DYCOMETAL

Testing Technology

VERTICAL FREEZER

CV SERIES

Vertical laboratory freezers are used for thermal fatigue studies in the building materials, plastics and rubber industries. They occupy less floor space than horizontal freezers, a great advantage when working space is at a premium in laboratories. In addition, thanks to their vertical design, they offer improved loading ergonomics.

GENERAL ISSUES

- Forced air circulation.
- Standard volumes between 48 and 2000 liters.
- Temperature ranges from -70°C, -40°C, etc.
- Compliance with standards: UNE, DIN, MIL, ISO.
- Ergonomic and robust.
- Customized designs.

CONSTRUCTION

- Built on tubular structure and galvanized steel sheet, painted according to RAL-9010.

- Interior and door in stainless steel, completely watertight and without interior welding.

- Thermal insulation formed by polyurethane and rock wool.

- Free of fluorochlorinated hydrocarbons, asbestos and lead oxide and mercury as stipulated by environmental regulations concerning the installation of thermal-acoustic insulation.

- Air circulation: forced draft by means of fans located at the rear of the chamber.

- Standardized models with capacities from 80 liters to 2000 liters.

- 4 multidirectional swivel casters and/or height adjustable anti-vibration support, to facilitate mobility (according to optional models).

- Wall pass-through, made of silicone with 80 mm ø watertight plug (various diameters).

- 2 sample-holder trays made of stainless steel.

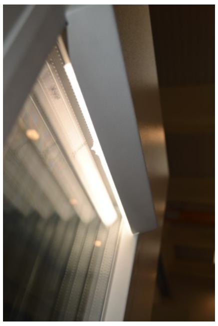
- Customized designs such as generators, chambers adapted to shakers, dynamometers, volumetric expansion, pulsating pressure, fatigue, hardness, yield strength, torsion-strain.

CONTROL

- Digital controller displaying actual value and set point reading.
- Direct temperature reading in °C.
- Retention of entered working values in case of power failure.
- Optimization of working values by means of cold PID parameters.
- Type of reading probe: Pt-100 Ohm, DIN Class A.
- Manual desiccant function.
- Alarm reset.
- General current disconnecting switch.

OPTIONAL ELEMENTS

- Raised support table for greater ergonomics in the 81-liter models.
- Observation window, made of several securit type glass panes.
- Interior light for sample illumination.



- Additional wall access-, made of stainless steel with silicone plug: 25, 50, 80, 100, 130 mm Ø.
- Reinforced floor for heavy samples.
- IR sight glass for thermography inside the chamber.
- Cryogenic gloves on the door, for handling samples inside.
- Additional standard trays.
- Reinforced trays, for placement of heavier samples.

- Internal cold extraction system for temperature cycles.
- Micro-switch on door to stop fans when opening the door.
- Electromagnetic door lock to prevent opening during the test.
- Cryogenic valve for liquid nitrogen injection.

OPTIONAL ELEMENTS

• Programmer for temperature cycling, with RS-232 communications port and control software.

• Paperless chart recorder with color display and USB port for data extraction and Ethernet communication port.

• Paper chart recorder with LED display and one pen per channel.

• Weekly time programmer for programmed on/off.

STANDARDS

Some of the most common regulations where freezing equipment is used are:

- DIN 40046, page3, test A
- IEC 68-2-1, test A
- BS 2011, part 2, test A
- VG 95332, page 3 y 22
- MIL-STD 810D, method 502.2
- MIL-E 5272, test 4.2
- Etc.

MAIN FEATURES

MODELS		CV-	40/81	40/125	40/180	40/300	40/480	40/648	40/1000	40/1500	40/2000
		CV-	70/81	70/125	70/180	70/300	70/480	70/648	70/1000	70/1500	70/2000
Volume		Liters	81	125	180	300	480	648	1000	1500	2000
Internal Dimensions	Heigth	mm	450	500	600	700	800	900	1000	1000	1000
	Width	mm	450	500	600	700	800	900	1000	1000	1000
	Depth	mm	450	500	500	625	750	800	1000	1500	2000
External Dimensions	Heoght	mm	1293	1550	1743	1843	1820	2000	2100	2100	2100
	Width	mm	974	790	900	1000	1093	1193	1293	1293	1293
	Depth	mm	820	870	1050	1220	1185	1290	1505	2225	2650
Thermal Test											
Minimum temperature		ºC	-40 -70	-40 -70	-40 -70	-40 -70	-40 -70	-40 -70	-40 -70	-40 -70	-40 -70
Maximum temperature		ºC	Ambient								
Cooling temperature gradient (1)		ºC/min	1 to 2								
Temperature stability (2)		ºC	±0,1 ºC to ±0,3ºC								
Temperature unifromity (2)		ºC	±0,5 ºC to ±1,5ºC								
Power											
Approx. weight		Kg	220 250	250 275	400 425	550 575	700 750	850 920	1000 1080	1120 1200	1280 1340
Voltage		V	400V 3N~PE								
Condensation			Air-cooled								
Noise level (dB approx.)		dB	<65								

Notes: (1) Gradients according to IEC EN 60068-3-5, without load (2) In thermal tests, at 25ºC, without load.

Parc D'activitats De Viladecans
C/ De La Ciència, 35-37. 08840
Viladecans (Barcelona) - España
Tlf: (34) 936 526 610
E-mail: dycometal@dycometal.com