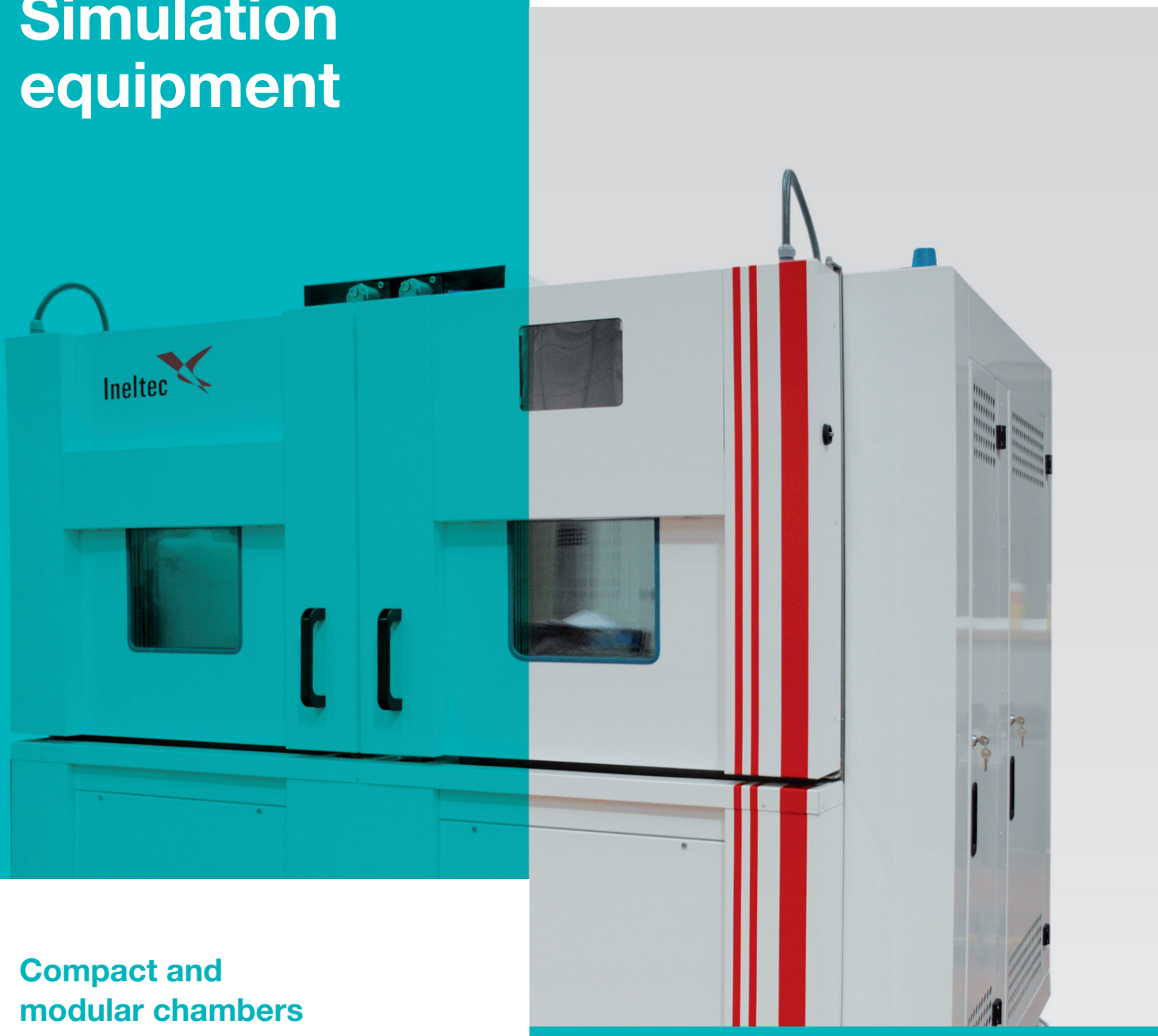
www.ineltec.es

Simulation equipment



Compact and modular chambers

Desktop, compact, modular, thermal shock, solar radiation, special equipment: vibration system, extreme low temperature, customized range of temperature... and air generator groups.

Ineltec

1988

Experts in the design and manufacturing of simulation and test equipment

Ineltec is a company with more than 30 years of experience in its sector with a big amount of equipment installed all around the world. The achievements are due to the ability of offering tailored made solutions to perform any kind of test.

Each one of the projects starts with a strong analysis of all the details so it can be provided a customized answer which is the most efficient and affordable solution.

It is a great pride for Ineltec that clients from all the industrial sectors consider them as experts on giving customized solutions and solving all the challenges no matter how complex they are.

Technology, research and innovation are the basis to create reliable and accurate equipment.

2018

Technology, research and innovation are the basis to create reliable and accurate equipment.

Desktop chamber

Description

Desktop chamber of INELTEC line product simulates environmental conditions of heat and cool and it can be added humidity conditions.

Temperature and Climatic Desktop Test Chambers are ideally suited to smaller test items and limited laboratory space.

The temperature range of standard models is from -20ºC to +180ºC.

Customized equipment design is according to the specifications given by the client. By this way, modifications or extensions can be applied in standard features. This kind of chambers is used in all industrial sectors since they meet the standard for environmental tests for any product or material.

