SONACME
Environmental Test Chambers

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SONACME
Environmental Test Chambers

Accelerated Aging Test Chambers

SUN-Series

www.sonacme.com

Xenon Aging Test

Repeated cycles of sunlight, heat and water to simulate the ageing forces experienced by the material in the environment in which it is used.
The xenon test chambers developed and produced by Sonacme Technology can realize a wide range of test conditions to meet the aging test needs of materials including plastics, coatings, sealants, textiles, photovoltaics and other materials.

Aging Force

The main "aging forces" simulated in the xenon test chambers aging test are sunlight, temperature and water. Xenon arc lamps reproduce the full spectrum of sunlight to obtain spectra with different energy distributions. Heat is provided in the form of high temperature and/or temperature cycling to generate thermal shock. In addition to controlling relative humidity, it can also simulate humid environments in the form of sprays.

Selection of Test Cycles

There is a wide range of international and manufacturer xenon test standards to choose, making choosing the "right" one a challenge. Reference to standards committees in ISO and ASTM will help you choose the test that is right for your application. Sonacme Technology's xenon test chambers can meet a variety of test standards, from simple, historically important test cycles such as ISO 4892-2 to test standards designed to better simulate real-world environments, such as ASTM D7869 .

Practical Considerations for Xenon Testing

When properly performed, xenon testing can generate valuable data on the relative performance of materials and products. To take full advantage of these experimental data, testing, calibration, and maintenance of onboard sensors is critical. This includes irradiance, temperature and relative humidity sensors. Although Sonacme Technology's filter will not age, but the lamp will age. If the lamps are not replaced, even with proper calibration, the lamps will emit less UV light over time. and requires high-purity water to avoid sample spotting and chamber degradation.

Accelerated Testing

Accelerated testing is one of the main advantages of laboratory aging testing, and refers to the effect of increasing the aging test factor (such as irradiance or heat) to reduce the time required for testing. However, aging degradation has many complex physical and chemical interactions that usually require limited experimental accelerations to be observed.

Baseline Data Available For Outdoor Exposure

The degradation of the material depends on the usage environment. Tropical environments like Florida are demanding on materials due to high temperatures, abundant sunlight and high humidity; desert environments like Arizona have higher temperatures and sunlight levels but much less moisture. Combining accelerated testing in outdoor exposure laboratories at selected locations helps build a database for comparative analysis and ensures that your product will be used in the most demanding service environments.

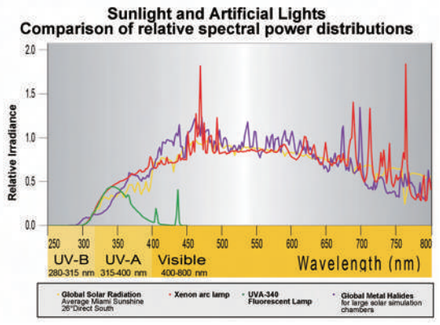
Standard

Sonacme Technology Xenon Test Chamber can perform almost all major international standards, national standards and industry test standards, including ISO, ASTM, IEC and GB test standards. To meet specific test capabilities, it depends on the model and configuration of the equipment. A partial list is provided below:

- ISO 4892 [Plastics - Laboratory Light Exposure Method]
- ISO 11341 [Paints and Varnishes - Artificial Aging and Exposure to Filter Radiation Exposure from Xenon Lamps]
- ISO 12040 [Printing technology - Prints and printing inks - Evaluation of lightfastness with filtered xenon arc lamps]
- ISO 16474-1 [Paints and Varnishes - Laboratory Light Exposure Test Methods]
- ISO 16474-2 [Paints and varnishes - Methods of exposure to laboratory light sources - Part 2 - Xenon arc lamps]
- ASTM G151 [Overview of Exposure to Non-Metallic Materials]
- STM G155 [Xenon arc test equipment for exposure of non-metallic materials]
- SAEJ 2527 [Performance standard for accelerated irradiation of automotive exterior materials by xenon arc lamp radiators]
- SAEJ 2412 [Accelerating Aging of Automotive Interior Components with a Controlled Irradiance Xenon Arc Device]
- PV 1303 [Light irradiation of automotive interior space structural parts]

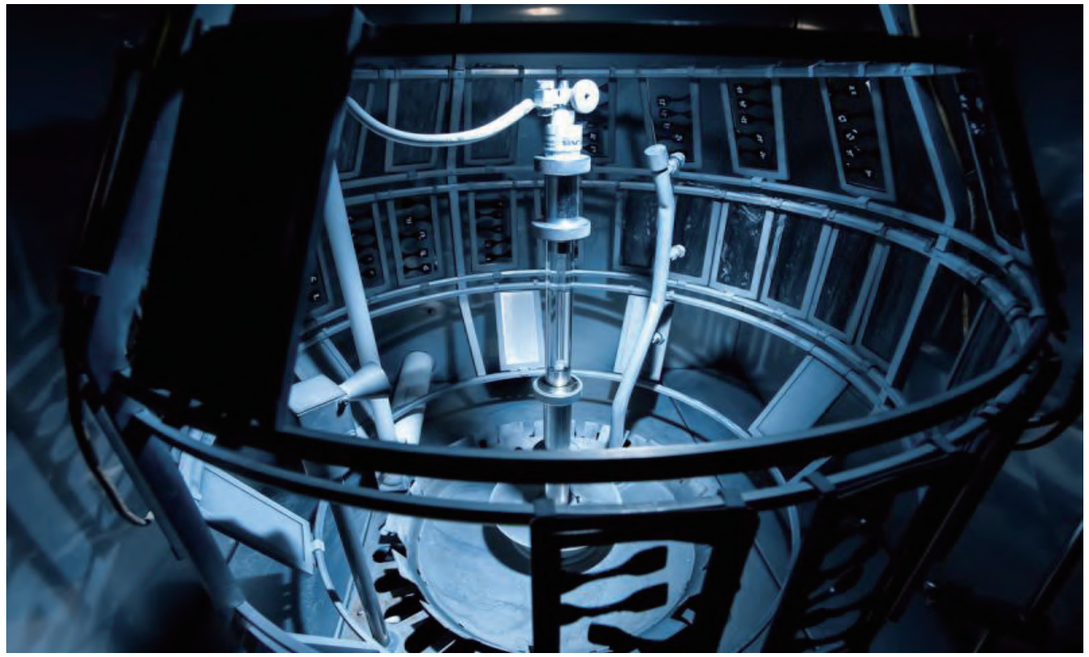
Sunlight Simulation

The xenon arc lamp of Sonacme Technology's xenon lamp test chambers can most realistically reproduce the full spectrum of sunlight, including ultraviolet, visible and infrared. Testing of many materials requires exposure to the full spectrum to provide an accurate simulation, especially in color fastness testing and light fastness testing.



