

OZONE CLIMATIC TEST CHAMBER



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The **Ozone Test Chamber** or **Ozone Climatic Test Chambers** are often employed by industrial units and research organizations to study the effect of ozone exposure on the aesthetics and functional value of various products, including plastics, rubber, paint, fabrics, metals etc.

Ozone is a highly reactive and unstable form of oxygen that is present in small concentrations in both the stratosphere and the troposphere. It plays an important role in the atmosphere, resulting in both beneficial as well as detrimental effects on both living and non-living things. The stratospheric ozone protects the living beings and the environment from the harmful rays of sun, whereas the troposphere ozone or ground level ozone is highly toxic for living beings and is notorious for causing material damage and corrosion. The ground level ozone usually results due to the interaction between atmospheric pollutants and the sunlight, though a small amount is also contributed from the overlaying stratosphere. The concentration of ozone varies from one place to another and within the same environment from time to time. However, with an increase in population and rapid industrialization, the concentration of ozone has been gradually increasing over the past few years. This ozone, being a powerful oxidant, often leads to significant material damage, resulting in economic losses due to increased cost of production and maintenance.

We have wide range of **Ozone Test Chambers/Ozone Rubber Test Chambers**. Apart from our standard models we are also **Manufacturers of Customized Ozone Exposure Test Chambers** as per the specifications provided.

SALIENT FEATURES:

- Economical, energy efficient and versatile design
- High-tech insulation system
- Highly Reliable & Smooth Operation
- ASTM/ISO/ROHS/GB Certification
- Programmable PID microprocessor based operation
- Easy to clean and maintain
- Static and dynamic test setup

The **Ozone Climatic Test Chamber** or **Ozone Aging test Chambers** provide an effective solution to the testing of products for resistance against ozone degradation in a controlled environment. These Ozone Test Chambers function as **static tensile test chambers** as well as **Rubber Test Chamber** and are often used for studying static tensile deformation of various manufactured goods in the presence of ozone. The equipment works by exposing the test

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samples to uniform concentrations of ozone at constant temperatures and relative humidity in a sealed air environment. Under these conditions, the products undergo the process of corrosion which can be observed in the form of surface cracks and changes in other properties.

The **Ozone Climatic Test Chamber** are compact and easy to install equipment that are designed for economical and versatile applications. The equipment uses high quality construction materials such as imported hi-class stainless steel plates for the inner bladder and plastic coated A3 steel plates for the outer bladder of the test chamber for a sturdy and reliable construction. The equipment also features an inbuilt 360° rotating sample rack with multiple sample locations. The rotary working table uses an aluminum alloy table board for increased corrosion resistance. All the internal surfaces are made up of copper or stainless steel for smooth and easy to clean surfaces. The roof of the test chamber is also provided with balance exhaust holes that help in maintaining the concentration of air and ozone within the working area.

The **Ozone Test Chambers** are designed for both static and dynamic tests, with or without rotation. These self-contained units are frequently used for testing the **dynamic stretching of rubber** and are often used as **accelerated ageing test chambers for rubber**. They use PID microprocessor based SSR temperature controllers for programmable operation. The unit is also provided with chart recorders or data logger units for storage of the recorded data and features PC connectivity for easy access to the stored data. The equipment uses an UV adsorption analyzer for measurement of the ozone concentration within the chamber. The **Rubber Tensile Test Chambers** also come equipped with efficient heaters and humidifiers, circulation fans and other additional devices for increased versatility.

The **Ozone Climatic/Exposure Test Chambers** are designed according to international standards and bear ASTM/ISO/ROHS/GB certifications. Their advanced and efficient design, high quality and safety standards and good simulation performance makes them a preferred choice for accelerated ageing studies and product quality control in quality control units and research and development organizations.

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CONSTRUCTION DETAILS :

HMI+ PLC IN ONE UNIT:



Hapten provides better automatic controls for the chamber by integrating HMI and PLC together. This special feature is compelling alternative to traditional methods and provides a simplified, reduced cost control system architecture. It works by following operating steps:

- Sensors measure the physical quantity like temperature and convert them to electrical signal
- The actuation device acts upon that electrical signal
- At HMI interface between operator and chamber occurs.
- The machine operates with the logic design controls controlled by software.
- This signal is sent to the chamber by logic control devices and the chamber operates.

Basic features of HMI+PLC:

- **Processor of 1.6 GHz:** High clock speed processing PLC that enables speed up processing to the functions. With 1.6GHz processing speed, the PLC system is capable of multitasking, processing of large data volume, and high performance.
- **Audio Output Alarm:** Audio alarm alert in case of failures in any of the component controlling functions.
- **256 MB of RAM:** PLC of 256 Mega Byte memory for running programs offers high memory space for installing of more programs
- **COM Port:** Com port provided for attaching RS 235/RS 485 cable.



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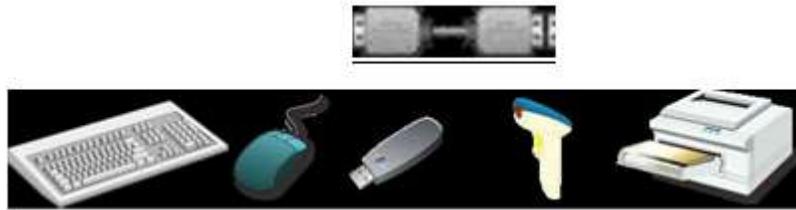
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- **USB Ports:** A USB port provided for transferring data through communication between HMI and PLC. Various peripherals can be connected via USB hub.



- **Coloured Touch Panel:** We provide coloured touch panel screen available in 2 sizes -7 inches and 10inches, displaying all the control features, digital clock, sensor layouts, data and values, graphics and pictures, navigations etc.
- **RS232 or RS485 Interface:** Serial interface provided to get connectivity with internet, mobile and other data transmission. Single device to device interface and a communication bus that is used to form simple networks of multiple devices are available through RS485 interface. RS485 interface supports transmission speed of 2400, 4800, 9600, 19200, 38400 bits per second.
- **Touch Screen Size of 7 Inches and 10 Inches:** HMI screen available in 2 sizes- 7inches and 10inches, as per user's requirement. Screen displays the control features, images, data values and other programs.
- **Chamber Body:** Double walled cabinet with inner chamber made up of Stainless steel of grade SS 304 and outer wall of heavy gauge Mild steel sheet that is degreased and pretreated with primers for rust proofing.

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TECHNICAL SPECIFICATIONS:

MODEL	HB-OZNC01	HB-OZNC02	HB-OZNC03	HB-OZNC04
Test Space Dimension (W X D X H)(cm)	45x45x50	50x60x75	70x80x90	100x100x100
Temperature Range	0°C to 70°C			
Temperature Controller	HMI+PLC			
Humidity Range	≥65% RH			
Ozone Density	50~1000ppm			
Testing Machine	Testing machine Ozone generator or UV absorption method			
Power Requirements	220/230V, 50/60Hz			

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