Standards

DIN, ISO, ASTM, UNE, MIL, VDA, AENOR, STD, IEC, ICH, FDA

Standard performance

Temperature
-20ºC - +180ºC

R.H.
10% - 98%

Maximum thermal load at + 20ºC
1 Kw

Gradients according to IEC-60068-3-5
Cold. 2,7ºC min - Heat. 4ºC min

Noise level <65 dB
50, 100, 150

Other features under request

INSMCP Model
Electrical consumption **Dimensions**

Vol. Litres	Maximum consumed voltage (kW)	Calorific power (kW)	Internal dimensions HxWxD (mm)	External dimensions HxWxD (mm)	Approx. Weight (kg)
50	3	1	500x400x250	1150x700x925	100
100	4	1,5	500x500x400	1150x700x925	110
150	5	2	600x600x400	1400x800x925	130

Compact chamber

Description

Compact chambers are perfect for testing larger samples. The chamber simulates environmental conditions of heat and cool and it can be added humidity. The chambers are available in different volumes and ranges of temperature.

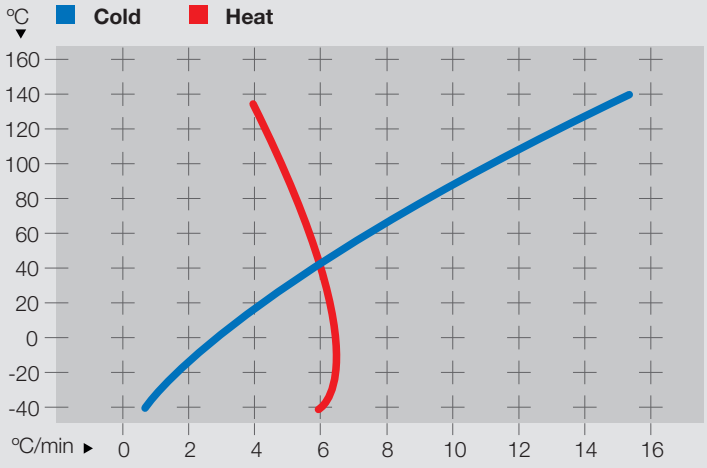
The temperature ranges are from -70ºC to +180ºC and volumes from 150L to 2000L.

Further options are available to enhance performance and meet specific customer requirements.

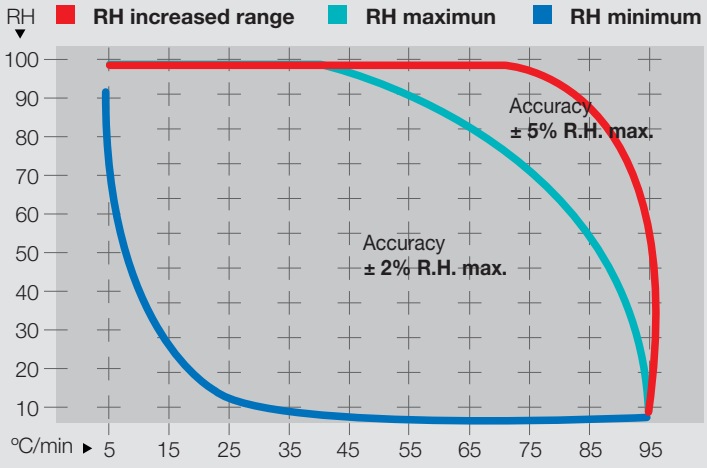
Standards

DIN, ISO, ASTM, UNE, MIL, VDA, AENOR, STD, IEC, ICH, FDA

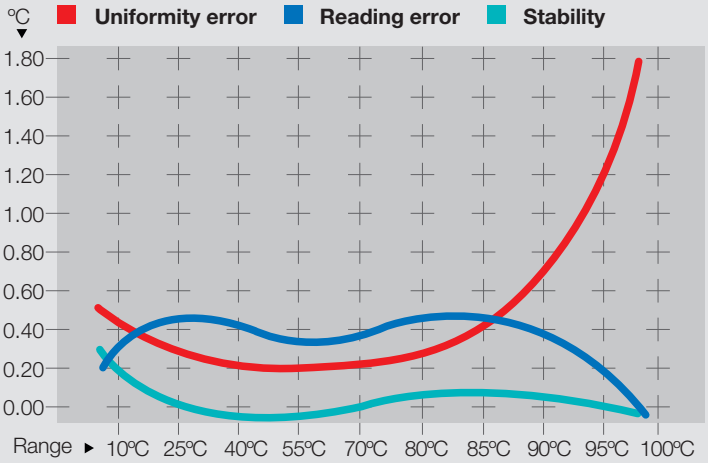
Gradients according to IEC-60068-3-5



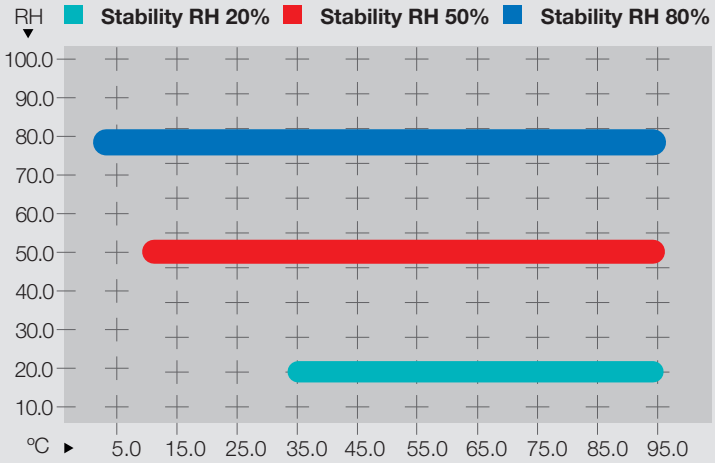
Working range R.H.