Full Spectrum Xenon Lamps

Sonacme Technology's xenon lamp test chamber provides imported and domestic lamps for customers to choose from, which significantly reduces operation and maintenance costs. Replacing lamps is quick and easy without affecting sample testing. To replace the lamp, simply unplug, loosen a set screw, and slide out the lampshade.



long-term Filter

Xenon arc light sources must be properly filtered to obtain the spectrum for specific needs. Differences in spectra can affect the rate and type of sample aging. The test chamber is optional with three types of filters, which can simulate various usage environments of the sample. Filter selection depends on the specific application and test method.

Daylight Filter

Daylight filters are used to simulate direct sunlight outdoors. It correlates best with most outdoor applications. Materials normally used outdoors, such as roofing or outdoor coatings, should be tested with a daylight filter.

Window Glass Filter

The window glass filter simulates the transmission of sunlight through window glass. The spectrum can also simulate some indoor lighting, such as typical commercial or office lighting conditions. Window glass filters are used to test interior materials such as printed materials or textiles.

UV Extension Filter

Extended UV filters allow passage of UV light below the normal cut-off point of natural sunlight. This filter is used to provide faster and harsher test conditions. Extended UV filters are specified for some automotive and aerospace tests.

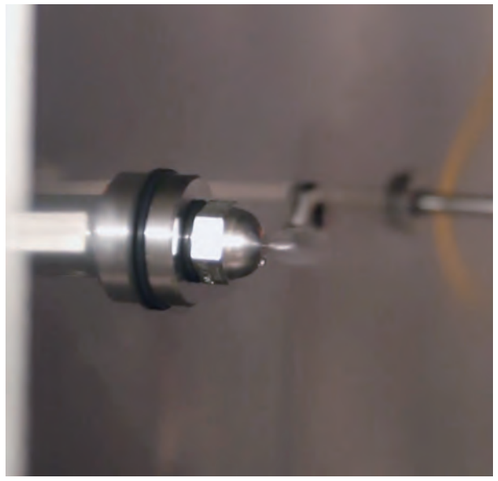
Light Irradiance Control System

The irradiance control system of Sonacme Technology's xenon lamp aging test chamber can accurately control the light intensity. Allows the operator to set the light intensity and automatically monitor and maintain the light intensity. The light intensity monitoring point can be selected from 340nm, 420nm or 313nm, 280-800nm.

Temperature/Humidity Simulation

Moisture

Moisture such as water spray, condensation and humidity are key to testing many materials. With the exception of the SX/1000, which does not offer a spray function, all other models offer standard relative humidity control.



Water Spray

The damaging effects of outdoor moisture erosion are simulated by direct pure water spraying. Programmable to spray during light and dark cycles, it can be used to generate thermal shock or physical stress damage.

Excellent Environment Simulation

During and after the spray cycle, a large amount of spray water is left on the sample surface for a considerable period of time. This fully simulates many products (like car surface coatings and zero conditions).

Temperature

Temperature control is important because it affects the rate at which materials age. The exposure temperature of samples in SONACME Technology's xenon lamp aging test chamber can be precisely controlled by the black panel / blackstandard thermometer temperature sensor.

Black Panel/Blackstandard Thermometer Temperature

A black panel/black scale thermometer is used to control the temperature in the test chamber. Since its black coating uniformly absorbs all wavelengths of light, it can be used to characterize the maximum temperature of the specimen in the test chamber. The temperature of the black panel can be set according to the irradiance level, the ambient temperature of the lamp usage time, the type of the black panel temperature sensor and the specific test chamber model.
Between 25°C and 120°C. Two temperature sensors are available: insulated or non-insulated temperature sensors (black scale or black panel thermometers).

Air Temperature Inside The Chambers

In SX/2200/H and SX/6500/H, the air temperature in the chamber can also be controlled simultaneously with the black panel temperature, so as to achieve full control of the sample test temperature. And this low-cost, replaceable temperature and humidity sensor also monitors and controls relative humidity. In the SX/1000 and SX/1000/H test chambers, only one of the air temperature control in the chamber or the black panel temperature control can be selected.

Low Temperature Applications

For some indoor products, such as pharmaceuticals and cosmetics, lower test temperatures are necessary in order to avoid unnatural aging in accelerated tests. This kind of test needs can choose a refrigerator.

