

Cabinet Xenon Test Chamber

Test Principle

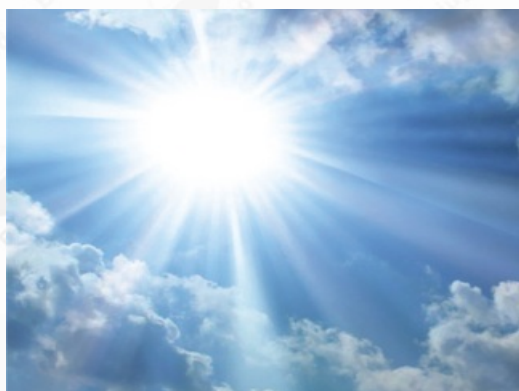
Artificial weathering of coatings or exposure of coatings to filtered xenon-arc radiation is carried out in order to obtain the degree of change in a selected property after a certain radiant exposure H, and/or the radiant exposure which is required to produce a certain degree of ageing. The properties selected for monitoring should preferably be those which are important for the practical use of the coatings. The properties of the coatings exposed are compared with those of unexposed coating prepared from the same coating materials at the same time and in the same way (control specimens) or with those of coatings exposed at the same time whose behavior during testing in exposure apparatus is already known (reference specimens).

Xenon lamp is full of xenon, and would send out light because of xenon discharge. The energy distribution of spectrum through this way is very close to sunshine, and its color temperature is near 6,000K. Furthermore, xenon lamp has a stable character, its spectrum energy distribution wouldn't change at all within the limited lifetime, this is because its spectrum distribution among continuous spectrum part don't have any relation to input power of lamp. As a special light source, xenon lamp has a good consistency for electric parameters, and it is easy to light, once light on, it can output a steady light energy at once. Furthermore, during working, the electric parameter won't be influenced by any external conditions.

Xenon Lamp light can emulate the effect of sunshine, while water spray system can emulate the effects of rain and dew. During the test, radiation energy and temperature are controllable. A typical test cycle generally carries out under strong irradiation of Xenon light and periodic precipitation. These tests generally applied in the fields of paint and coatings, automotive industry, plastic, wood, glue, etc.

BGD series Xenon Light Accelerated Aging Test Chambers (hereinafter referred as B-SUN) use Xenon lamps as artificial light source, and can modify the full spectrum sun light. Controlling the temperature, humidity. Its inner temperature and humidity can be properly controlled to obtain the periodic precipitation on the sample for fully evaluating the damaged factor caused by sunlight, moisture and temperature (materials aging phenomenon includes fading, disluster, intensity reduction, cracking, flaking, chalking, and oxidation).

Based on sample holder type, B-SUNS are divided into flatbed type and rotating drum type.



Simulated Sun with full spectrum



Simulated Rainfall

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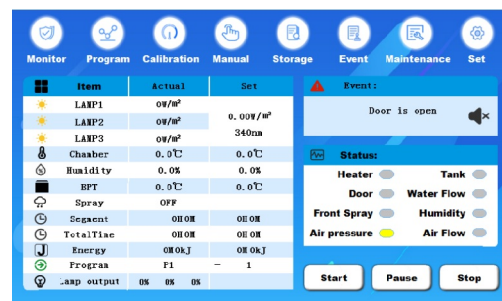
BThis is a powerful xenon arc aging test chamber ideally suited for 3D sample testing. It features three genuine U.S.-imported xenon lamps with daylight filters, fully meeting various international testing standards.

The **BGD 867 Cabinet Xenon Test chamber** can accommodate 25 standard test panels, equipped with both spray function and relative humidity control inside the working chamber.

Operators can freely set all required test parameters (irradiance energy, exposure time, black panel temperature, spray duration, relative humidity of working-room, etc.) through the human-machine interface, while monitoring the machine's operating status in real time. All operational parameters during testing can be directly downloaded to a computer via USB interface.