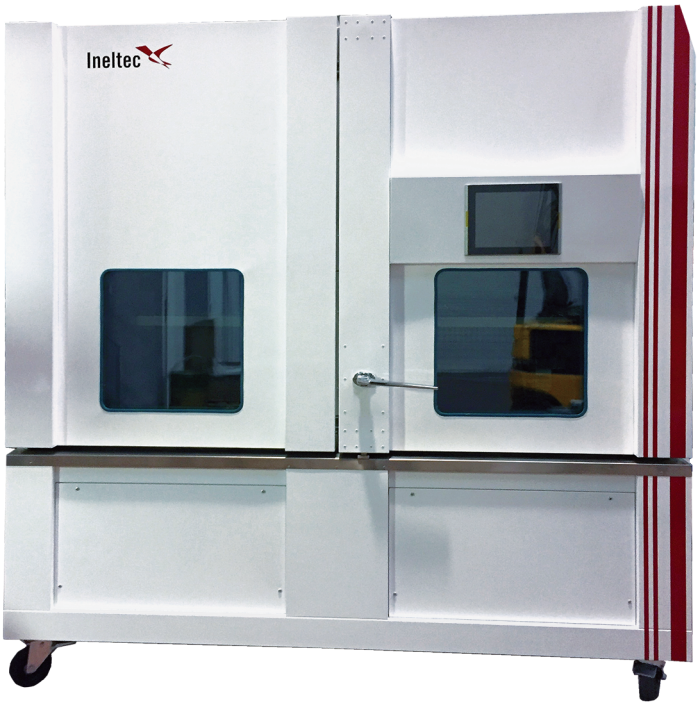


Temperature error



Stability R.H. / Tª





Standard functions

*Other features under request

Temperature
0ºC / -30ºC / -50ºC / -70ºC

R.H.
10% - 98%

Maximum thermal load at + 180ºC
150L 3 Kw / 300, 500L 4Kw / 750, 1000, 1500, 2000L 7Kw

Gradients according to IEC-60068-3-5
Cold 3,9ºC min - Heat 5,3ºC min

Gradients under request 10 / 15 / 20ºC

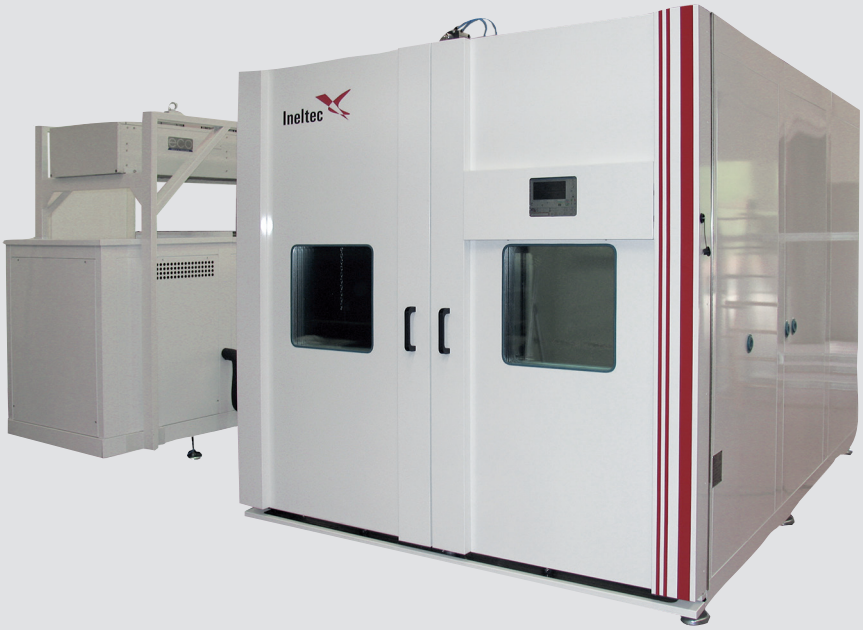
Noise level <65 dB

Volumes
150, 300, 500, 750, 1000, 1500, 2000L

INECC Model
Electrical consumption **Dimensions**

Vol. Litres	Maximum consumed voltage (kW)	Calorific power (kW)	R.H. power	External dimensions HxWxD (mm)	Internal dimensions HxWxD (mm)	Approx. Weight (kG)	Maximum thermal load at +20ºC
150	5	3	0,75	1800x800x1100/1400	600x500x500	250	5 kW
300	6	4,5	0,96	1900x1000x1500/1900	700x700x600	300	4 kW
500	7,5	6	1,5	2000x1100x1500/2000	800x800x800	500	4 kW
750	9	7,6	1,5	2200x1200x1700/2150	1000x900x850	600	7 kW
1000	10	9	1,5	2200x1300x1700/2300	1000x1000x1000	700	7 kW
1500	18	11,5	3,5	2200x1800x2500	100x1500x1000	900	7 kW
2000	20	14	3,5	2100x2600x1900	1000x2000x1000	1000	7 kW

Walk-in compact chambers



Lacquered in white

Internal stainless steel

Description

Walk-in temperature and climate test chambers are developed for large test specimens. They are of large volumes.