SX Xenon Aging Test Chamber List

Order Information Technical Specifications	SX/1000 Benchtop Xenon Test Chamber	SX/1000/H Small Xenon Test Chamber	SX/2800/H Xenon Test Chamber	SX/2200/H Xenon Test Chamber	SX/6500/H Large Xenon Test Chamber	STX/1000/H Xenon Test chamber	SWTX/3600/H Walk-in Xenon Test Chamber
Light Tube	1 x 1.8KW air-cooled xenon lamp imported from the United States or 1 x 1.8KW domestic xenon lamp (optional)		3 x 1.8KW air-cooled xenon lamps imported from America	1 x 1.8KW air-cooled xenon lamp imported from Amercia	1x6.5KW water-cooled xenon lamp imported from America	3 x 1.8KW air-cooled xenon lamps	6 x 1.8KW air-cooled xenon lamps
Standard Filter	UV Extension Filter	UV Extension Filter	Daylight Filter	Daylight Filter	Daylight Filter	Daylight Filter	Daylight Filter
Exposure Standard Sample(150 x 70mm)	9	9	25	22	65	-	-
Programming Cycle	9	Exist (6)	Exist (10)	Exist (10)	Exist (15)	Exist	Exist
Spray Function	None	Exist (The front of the Test Panel)	Exist (The front of the Test Panel)	Exist(Front & Back of Test Panel)	Exist(Front & Back of Test Panel)	Exist	Exist
Dark Function	None	Exist	Exist	Exist	Exist	Exist	Exist
Black Panel Temperature (BPT) Automatic Control	Exist	Exist	Exist	Exist	Exist	Exist	Exist
Black Panel Temperature Setting Range	Chamber Temperature +30℃~90℃	Chamber Temperature +30℃~90℃	Chamber Temperature +20℃~90℃	Chamber Temperature +30℃~100℃	Chamber Temperature +20℃~110℃	Chamber Temperature +20℃~110℃	Chamber Temperature +20℃~110℃
Irradiance Automatic Control	Exist	Exist	Exist	Exist	Exist	Exist	Exist
Irradiance Setting Range（340nm）	0.3 ~ 0.8W/m² (Domestic lamp) 0.3 ~ 0.8W/m² (imported lamp)		0.3 ~ 0.75W/m²	0.3 ~ 0.75W/m²	0.25 ~ 1.26W/m²	0.3 ~ 0.75W/m²	0.3 ~ 0.75W/m²
Irradiance Control Point	1	3	4	4	4	Multiple	Multiple
Monitoring the cumulative energy of irradiation	None	Exist	Exist	Exist	Exist	Exist	Exist
Operation Room relative humidity automatic control	None	None	Exist	Exist	Exist	Exist	Exist
Test Data Download Function	Exist	Exist	Exist	Exist	Exist	Exist	Exist
Alarm Function	Exist	Exist	Exist	Exist	Exist	Exist	Exist
Calibration Function	Exist	Exist	Exist	Exist	Exist	Exist	Exist
Pure Water System	None	Optional	Optional	Optional	Optional	Optional	Optional

Bench-top Xenon Test Chamber

The xenon test chamber is an important R&D and quality control tool for materials testing, which can be used to test products exposed to direct sunlight outdoors, sunlight through window glass, or indoor lighting environments.

Parameter

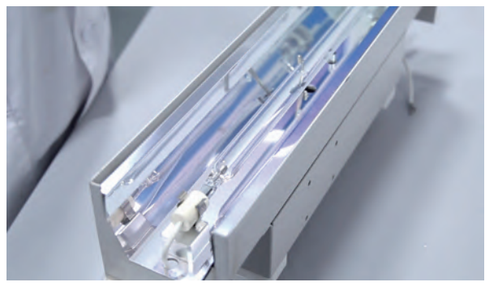
Model	SX/1000
Light Source	1.8kW original imported air-cooled xenon lamp or 1.8KW domestic xenon lamp
Filter	UV extension filter (also available as daylight filter or window glass filter)
Effective Exposure Area	1000cm² (9 samples of 150mm×70mm can be put in at one time)
Lamp Rated Life	1500h
Irradiance Setting Range	30W/m²～100W/m² (300nm～400nm)
Irradiance Monitoring Method	340nm or 420nm or 300nm～400nm (Choose one before ordering)
Black Panel Temperature Setting Range	Chamber Temperature+20℃～90℃ (According to the use of ambient temperature and irradiance setting value is different)
Inner/Outer Chamber Material	All stainless steel plate 304/spray
External Dimensions	950mm×570mm×540mm (length x width x height)
Power Supply	220V, 50 or 60HZ (pick one of two)
Maximum current and power	12A-2.5KW (Equipped with imported lamps) /25A-3.5KW (Equipped with domestic lamps)

Ordering Information

- SX/1000---Bench-top XenonTest Chamber (Domestic Lamp)
- SX/18---1.8 KW Xenon Lamp (Domestic)
- SX/340---Xenon lamp irradiance calibration meter (340nm)
- SX/300---Xenon lamp irradiance calibration meter (300nm-400nm)
- SX/1000/A---Bench-top Xenon Test Chamber (Imported Lamp)
- SX/18/A---1.8 KW Xenon Lamp (Original from USA)
- SX/420---Xenon lamp irradiance calibration meter (420nm)

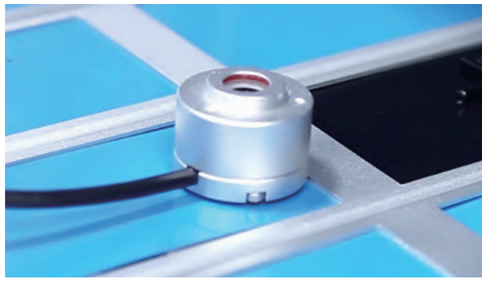
Standard Xenon Light Source

The xenon light source in line with international standards simulates the full spectrum of sunlight more realistically and better, and the stable light source ensures the comparability and reproducibility of test data.



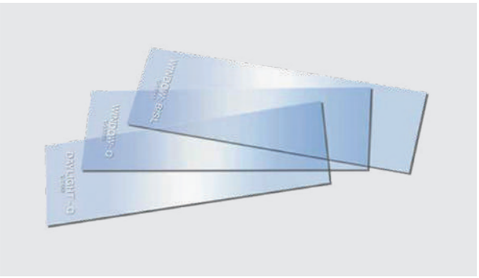
Irradiation Energy Automatic Control

Fully automatic control of irradiation energy (using a closed-loop control system is more accurate and stable), which can automatically compensate for changes in irradiation energy caused by lamp aging and any other reasons, with a wide controllable range.



Various optical filters are available

A variety of optical filters can be selected, which meet many domestic and foreign test standards. A UV extension filter is standard, but a daylight filter or window glass filter is also available.



Easy to Operate Touch Screen

The operator can arbitrarily set various parameters (irradiation energy, irradiation time, blackboard temperature, etc.) required for the test through the man-machine interface, and can check the running status of the machine at any time.

