

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

Cabinet Xenon Test Chamber

BGD 867 is a standard xenon chamber which has many functions. It is equipped with three xenon lamps imported from America and can choose daylight filter, window glass filter or extended UV filter, which can meet with all standards' requirements.

BGD 867 can hold 25 pieces samples, not only has spray function, but also can control the relative humidity of working room. Operator can set all required test parameters (Irradiance, test time, BPT etc) through the touch screen, and can check its running status at any time. All running parameters can be exported to computer through the 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.



BGD 8170 Purity Water Machine

Test Standards

ISO 12040 《Graphic Technology - Prints and Printing Inks - Assessment of Light Fastness Using Filtered Xenon Arc Light

ISO 16474-2 《Paints and varnishes -- Methods of exposure to laboratory light sources -- Part 2: Xenon-arc lamps》

ASTM D3451 《Standard Guide for Testing Coating Powders and Powder Coatings》

ASTM D4303 《Standard Test Methods for Lightfastness of Pigments Used in Artists' Paints》

ASTM D6577 《Standard Guide for Testing Industrial Protective Coatings》

ASTM D6695 《Standard Practice for Xenon-Arc Exposures of Paint and Related Coatings》

ASTM G151 《Standard Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources》

ASTM G155 《Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials》

ISO 4892-1 《Plastics Methods of Exposure to Laboratory Light Sources Part 1: General guidance》

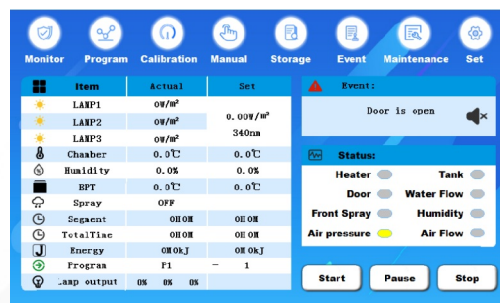
ISO 4892-2 《Plastics - Methods of Exposure to Laboratory Light Sources - Part 2: Xenon-arc lamps》

SAE J2412 《Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Xenon-Arc Apparatus》

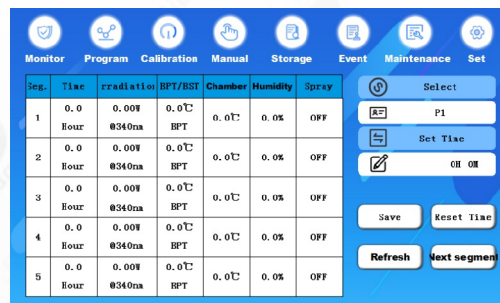
SAE J2527 《Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Xenon-Arc Apparatus》

Main Technical Parameters:

- ★ Xenon Lamp: Three 1.8kW 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 standard samples 150mm × 70mm)
- ★ Adjustable Irradiance Range:
 - 30 W/m² ~ 90 W/m² (@ 300nm ~ 400nm)
 - or 0.3 W/m² ~ 0.75 W/m² (@ 340nm)
 - or 0.5 W/m² ~ 1.35 W/m² (@ 420nm)
 - or 310 W/m² ~ 780 W/m² (@ 300nm ~ 800nm)
- ★ Controlling irradiance point: 340nm or 420nm or 300nm ~ 400nm
- ★ Adjustable Black Panel Temperature Range: RT ~ 90°C
- ★ Adjustable relative humidity of working room: 10% ~ 75% (Light) ;
10% ~ 95% (Dark) ;
- ★ Interior Material of Chamber: Aluminium profiles
- ★ Exterior Material of Chamber: Powder coating
- ★ Overall Size (W × D × H,mm) : 950 × 1200 × 2000
- ★ Net Weight: 385kg
- ★ Power Supply: Three-phase AC 380V, 50 or 60Hz; Max. Current 32 A
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 8156---American Xenon Lamps (1.8 kW)
 - BGD 8183---Daylight Filter
 - BGD 8184---Window Glass Filter
 - BGD 8185---Extended UV Filter
 - BGD 8140/S---Multifunctional Xenon Lamp Irradiance Radiometer (340nm)
 - BGD 8141/S---Multifunctional Xenon Lamp Irradiance Radiometer (420nm)
 - BGD 8142/S---Multifunctional Xenon Lamp Irradiance Radiometer (300nm~400nm)
 - BGD 8170---Pure Water Machine (50L/h)



Operation Menu



Test Program Window



Xenon Calibration Radiometer