They are made of stainless steel to withstand a temperature range from -70ºC to +180ºC.

Standards

DIN, ISO, ASTM, UNE, MIL, VDA, AENOR, STD, IEC

Standard functions

Stability
Temp. ± 0,3ºC max. / R.H. ± 2% max.

Resolution
Temp. 0,1ºC / R.H. 0,1%

Accuracy
Temp. ± 0,5ºC max. / R.H. ± 2% max.

Homogeneity
Temp. ± 2ºC max. / R.H. ± 2% max.

Thermal shock test machine

Description

Thermal shock machines are designed for subjecting samples to alternating extremes of high and low temperatures in order to observe changes in the product's characteristics.

It can be made in **horizontal or vertical** format, or even including more compartments, according to the customer specifications.

The maximum temperature range in standard models is -60ºC and it can be reached +180ºC.

Standards

DIN, ISO, ASTM, UNE, MIL, VDA, AENOR, STD, IEC

Standard functions

Temperature
-40ºC - +200ºC / -60ºC - +200ºC

Transition time <10"

Movement of the platform:
Horizontal or Vertical

Noise level <55dB

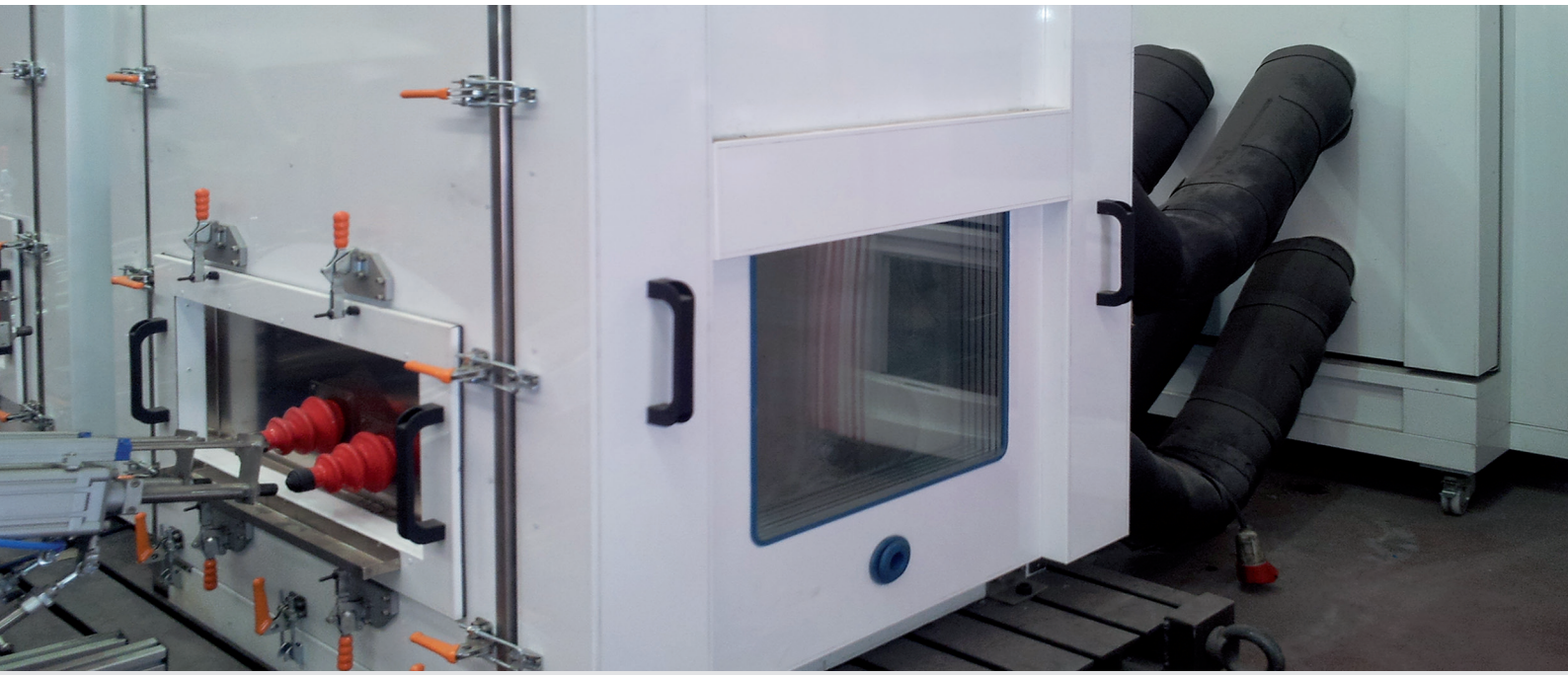
Volumes
16L, 64L, 166L, 200L

Other features under request

CCHT Model
Electrical consumption **Dimensions**

Vol. Litres	Maximum consumed voltage (kW)	Heat power (kW)	Testing platform HxWxD (mm)	External dimensions HxWxD (mm)	Approx. Weight (kg)
16	7,5	4	250x250x250	1800x1400x1000	450
64	15	7,5	400x400x400	1800x2400x1500	650
166	20	9	550x550x550	1800x2400x1500	800
200	20	12	600x600x600	1800x2800x1800	1200