Humanized Design Sample Holder

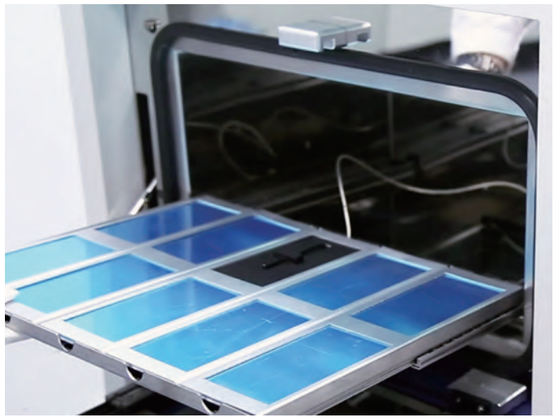
The user-friendly slide-out tray design is convenient for experimenters to install and evaluate samples. Equipped with a high-precision Pt 100 black panel temperature sensor, the whole process of black panel temperature is automatically controlled.

Internal Alarm Function

Black panel over temperature, large irradiance error, door shutdown protection, low wind pressure protection.

Small Xenon Test Chamber

Compared with the Benchtop Xenon Test Chambers, this Aging Chamber adds a spray function to simulate the effect of rain or other moisture when the material is actually used outdoors. At the same time, it can also monitor the test process. The total radiant energy value obtained by the sample controls the interruption of the test.



Parameter

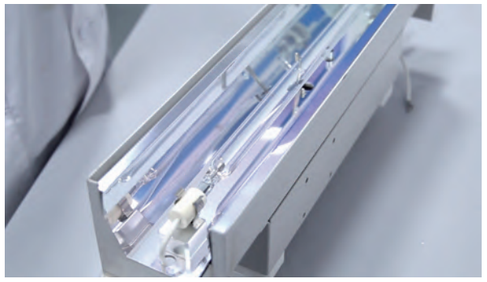
Model	SX/1000/H
Light Source	1.8kW original imported air-cooled xenon lamp or 1.8KW domestic xenon lamp
Lamp Rated Life	1500h
Filter	UV extension filter (also available as daylight filter or window glass filter)
Effective Exposure Area	1000cm² (9 samples of 150mm×70mm can be put in at one time)
Irradiance Monitoring Method	340nm、 420nm and 300nm～400nm (show at the same time)
Irradiance Setting Range	30W/m²～100W/m² (300nm～400nm) or 0.3 W/m²～0.8 W/m² (@ 340nm) or 0.5 W/m²～1.5 W/m² (@ 420nm)
Irradiance Monitoring Method	340nm or 420nm or 300nm～400nm (choose one before ordering)
Black Panel Temperature Setting Range	Chamber Temperature+30℃～90℃
Inner/Outer Chamber Material	All stainless steel plate 304/spray
External Dimensions	1000mm×650mm×1020 mm (length x width x height)
Power Supply	220V，50 or 60HZ (pick one of two)
Maximum current and power	12A-2.5KW (Equipped with imported lamps) /25A-3.5KW (Equipped with domestic lamps)

Ordering Information

- SX/1000/H---Xenon Test Chamber (Domestic Lamp)
- SX/18---1.8 KW Xenon Lamp (Domestic)
- SX/340---Xenon lamp irradiance calibration meter (340nm)
- SX/300---Xenon lamp irradiance calibration meter (300nm-400nm)
- SX/1000/H/A--- Xenon Test Chamber (Imported Lamp)
- SX/18/A---1.8 KW Xenon Lamp (Original from USA)
- SX/420---Xenon lamp irradiance calibration meter (420nm)

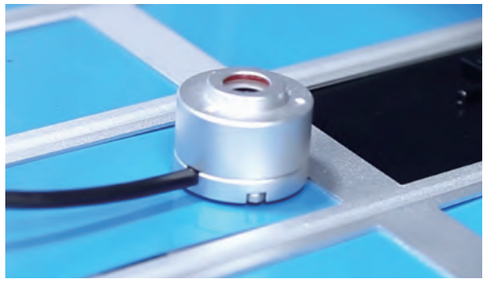
Standard Xenon Light Source

The xenon light source in line with international standards simulates the full spectrum of sunlight more realistically and better, and the stable light source ensures the comparability and reproducibility of test data.



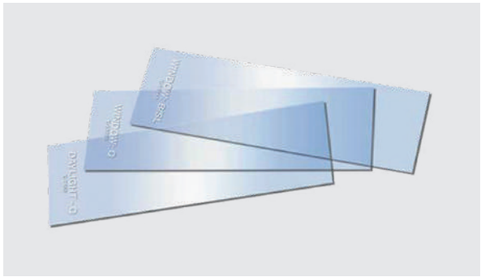
Irradiation Energy Automatic Control

Fully automatic control of irradiation energy (using a closed-loop control system is more accurate and stable), which can automatically compensate for changes in irradiation energy caused by lamp aging and any other reasons, with a wide controllable range.



Various optical filters are available

A variety of optical filters can be selected, which meet many domestic and foreign test standards. A UV extension filter is standard, but a daylight filter or window glass filter is also available.



A Variety of Test Procedures Can Be Set Arbitrarily

The test program can be arbitrarily programmed and stored 6 user preset programs, each program can be set with 10 segments of data.

Humanized Design Sample Holder

The user-friendly slide-out tray design is convenient for experimenters to install and evaluate samples. Equipped with a high-precision Pt 100 black panel temperature sensor, the whole process of black panel temperature is automatically controlled.

Simulate Wet Conditions

With spray function, spray time and spray interval can be set.

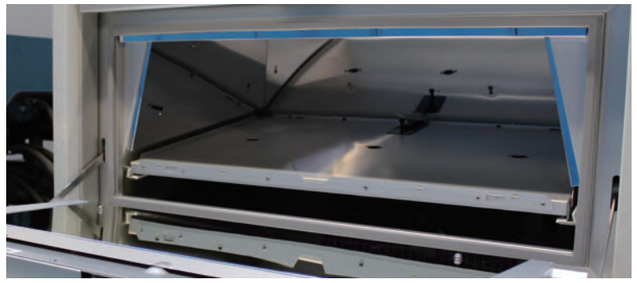
Xenon Test Chamber-SX/2800/H

This is a powerful xenon test chamber. It adopts three original xenon lamp tubes and daylight filters imported from the United States, which can fully meet the requirements of various domestic and foreign test standards.

