



Mobile Environmental Chamber

Environmental Simulation is an imitation for creating the artificial environmental changes to test the working of different systems and instruments under such conditions. Climatic chambers are instruments designed to perform tests, to verify the behaviours of any electronic or similar device in controlled temperature and relative humidity conditions.

Weiss Umwelttechnik GmbH, Germany is one of the most important producers of standard testing chambers and systems for environmental simulation worldwide. The product range comprises temperature and climate testing systems as well as test systems for simulated exposure to weather, temperature, shock, corrosion and for long time testing in various test chamber volumes. Walk-in / Drive-in chambers and process integrated plants for environmental simulation and biology are designed, produced and installed in accordance with customer specifications

Structural Solutions Private Limited is the authorized exclusive Indian representative of "Weiss Umwelttechnik GmbH". Structural Solutions Private Limited is a professional Engineering company engaged in offering high end technology intensive products and system solutions for the complete range of "Environmental Chamber".



Mobile Environmental Chamber

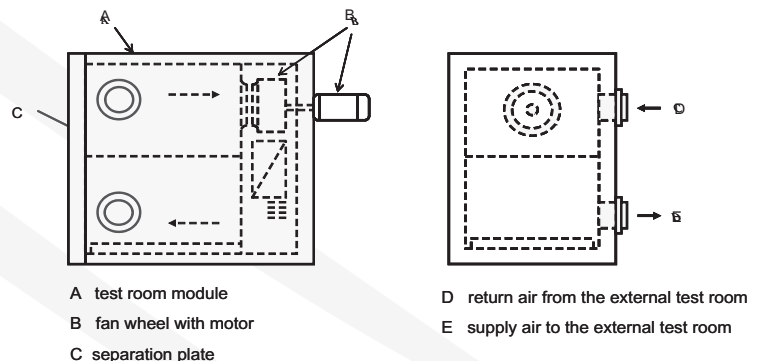
Environmental Test Chamber is used to determine the products ability to perform during or after exposure to a specific environment. These chambers are used to ensure the reliability of industrial products, especially electronic items, through prolonged exposure to one or more environmental parameters. Mobile Chamber in another innovative design developed by Weiss and stands as cost effective solution having applications in Automobile industry, Automobile supplier industry, Electronic Industry to name a few.

OPERATION MODE OF MOBILE CHAMBER :

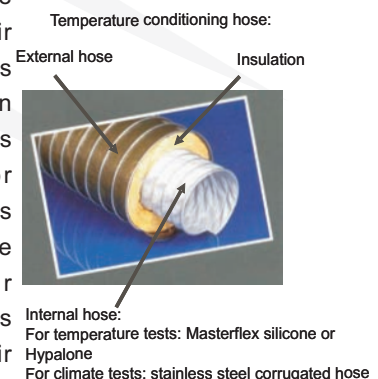
An air stream that is temperature or climate conditioned exactly to the entered set values flows continuously through the test space. Baffle plates on the floor and ceiling of the test space guarantee optimum distribution of the air and temperature throughout the test space. This circulating air then flows through a finned heat exchanger by which it can be cooled. A specially designed heat exchanger prevents undesired condensation from forming on its surface during climate operation and ensures maximum temperature and humidity constancy. An electrical heater installed in front of the heat exchanger in the direction of the airflow heats the circulating air. The air stream then passes over a water bath; integrated heating and cooling elements ensure that the water is tempered quickly and exactly. The humidity of the test space air adapts according to the water temperature.

Thus the testing conditions cold, heat and climate are created in the climatic chamber. With the use of partition, a powerful circulating air fan motor with radial blower creates a suction zone in the upper section of the test chamber and a pressure zone in the lower section of the chamber. This tempered air with defined temperature is thus routed via flexible tubes to the

separate test space. With the use of access ports which are integrated on the right side of the walls of the climatic chamber. During these tests the circulating air not required for this purpose, can be interrupted by electrical operated shut-off flaps. By dismantling the circulating air hoses, closing the ducts and removing the partition, the test chamber can also be used as a standard unit without separate test space.

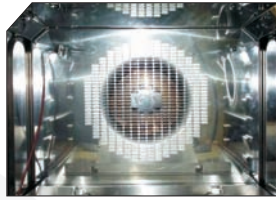


HOSE CONNECTIONS : The flexible wire for the connection of the air conditioning unit test space consists of an external hose, insulation and an internal hose. The internal hose is made of masterflex silicone or hypalone for temperature test or is made of stainless steel for climate tests. The dimensions for temperature conditioning hoses depending upon the volume of the air conditioning used is \varnothing 150 mm or 200 mm in the interior and 200 mm to 250 mm at the exterior.



FEATURES:

- The external test space is in Combination With series Chambers
- A pole changing fan motor is used for doubling of the fan speed.
- A radial fan is installed for increased circulating air volume and pressing.
- Separation plate in the test room for directed air flow
- Sockets for connection of supply and return air hoses with cover.
- A safety device is provided for test space door
- Water-cooled condenser is present.
- External test room contains an additional temperature sensor Pt100 and also a capacitive humidity sensor
- The operating mode can be controlled both via test room sensors and external test room sensors



THE SYSTEM DESIGN DEPENDS ON THE FOLLOWING FACTORS:

- Requested temperature range in the external test room
- Requested Temperature change rate in the external test room
- Dimensions and design of the external test room
- Specimens, heat emission in the external test room
- Length of conditioning hoses

TECHNICAL SPECIFICATION:

Type WK11-600/70-UKA

Test chamber

- Dimensions [mm], ca. Height 950
Width 800
Depth 800
- Temperature Range: -70 to +180 °C
- Constancy: ± 0.1 to ± 0.5 K (in time)
- Climate Temperature range: +10 to +95 °C
- Humidity range: 10 to 98 % r.h.
- Constancy: ± 3 % r.h.
- Dew point range: +4 to +94 °C

Separate test space

- Dimensions [mm], ca. Height 450/500
Width 1000/1500
Depth: 800
- Temperature Range: -50 to +160 °C
- Constancy: ± 0.5 to ± 1.0 K (in time)

Circulation

- Circulation quantity ca. 500 m³/h
- Hoses Inside diameter 150 mm

UNIT FOR THE TEMPERATURE CONDITIONING OF CIRCULATED AIR (UTA)

This unit is used for testing large-size specimens. A mobile test unit is obtained by just disassembling the machine unit. The system comprises a test chamber and unit for the temperature conditioning of circulated air (UTA) which can also be



used to temperature condition other test chambers. The test chamber and the UTA are connected via two air pipes which are either rigid or flexible. The line connections can easily be removed. The specimen is installed in the test chamber on a special test bed which is used for clamping the testing device. Due to its heavy weight the test bed is mounted on supports that run through the floor of the test space and are secured to a frame underneath the test space. The supports are heated to prevent icing. The testing assembly is temperature conditioned by the circulating air. The air is heated and/or cooled in the UTA and blown into the test chamber via large lines. Temperature-conditioned air flows into the test space via the upper opening; through the lower opening the air is suctioned out of the UTA.

APPLICATIONS:

- It controls environmental rooms for analytical purposes.
- It is used to ensure the reliability of industrial products, especially electronic items, through prolonged exposure to one or more environmental parameters.
- The failure of a component in a critical application (military) is avoided.
- Further improvement of the product is possible if it fails at the environmental test space.

Complete range of Temperature and Climate testing Systems, Test systems for simulated exposure to weather, Temperature, Shock, Corrosion, Walk-in /drive-in Chambers will be offered in Rupees or in Foreign Exchange at competitive prices by **Structural Solutions Private Limited**

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