	1120	1225	1605	2000	2425	
Thermal Test											
Minimum temperature		ºC									-30 ºC
Maximum temperature		ºC									150 ºC
Cooling temperature change rate (1)		ºC/min	2,5	2,5	3	2,5	2,5	2,5	2	2	
Heating temperature change rate (1)		ºC/min	3,5	3,5	4	4	4	4	3,5	3,5	
Temperature stability		ºC									±0,3 ºC to ±0,5 ºC
Temperature uniformity		ºC									±0,5 ºC to ±1,5 ºC
Climatic test											
Temperature range		ºC									+10 ºC to +90 ºC
Humidity range		%RH									10 %RH to 98 %RH
Dew point - Category 1		ºC									+6,5 ºC to +86 ºC (-5 ºC limited on time)
Humidity stability		%RH									±1 %RH to ±3 %RH

MAIN FEATURES OF -45 ºC (CO_2) CHAMBERS

MODELS		CCK-	45/125T	45/180T	45/300T	45/480T	45/648T	45/1000T	45/1500T-1P	45/2000T-1P	All
Volume		Liters	125	180	300	480	648	1000	1500	2000	
	Height	mm	500	600	700	800	900	920	1000	1000	
Internal dimensions	Width	mm	500	600	700	800	900	1000	1000	1000	
	Depth	mm	500	500	625	750	800	1100	1500	2000	
	Height	mm	1450	1560	1660	1760	1830	2140	2150	2150	
External dimensions	Width	mm	700	820	920	1005	1170	1293	1200	1250	
	Depth	mm	850	900	1025	1120	1225	1605	2000	2425	
Thermal Test											
Minimum temperature		ºC									-45 ºC
Maximum temperature		ºC									150 ºC
Cooling temperature change rate (1)		ºC/min	2	2	2	2	2	2	1,5	1,5	
Heating temperature change rate (1)		ºC/min	3	4	4	4	4	4	3,5	3,5	
Temperature stability		ºC									±0,3 ºC to ±0,5 ºC
Temperature uniformity		ºC									±0,5 ºC to ±1,5 ºC
Climatic test											
Temperature range		ºC									+10 ºC to +90 ºC
Humidity range		%RH									30 %RH to 98 %RH
Dew point - Category 1		ºC									+6,5 ºC to +86 ºC (-5 ºC limited on time)
Humidity stability		%RH									±1 %RH to ±3 %RH

MAIN FEATURES OF -70 ºC CHAMBERS

MODELS		CCK-	70/125T	70/180T	70/300T	70/480T	70/648T	70/1000T	70/1500T-1P	70/2000T-1P	All
Volume		Liters	125	180	300	480	648	1000	1500	2000	
	Height	mm	500	600	700	800	900	920	1000	1000	
Internal dimensions	Width	mm	500	600	700	800	900	1000	1000	1000	
	Depth	mm	500	500	625	750	800	1100	1500	2000	
	Height	mm	1450	1560	1660	1760	1830	2140	2150	2150	
External dimensions	Width	mm	700	820	920	1005	1170	1293	1200	1250	
	Depth	mm	850	900	1025	1120	1225	1605	2000	2425	
Thermal Test											
Minimum temperature		ºC									-70 ºC
Maximum temperature		ºC									150 ºC
Cooling temperature change rate (1)		ºC/min	2	2	2	2	2	2	1,5	1,5	
Heating temperature change rate (1)		ºC/min	3	4	4	4	4	4	3,5	3,5	
Temperature stability		ºC									±0,3 ºC to ±0,5 ºC
Temperature uniformity		ºC									±0,5 ºC to ±1,5 ºC
Climatic test											
Temperature range		ºC									+10 ºC to +90 ºC
Humidity range		%RH									10 %RH to 98 %RH
Dew point - Category 1		ºC									+6,5 ºC to +86 ºC (-5 ºC limited on time)
Humidity stability		%RH									±1 %RH to ±3 %RH

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