Generator group



Description

Ineltec designs and manufactures several kinds of generator groups: climatic, thermal, pressure, liquid recirculation, etc. and according to the client specifications.

Standards

According to the standards:
PV 2005: 2000-09
According to IEC -60068-3-5
**Average of values without load

Functions

Temperature
Adjustable from -60ºC to +180ºC

Humidity
Adjustable from 20% to 95% R.H.

Hoses diameter
Between 120 and 160mm

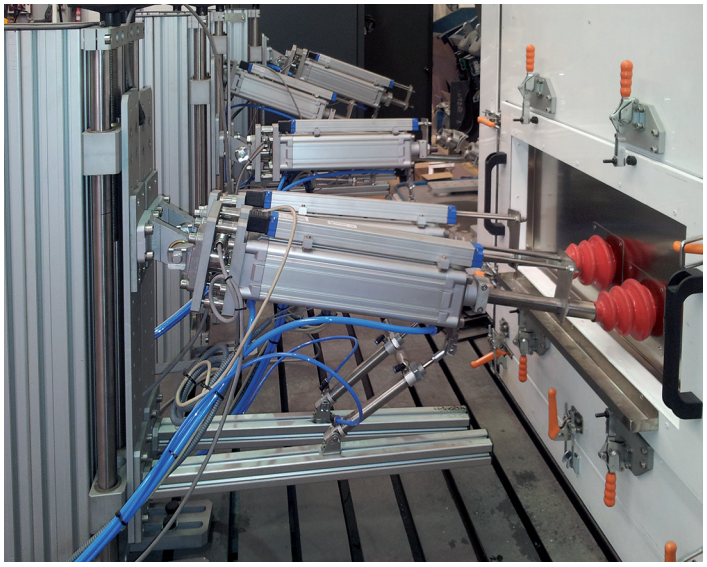
Other features under request

Model	Tª Range ºC	R.H.	Power Kw	Gradient ºK/min (1) (cold-heat)	Maximum volume of the chamber (L)
GC-0003	0 + 180	YES/NO	3	3	300
GC-0005	0 + 180	YES/NO	5	3	750
GC-0010	0 + 180	YES/NO	10	3	2000
GC-2003	-20 + 180	YES/NO	3	3	300
GC-2005	-20 + 180	YES/NO	5	3	750
GC-2010	-20 + 180	YES/NO	10	3	2000
GC-4003	-40 + 180	YES/NO	3	3	300
GC-4005	-40 + 180	YES/NO	5	3	750
GC-4010	-40 + 180	YES/NO	10	3	2000
GC-6003	-60 + 180	YES/NO	3	3	300
GC-6005	-60 + 180	YES/NO	5	3	750
GC-6010	-60 + 180	YES/NO	10	3	2000