The flat-panel xenon test chambers can accommodate 25 standard samples, not only has the function of spraying, but also can control the relative humidity in the operation room.

Exposure Area 2800cm²

Effective Exposure Area: 2800cm²;
25 samples of 150mm×70mm can be put in at one time, which ensures more efficient testing while increasing the number of samples to save costs.

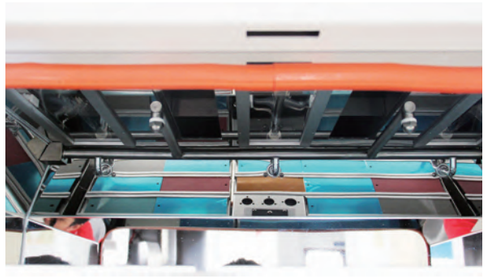


Irradiance Can Be Adjusted By Itself

The user can calibrate the irradiance by himself. With the irradiance meter, the user only needs to input the value read from the calibrator, and then click OK to automatically complete the entire calibration process.

More Radiant Lamps

Three 1.8KW xenon lamps imported from the United States provide higher intensity radiation, more realistic simulation of the full spectrum of sunlight, stable light source to ensure the comparability and reproducibility of test data.



Remote Control

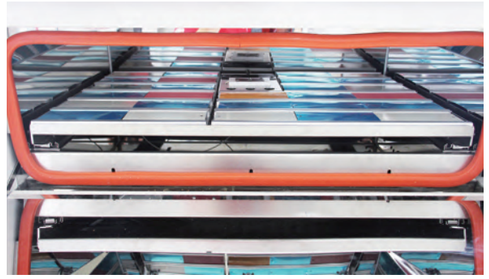
Standard TCP/IP Ethernet interface, users can remotely monitor the running status of the machine through the network, even if they are not in the laboratory, users can operate the aging chamber.

Easy to Operate Touch Screen

The operator can arbitrarily set various parameters required for the test through the man-machine interface, and can check the running status of the machine at any time.

Flat Pattern Rack

Covering a wide range of industries and it is suitable for samples of various shapes and sizes. The finished product of the sample can be directly put into the aging chamber for testing.



High Precision Sensor

Using high-precision Pt 100 black Panel temperature sensor and black scale temperature sensor, the temperature of the sample room/ the black panel temperature, is automatically controlled in the whole process
(chamber temperature +30℃～100℃).

Data is Saved in Real Time

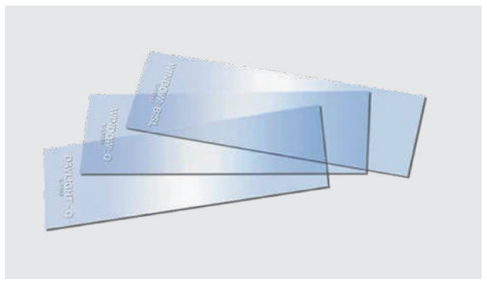
The test data is automatically recorded and saved in EXCEL format, and can be exported through U disk.

A variety of Test Procedures Can be Set Arbitrarily

9 test programs can be freely programmed and 6 international standard preset programs can be stored, each program can be set with 10 segments of data.

Three Filters

Three kinds of filters are optional to meet different test needs.



Simulate Rainfall Outside

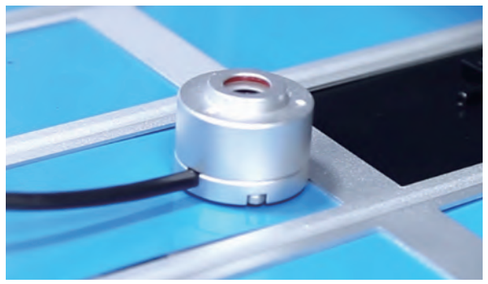
Water spray can better simulate end-use environmental conditions. The chamber is equipped with a spray port, the spray is evenly distributed, and effectively simulates a variety of test environments.

Alarm Protection Function

The irradiance error is large, the black panel or black scale is overheated, the spray is short of water, the lamp power is abnormal, the humidity error is large, and the chamber is overheated.

Precise Control of Irradiance

The irradiance control target can be selected from 340nm or 420nm or from 300nm to 400nm or from 300nm to 800nm.



Parameter

Model	SX/2800/H
Light Source	Three 1.8KW air-cooled xenon lamps imported from the United States
Lamp Rated Life	The normal service life is about 3000 hours
Filter	Daylight filter (window glass filter or UV extension filter also available)
Effective Exposure Area	2800cm^2 (25 samples of 150mm×70mm can be put in at one time)
Irradiance Monitoring Method	340nm or 420nm or 300nm～400nm (show at the same time)
Irradiance Setting Range	30W/m^2～90W/m^2 (300nm～400nm) or 0.3 W/m^2～0.75 W/m^2 (@ 340nm) or 0.5 W/m^2～1.35 W/m^2 (@ 420nm)
Black Panel Temperature Setting Range	Chamber Temperature+20℃～90℃
Operation Room Relative Humidity Control Range	30%～75% (when irradiated) ; 50%～95% (During spray or dark cycle)
Inner/Outer Chamber Material	All stainless steel plate 304/spray
External Dimensions	970mm×920mm×1850mm (length x width x height)
Power Supply	Three-phase AC 380V, 50 or 60HZ; maximum current 12 A (optional single-phase 220V, maximum current 36A)
The maximum power of the whole machine	6 KW

Ordering Information

- SX/2800/H--Xenon Test Chamber
- SX/340--Xenon lamp irradiance calibration meter (340nm)
- SX/300--Xenon lamp irradiance calibration meter (300nm-400nm)
- SX/18/A--1.8 KW xenon lamp tube (imported from the United States)
- SX/420--Xenon lamp irradiance calibration meter (420nm)
- SX/2800/H/W50--Pure water system (50L/h; optional)

Xenon Test Chamber-SX/2200/H

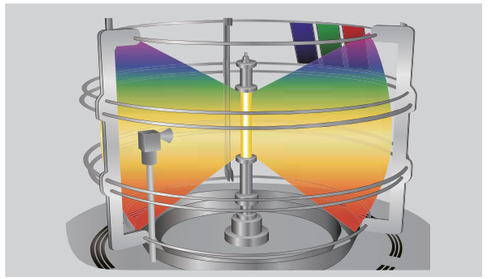
The xenon arc test chamber is equipped with a rotating sample holder. It is often used for weathering and lightfastness testing of textiles.
The effective exposure area is 2200cm^2 (11 sample racks can hold 22 samples of 150×70mm).
Equipped with air-cooled lamps, the cost is lower, the efficiency is higher, and the maintenance is more convenient than water-cooled lamps.
The utility model belongs to a multifunctional test chamber, and is a rotary drum shaped type xenon test chamber with simple structure, reliable quality and convenient use.