Characters

- ◆ Three xenon lamps imported from America can offer higher irradiance energy, meet with all test standards' requirements.
- ◆ Can set and control automatically the relative humidity of working room.
- ◆ The test procedures can be programmed freely; and up to 6 predetermined procedures can be saved in one time. Every procedure includes up to 10 segments setting data.
- ◆ Can set the cumulative energy (total irradiance energy) obtained by sample to finish a test procedure.
- ◆ With front spray function, can set spray time and spray interval time.
- ◆ Irradiance energy can be accurately controlled. The "Closed-Loop" control system can automatically compensate the change of light intensity caused by ageing or other factors.
- ◆ Users can easily calibrate and adjust the irradiance or the black panel temperature by themselves.
- ◆ With high precision Pt100 temperature sensor. Black panel temperature is auto-controlled during the whole process.
- ◆ Alarm function for protection: Over-temperature of BPT or BST, big irradiance difference, auto shut-down protection when opening door, spraying water shortage, big error of humidity, large deviation of working room temperature, air pressure protection of lamp cooling air.
- ◆ Touch screen and user-friendly operation interface allow operator to set the test parameters and monitor all the test process easily.
- ◆ Specimen mounting and evaluation is fast and easy with unique slide-out specimen tray.
- ◆ Real-time data can be collected and recorded. The incidental USB connector allows users to copy the test data into a USB drive, achieving unattended operation.



Operation Menu



Flat tray is suitable for 3D or special-shape samples

Main Technical Parameters:

- ★ Xenon Lamp: Three 1.8 kW xenon lamps (imported from America)
- ★ Filter: Daylight filter (Also can choose extended UV filter or window glass filter)
- ★ Lamp Lifetime: Near 1,500 hours
- ★ Exposure Area: 2,800 cm² (can put 25 pcs samples of 150mm × 70mm size)
- ★ Adjustable Irradiance Range: 0.3 ~ 0.75 W/m² (@340nm)
- 0.5 ~ 1.35 W/m² (@420nm)
- 30 W/m² ~ 90 W/m² (@ 300nm ~ 400nm)
- 310 W/m² ~ 780 W/m² (@ 300nm ~ 800nm)
- ★ Controlling irradiance point: 340nm or 420nm or 300nm ~ 400nm or 300nm ~ 800nm
- ★ Adjustable BPT and BST Range: RT+20°C ~ 100°C
- ★ Adjustable relative humidity of working room: 10% ~ 75% (Light) ;
- 10% ~ 95% (Dark) ;
- ★ Interior Material of Chamber: Aluminum profiles
- ★ Exterior Material of Chamber: Powder coating
- ★ Overall Size: 950mm × 1200mm × 2000mm
- ★ Net Weight: 385KG
- ★ Power Supply: Three-phase AC 380V 50 or 60HZ; Max. Current 32A Rated Power: 7.5kW
- ★ Requirements of Compressed air: Clean, oilless compressed air with 0.5MPa pressure, Max. air supply is near 60L/min. Average air consumption is 10L/min ~ 30L/min (Depends on testing standard)

★ Ordering Information:

- BGD 867----Cabinet Xenon Test Chamber
- BGD 866/W-026----Air-cooled Xenon Lamps from USA (1.8 KW)
- BGD 866/Z-010---- Air-cooled Xenon Lamps from China (1.8 KW)
- BGD 8170----Pure Water Machine (50L/h)
- BGD 867/W-080----Daylight Filter
- BGD 867/W-010----Window Glass Filter
- BGD 867/W-082----Extended UV Filter
- BGD 8140/S----Multifunctional Irradiance Radiometer for Xenon lamps (340nm)
- BGD 8141/S----Multifunctional Irradiance Radiometer for Xenon lamps (420nm)
- BGD 8142/S----Multifunctional Irradiance Radiometer for Xenon lamps (300nm~400nm)
- BGD 8143/S----Multifunctional Irradiance Radiometer for Xenon lamps (300nm~800nm)



Xenon Calibration Radiometer



BGD 8170 Purity Water Machine