Gradient for maximum gradients indicated, with less volume superior gradient

Generator Group 30 kW

Appliance of a Generator Group



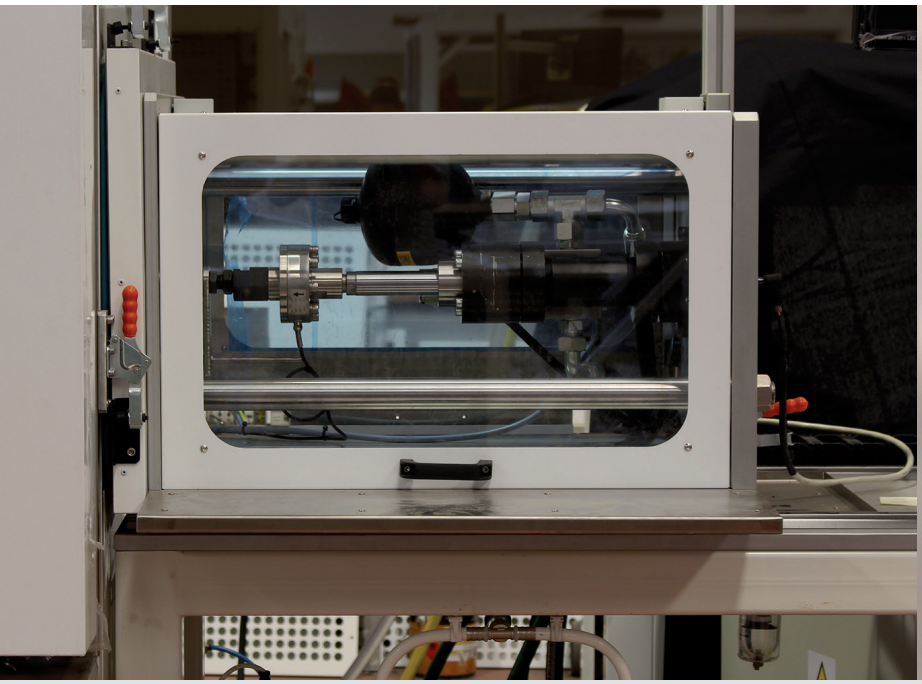
Generator Group 10 kW

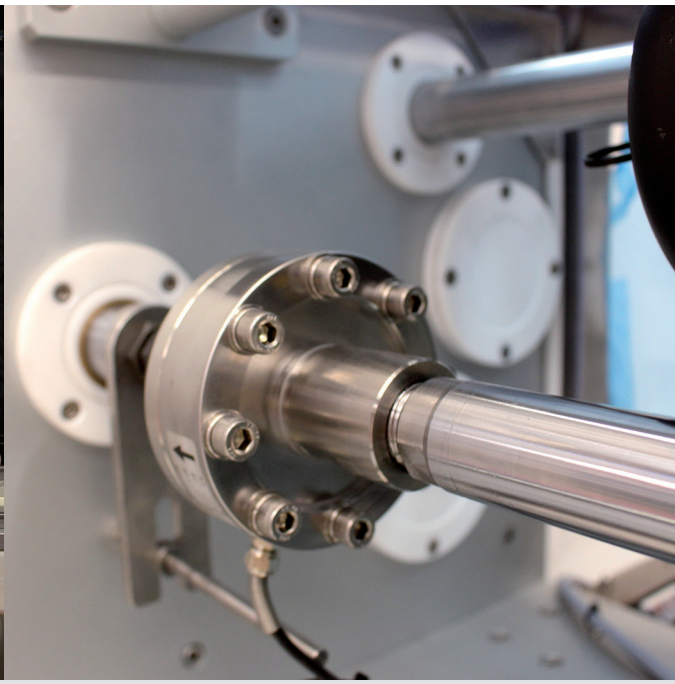
Typical application Generator Group

Generator Group 3 kW

Air Generator Group

Combined test





Description

Chamber specially designed for adapting it to testing benches – shakers, pulsating pressure, fatigue, sun radiation, mechanical, and burst-strength.

The control system allows acting in master or slave mode.

Sun radiation

The simulation of sunlight is to check the damage caused by different frequencies of solar rays. The reference applications are the accelerated aging of the equipment under the effects of the radiation combined with other environmental phenomena.

International standards

DIN 75220, ISO 4892-2, IEC 60068-2-5, EN 60068-2-5, CIE 20, ISO 11341, MIL-STD-810E mét.505.3

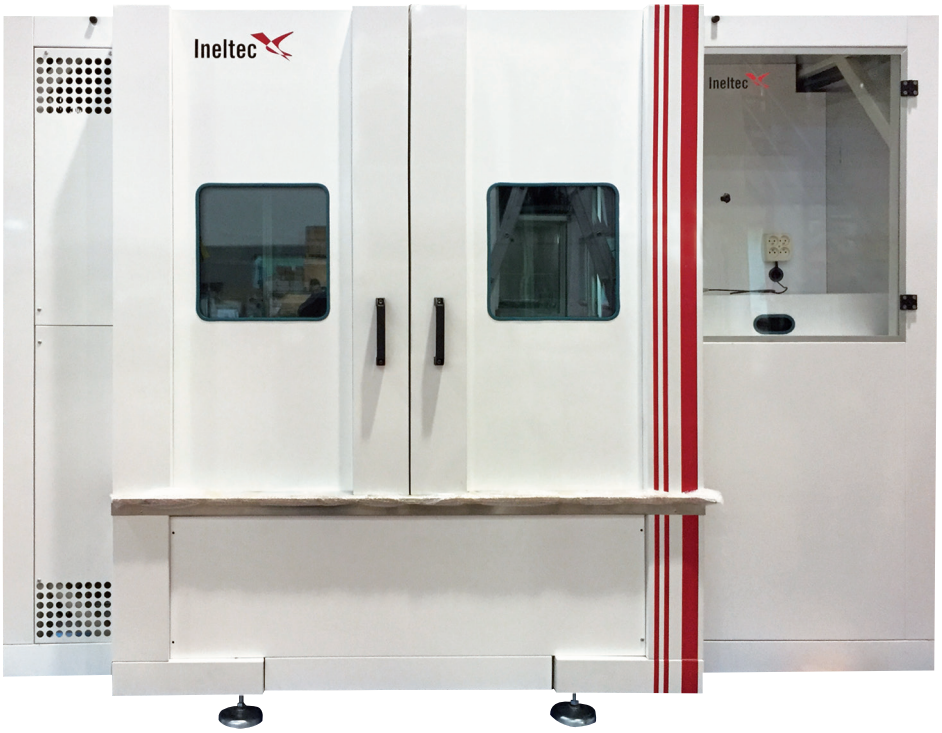
High power ultraviolet lamp. Adjustable power: 0-1280W/m2

Other features under request

Filter type	transmition range (nm)	Wave lenght range	Radiation range
A	From 315	UVA+VIS+IR	UVC 200 nm-280 nm UVB 280 nm-315 nm UVA 315 nm-400 nm VIS 400 nm-800 nm IR > 800 nm
B	From 295	UVB+UVA+VIS+IR	
Quartz	From 200	UVC+UVB+UVA+VIS+IR	

Climatic chamber with vibration and pulsating pressure - PVT

The chamber combines air or liquid pulsating pressure with other parameters as temperature or vibration. In case of liquid pulsating pressure, it can be oil, water, glycol, gasoil, petrol, kerosene, etc.