Model Rack Rotary Drum Shaped Design

The sample rack is designed with a special drum shaped structure and can rotate automatically to ensure that all samples get the same irradiation energy during the whole test process.
11 sample racks, can hold 22 samples of 150×70mm.

Irradiation Energy Automatic Control

The fully closed-loop irradiance control system is adopted, which can automatically compensate for changes in irradiation energy caused by lamp aging and any other reasons, with a wide controllable range.



Newly Upgraded Inner Chamber

The all-stainless steel interlayer liner design will avoid rust and leak, and at the same time effectively prevent the water vapor in the working room from penetrating into the electrical part and damaging the electronic components.

Remote Control

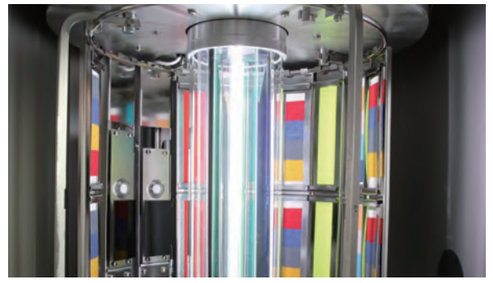
Standard TCP/IP Ethernet interface, users can remotely monitor the running status of the machine through the network, even if they are not in the laboratory, users can operate the aging chamber.

Easy to Operate Touch Screen

The operator can arbitrarily set various parameters required for the test through the man-machine interface, and can check the running status of the machine at any time.

Low Cost of Use of Lamps

The xenon lamp adopts the lamp imported from America, which is cost-effective and has a service life of up to 1500 hours. The indicators meet various international standards.



High Precision Sensor

Using high-precision Pt 100 black panel temperature sensor and blackstandard thermometer temperature sensor, the temperature of the sample room, that is, the black panel temperature, is automatically controlled in the whole process (chamber temperature +30℃～100℃).

Data is Saved in Real Time

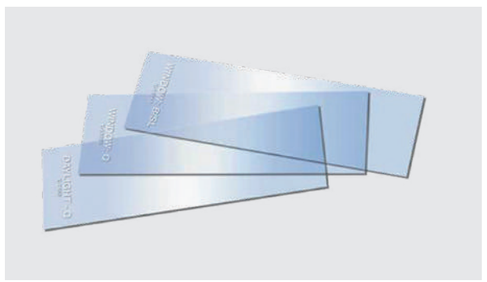
The test data is automatically recorded and saved in EXCEL format, and can be exported through U disk.

A variety of Test Procedures Can be Set Arbitrarily

9 test programs can be freely programmed and 6 international standard preset programs can be stored, each program can be set with 10 segments of data.

Three Filters

Three kinds of filters are optional to meet different test needs.



Add Viewable Window

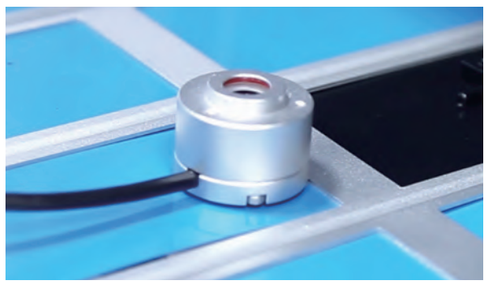
It is convenient for the test personnel to detect and observe the test situation.

Alarm Protection Function

The irradiance error is large, the black panel or black scale is overheated, the spray is short of water, the lamp power is abnormal, the humidity error is large, and the chamber is overheated.

Precise Control of Irradiance

The irradiance control target can be selected from 340nm or 420nm or from 300nm to 400nm or from 300nm to 800nm.



Parameter

Model	SX/2200/H
Light Source	A 1.8KW air-cooled xenon lamp imported from the United States
Lamp Rated Life	The normal service life is about 1500 hours
Filter	Daylight filter (window glass filter or UV extension filter also available)
Effective Exposure Area	2200cm^2 (11 sample racks, can hold 22 samples of 150×70mm)
Irradiance Monitoring Method	340nm or 420nm or 300nm～400nm (show at the same time)
Irradiance Setting Range	0～90W/m^2 (300nm～400nm) or 0.3 W/m^2～0.75 W/m^2 (@ 340nm) or 0.5 W/m^2～1.35 W/m^2 (@ 420nm)
Black Panel Temperature Setting Range	Chamber temperature ~ 100°C (slightly different depending on the external environment and the set irradiance)
Operation room Relative Humidity Control Range	10%～75% (when irradiated) ; 10%～95% (During spray or dark cycle)
External Dimensions	860mm×800mm×1770mm (Length x Width x Height)
Power Supply	Three-phase AC 380V, 50HZ; maximum current 16 A
The Maximum Power Of The Whole Machine	5.5 KW
Humidification Gas Source	0.3~0.8Mpa

Ordering Information

- SX/2200/H--Xenon Test Chamber
- SX/340--Xenon lamp irradiance calibration meter (340nm)
- SX/300--Xenon lamp irradiance calibration meter (300nm-400nm)
- SX/2200/H/A--1.8 KW xenon lamp tube (imported from the United States)
- SX/420--Xenon lamp irradiance calibration meter (420nm)
- SX/2200/H/W50--Pure water system (50L/h; optional)

SONACME
Environmental Test Chambers

Xenon Test Chamber-SX/6500/H

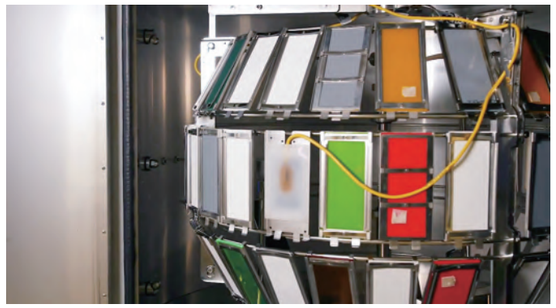
The Xenon Chamber is a rotary type that meets the requirements of all domestic and foreign test standards.
It adopts a high-power precision water-cooled xenon lamp of 6.5KW, and the exposure area reaches 6500cm^2.

