

Xenon Test Chamber (New)

Test Principle

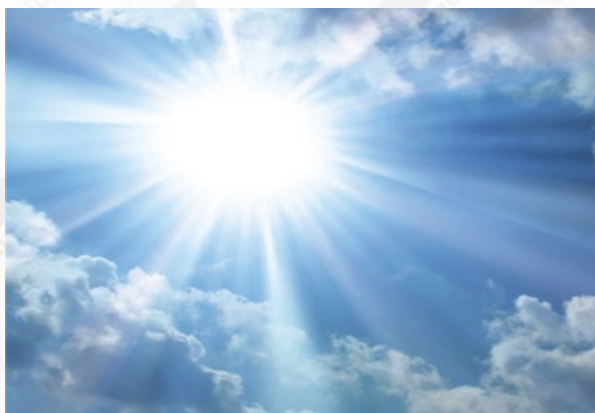
Artificial weathering of coatings or exposure of coatings to filtered xenon-arc radiation is carried out in order to obtain the degree of change in a selected property after a certain radiant exposure H, and/or the radiant exposure which is required to produce a certain degree of ageing. The properties 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

BGD 860 is a powerful, highly cost-effective, easy to use and convenient to maintain xenon test chamber. It uses an imported air-cooled xenon lamp and relevant daylight filter, to simulate more real and much better the full spectrum sun light of outdoor, ensure the test results obtained from laboratory have a perfect correlation with outdoor application. Furthermore, the samples holder is designed with a special rotating drum to ensure each sample can obtain the same and uniform irradiance during the whole test.

BGD 860 Xenon Test Chamber can meet with all standards requirements from different fields, it can hold 22 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, BST etc) through the touch screen, and can check its running status at any time. All running parameters can be exported to computer directly through the USB interface.

Standards

ISO 11341 《Paints and varnishes-Artificial weathering and exposure to artificial radiation--Exposure to filtered xenon-arc radiation》

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

ISO 16474-1 《Paints and varnishes -- Methods of exposure to laboratory light sources -- Part 1: General guidance》

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 D3794 《Standard Guide for Testing Coil Coatings》

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

ASTM D5010 《Standard Guide for Testing Printing Inks and Related Materials》

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》



Operation Menu



BGD 8170 Purity Water Machine

Characters

- ◆ Xenon lamps imported from America can ensure the test results have a good repeatability and comparability.
- ◆ Special rotating-drum design for samples holder ensure each sample can obtain the same and uniform irradiance during the whole test.
- ◆ 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.

- ◆ Can choose narrow band (at 340nm or at 420nm) or broad band (from 300nm~400nm or from 300nm~800nm) to control irradiance.
- ◆ Affordable air-cooled xenon lamp, the lifetime can reach 1,500 hours.
- ◆ Can choose three different filters (Daylight, Window glass, Extended UV) to meet different test requirements.
- ◆ The test procedures can be programmed freely; can set 10 programs and save 6 predetermined programs in one time. Every program includes up to 10 segments for setting parameters.
- ◆ Can set and control precisely and automatically the relative humidity of working room.
- ◆ Can set the cumulative energy (total irradiance energy) obtained by sample to finish a test procedure.
- ◆ With spray function, can set spray time and spray interval time.
- ◆ Users can easily calibrate and adjust the irradiance or the black panel temperature by themselves.
- ◆ With High precision Pt100 Temperature sensor. BPT (black panel temperature), BST (black standard temperature) and working room temperature can be set and controlled precisely and automatically during the whole process
- ◆ Alarm and protection function: Over temperature (BPT, BST, Working room), big deviation of irradiance, shortage of spraying water, abnormal lamp power, big error of humidity.
- ◆ Touch screen and user-friendly operation interface allow operator to set the test parameters and monitor all the test process easily.
- ◆ Real-time data can be collected and recorded. The incidental USB connector allow users to copy the test data into a USB drive, achieving unattended operation.

Main Technical Parameters:

- ★ Xenon Lamp: One 1.8KW xenon lamp (imported from America)
- ★ Filter: Daylight filter (Also can choose extended UV filter or window glass filter)
- ★ Lamp Lifetime: Near 1,500 hours
- ★ Exposure Area: 2,200 cm² (can put 22 pcs samples of 150mm x 70mm size)
- ★ Adjustable Irradiance Range:
0.3 ~ 0.75 W/m² (Single point of control: 340nm)
0.5 ~ 1.35 W/m² (Single point of control: 420nm)
30 W/m² ~ 90 W/m² (Full spectrum : from 300 ~ 400nm)
310 W/m² ~ 780 W/m² (Full spectrum : from 300 ~ 800nm)
- ★ Controlling irradiance point: 340nm or 420nm or 300nm ~ 400nm or 300nm ~ 800nm
- ★ Adjustable Black Panel Temperature Range: RT ~ 100°C
- ★ Adjustable Working room Temperature Range: RT ~ 65°C
- ★ Adjustable relative humidity of working room: 10% ~ 75% (Light); 10% ~ 95% (Dark);
- ★ Overall Size: 860mm x 800mm x 1770mm
- ★ Net Weight: 200KG
- ★ Power Supply: AC 380V (Three-phase four-wire system) / 50HZ; Max. Current 16 A
- ★ Max. Total Machine Power: 5.5 kW
- ★ 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 860---Xenon Test Chamber
BGD 8150---American Xenon Lamps (1.8kW)
BGD 8170---Pure Water Machine (50L/h)
BGD 8179---Air Compression System (Includes air compressor, air reservoir, freezing dryer, precise filter etc)
BGD 8183---Daylight Filter
BGD 8184---Window Glass Filter
BGD 8185---Extended UV filter



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