With vibration 1, 2, 3 axis (x-y-z)

A. Vibration system

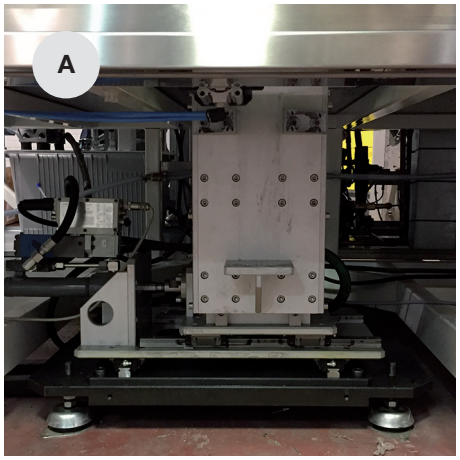
B. Hydraulic system of lineal vibration

The hydraulic system consists of a cylinder with position control by LVDT associated to a servo-valve and from the control unit, it is programmed the amplitude and frequency. The cylinder is connected to a hydraulic system.

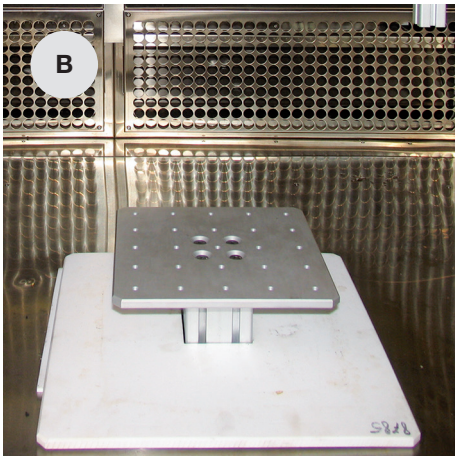
C. Electrical system of electromechanical vibration

The vibration system is installed on the right/left side below the chamber. It will be manufactured by the crank-rod system with mechanically adjust amplitude and with an electronically adjust frequency by an electronic converter, which is associated with a synchronous motor.

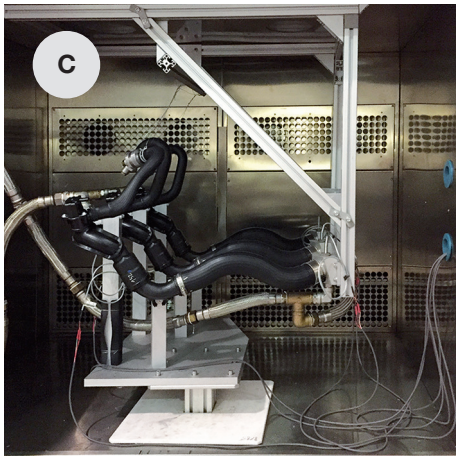
Hydraulic vibration group



Internal platform



Vibration and pulsating pressure for air vehicle tube



Air

Air	Pressure	Heat	Cold	Frequency	Wave shape	Oil dispenser
	0-10 bar	0-300gr/ºC	-50ºC	0-1Hz	Sinus Square Trapezoidal sections	Yes

Liquid

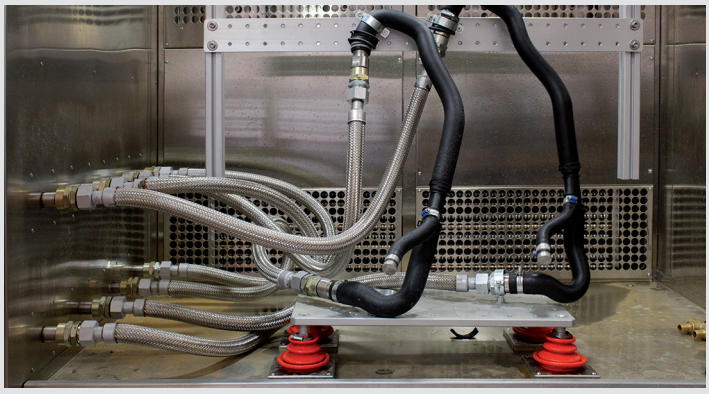
Liquid	Heat	Frequency	Wave shape	Oil dispenser
0-6 bar	-40ºC a 150ºC	0-1Hz	Sinus Square Trapezoidal sections	Yes
0-10 bar		0-1 Hz		
0-60 bar		0-10 Hz		
0-200 bar		0-10 Hz		
0-700 bar		0-10 Hz		
0-3000 bar		0-10 Hz		

All climatic chambers can include pulsating pressure with or without temperature control.