The Xenon light source and filter imported from the United States are used to simulate the full spectrum of sunlight more realistically. The stable light source ensures the comparability and reproducibility of the test data.

Exposure Area Up To 6500cm^2

It can expose 63 to 65 standard samples of 150mm×70mm at a time.

The automatic rotating three-layer drum-shaped sample rack ensures consistent test conditions for all exposed samples.



Chiller

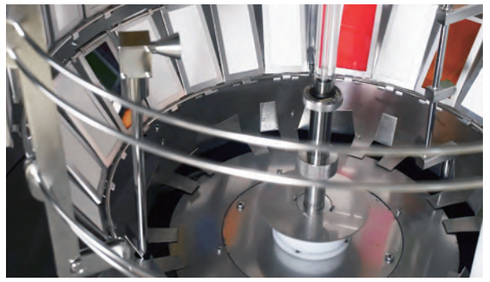
Pure water system

Imported Light Sources and Filters

Adopt imported 6.5KW water-cooled long arc xenon lamp and imported filter from the United States. It can fully simulate the indoor or outdoor solar spectrum, and the lamp has a lifespan of up to 2000 hours, in line with international test standards.

Newly Upgraded Inner Chamber

The new stainless steel sandwich liner design will avoid rust and leak, and at the same time effectively prevent the water vapor in the work room from penetrating into the electrical part and damaging the electronic components.

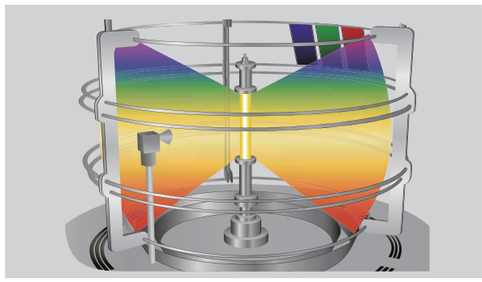


Remote Control

Standard TCP/IP Ethernet interface, users can remotely monitor the running status of the machine through the network, even if they are not in the laboratory, users can operate the aging Chamber.

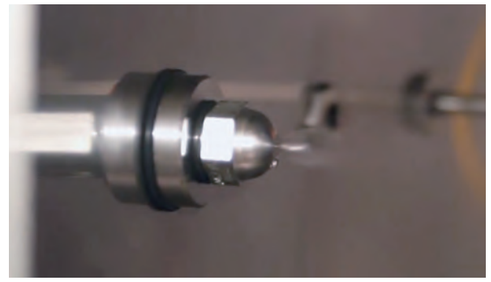
Irradiance Self-calibration

Users can calibrate the irradiance by themselves. Through the irradiance meter, just enter the value read from the calibrator, and then click OK to automatically complete the entire calibration process.



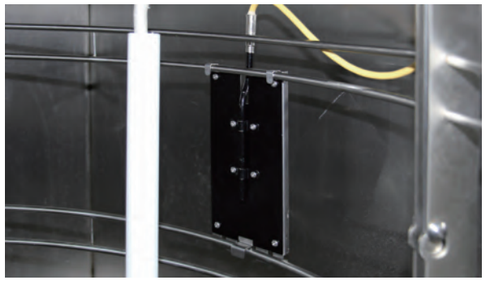
Spray System

The spray system is designed with 2 groups of 6 nozzles, one group on the front and one on the back of the rotating sample frame; it is controlled by Siemens PLC program, and the spray time can be arbitrarily set in the program.



High precision sensor

Using high-precision Pt 100 black panel temperature sensor and blackstandard thermometer temperature sensor, the temperature of the sample room/the black panel temperature, is automatically controlled throughout the process (chamber temperature+20℃～100℃).



Easy to Operate Touch Screen

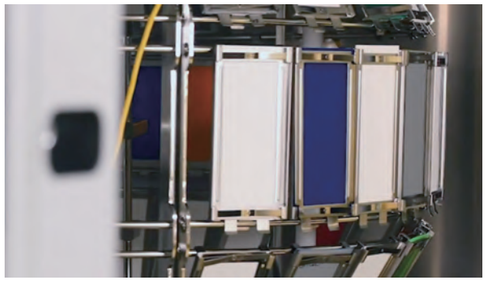
The operator can arbitrarily set various parameters required for the test through the man-machine interface, and can check the running status of the machine at any time.

A variety of Test Procedures Can be Set Arbitrarily

9 test programs can be freely programmed and 6 international standard preset programs can be stored, each program can be set with 10 segments of data.

Uniquely Designed Sample Rack

Redesigned, made of SUS 304 stainless steel wire drawing plate, and equipped with stainless steel spring pressing pieces.



Add Viewable Window

It is convenient for the test personnel to detect and observe the test situation.

Alarm Protection Function

The irradiance error is large, the black panel or black scale is overheated, the spray is short of water, the lamp power is abnormal, the humidity error is large, and the chamber is overheated.

Easy to Read Data

With a USB interface, the user can export all the operating experimental parameters of the instrument at any time, and automatically generate an EXCEL table, which is convenient for viewing the operating status of the instrument at any time.