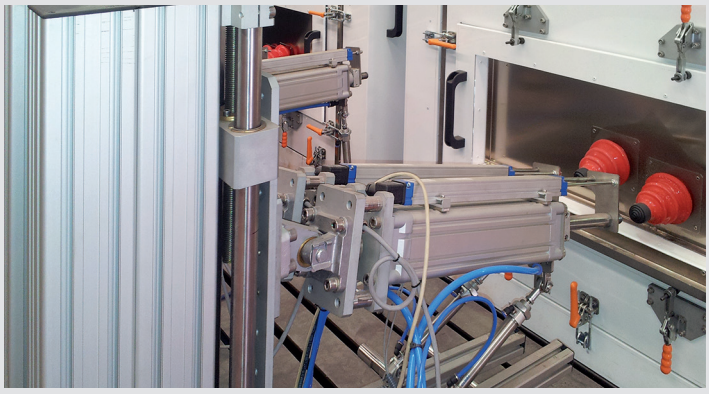
Vibration with an arm robot

To adapt a Shaker

Pulsating pressure and vibration



Climatic tests and fatigue



Special chambers

Description

Special chambers are designed according to the customer specifications to perform tests where different variables are combined simultaneously.

Different types of combined chamber: Pressure and temperature chamber, liquid/air pulsating pressure plus vibration and temperature, chambers combined with testing benches.

Cryogenic valve

Front acces with gloves

Aerospace

Thermal shock

Internal adaption of a testing bench

To control temperature, humidity and pressure

Special to adapt to a testing bench

Special with large volume

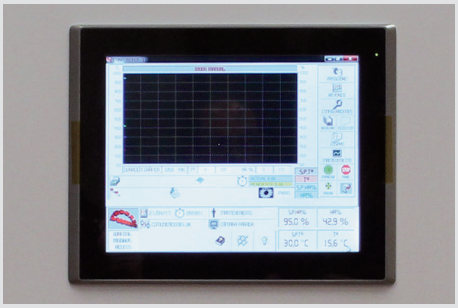
Standard characteristics

Control system

System based on a programmable automatic logic controller / PLC controlled by a touch screen PC

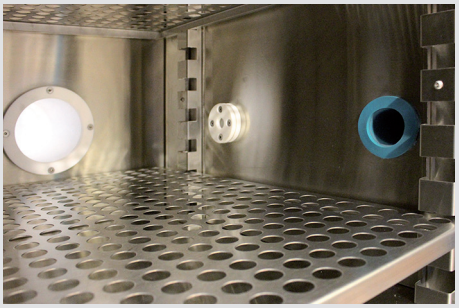
Software / characteristics

- Possibility of manual or automatic programming
- Test start schedule on specified day and time
- Allow annotations during the tests
- Different levels of access
- More than 100 programs
- Number of programming cycles of 1 to 999999 the infinite
- Visualization and recording of the tests made in graphic format or table
- Export to Excel or similar
- Configuration of minimum and maximum alarms, for limits of temperature and humidity in each section.
- Remote control via Ethernet, WIFI and WEB



Touch screen

It is easy and intuitive software which performs programming tasks, acquisition, records, control and analysis of the results.

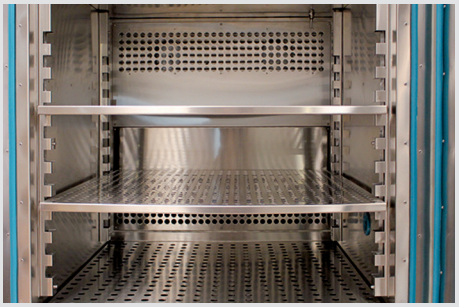


Access holes

The chambers have a standard access holes to introduce inside wiring or calibration sensors, but can be added more if required. Different sizes.

Observation windows

It is placed on the door to see the interior of the chamber. Security glasses.



Trays

2 sample holder trays manufactured of perforated sheet of stainless steel, adjustable in height. Max. weight 50 Kg.

Multibrand TS Service

- Phone
- E-mail
- Online telematic solution

Simulation equipment

Climatic Chambers

- Desktop
- Compact
- Modulars
- Thermal Shock
- Photostability test

Chambers for stability tests

- ICH and FDA Compact
- ICH and FDA Modulars

Calorimetric Chambers

Generator Groups

Corrosion

- Cyclic Corrosion
- Humidostatic
- Kesternich
- Salt spray

Tightness

- Dust
- Rain
- Wind - Water

Cabinets

- Freezers
- Thermostatic Baths

Chambers Frost - Defrost

- Chambers Frost - Defrost

Heaters and Furnaces

- Drying heaters
- Muffle Furnace

Testing benches

Fatigue - Endurance

- Fatigue - Endurance

Characterization

- Characterization

Pulsating Pressure

- Pulsating Pressure

Rupture and Bursting

- Rupture
- Bursting

Liquid Thermal Shock

- Liquid Thermal Shock

Specials

Resistance to the fire

Reaction to the fire

Measurement and control

Artificial Vision

- Selection and Control of pieces
- Robot/Bench for verifying the pieces

Finish Test

- End-of-line test

We appreciate your attention, and we are at your disposal further information.
Sincerely, Ineltec.

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