Parameter

Model	SX/6500/H
Light Source	One 6.5 KW water-cooled long arc xenon lamp
Lamp life	2000 hours
Filter	Original ATLAS filter; fully simulates the indoor or outdoor solar spectrum
Effective Exposure Area	6500 cm^2 (63～65 pieces of standard samples of 150mm×70mm can be exposed to the sun at a time)
Irradiance Monitoring Point	340nm、420nm、300nm～400nm、300nm～800nm
Operation Room Temperature Adjustable Range	Chamber Temperature~70℃ (dark)
Black Panel/Black Scale Temperature Adjustable Range	BPT：Chamber Temperature~110℃；BST：Chamber Temperature~120℃
Temperature Fluctuation	±1℃
Temperature Uniformity	≤2℃
Temperature Deviation	≤±1℃
Humidity Range	Light: 10%-75% No light: 10%-95%
Sample Rotating Speed	1r/min (around the center of the tube)
Water Spray Cycle	Spray duration and spray cycle can be set arbitrarily
Water Source	High purity deionized water, conductivity <2us/cm
Mains Power	AC380V±10%, three-phase four-wire 50Hz; maximum current 50A, maximum power 9.5KW
Pure Water Flow	Humidification: 0.2L/min; sample spray (front spray): 0.2L/min; sample rack spray (back spray): 0.2L/min
External Dimensions	1220mm×1200mm×2050mm (length x width x height)

Irradiance Adjustable Range						
Filter Combination			Irradiance Setting Range (W/㎡)			
Test Conditions	Inner Filter	Outer Filter	Lamp Power (KW)	340nm	420nm	300-400nm
Daylight Filter	Type S Boro	Type S Boro	2.5～7.5	0.25～1.26	0.59～2.76	29～141
Window Glass Filter	Type S Boro	Soda Lime	2.5～7.5	0.23～1.10	0.61～2.76	28～129
UV Extension Filter	Quartz	Type S Boro	2.5～7.5	0.29～1.50	0.59～2.79	32～161

Ordering Information

- SX/6500/H--Large Xenon Lamp Aging Test Chamber
- SX/420--Xenon Lamp Irradiance Calibration Meter (420nm)
- SX/6500/H/W50--Pure water system (50L/h; optional)
- SX/65/A--6.5KW Water-Cooled Long Arc Xenon Lamp (Imported from the United States)
- SX/6500/CW--Chiller (cooling capacity: 6050W, water storage capacity: 23L, temperature range: 6℃~35℃)
- SX/340--Xenon Lamp Irradiance Calibration Meter (340nm)
- SX/300--Xenon Lamp Irradiance Calibration Meter (300nm-400nm)

Test Data Comparison

It can completely replace imported similar products

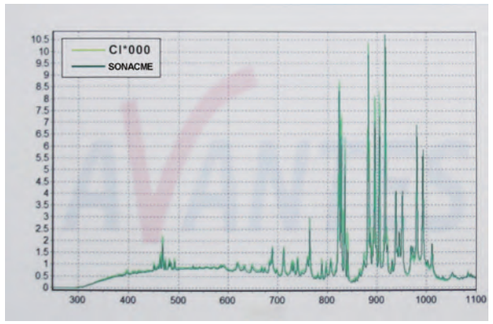
Equipment: an imported aging chamber of the same type & SX/6500/H
Filter system: Daylight
Standard product: Standard PS board, two kinds of blue wool test

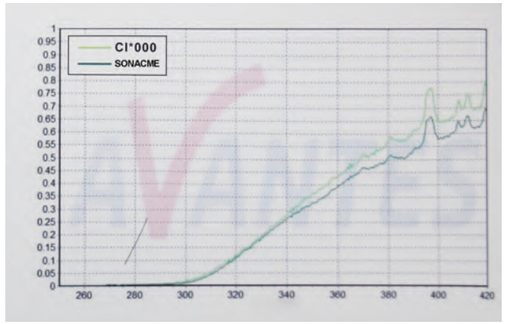
Sample Name	Sample Number	Equipment	Placement	ΔE			
				Time1	Time2	Time3	Time4
PS	6	SX/6500/H	Down	2.77	4.19	6.15	7.86
	5	Imported Brand	Down	2.54	3.98	6.59	7.61
	4	SX/6500/H	Middle	2.83	3.95	6.10	8.71
	3	Imported Brand	Middle	2.61	4.23	6.67	8.55
	2	SX/6500/H	Upon	2.65	4.44	6.6	8.47
	1	Imported Brand	Upon	3.33	4.52	6.22	8.41

Sample Name	Sample Number	Equipment	Placement	ΔE					
				24h	48h	72h	96h	120h	144h
Blue Wool-1	6	SX/6500/H	Down	3.51	6.41	7.78	10.15	11.45	14.03
	5	Imported Brand	Down	3.75	7.06	8.31	10.87	12.72	14.58
	4	SX/6500/H	Middle	3.40	6.57	8.19	10.49	12.48	14.28
	3	Imported Brand	Middle	3.64	7.10	8.46	11.49	13.20	14.50
	2	SX/6500/H	Upon	3.73	6.58	8.13	10.18	12.84	13.56
	1	Imported Brand	Upon	3.52	6.66	7.59	9.65	11.70	13.00

Spectral Comparison

Equipment: an imported aging equipment of the same type & SX/6500/H





The imported instrument and the SX/6500/H xenon lamp were used for spectral measurement respectively, and it was found that the irradiance of the two devices was highly consistent.

Irradiance Adjustable Range

Filter Combination			Irradiance Setting Range (W/m²)			
Test Conditions	Inner Filter	Outer Filter	Lamp Power (KW)	340nm	420nm	300-400nm
Daylight Filter	Type S Boro	Type S Boro	2.5 ~ 7.5	0.25 ~ 1.26	0.59 ~ 2.76	29 ~ 141
Window Glass Filter	Type S Boro	Soda Lime	2.5 ~ 7.5	0.23 ~ 1.10	0.61 ~ 2.76	28 ~ 129
UV Extension Filter	Quartz	Type S Boro	2.5 ~ 7.5	0.29 ~ 1.50	0.59 ~ 2.79	32 ~ 161

Main Accessories

Name	Quantity	Manufacturer	Remark
Light Tube	1	Original Imported From Atlas	6.5KW (optional U.S. imported lamp)
Xenon Lamp Filters	1	Original Imported From Atlas	Including 5pcs S65 inner filters and a 4.5K/6.5K outer filter (S BORO)
Control System	1	SIEMENS	S7-300 PLC+Siemens analog input
HMI	1	China MCGS	MCGS 10-inch touch screen man-machine interface
Pure Water System	1	Chinese Brand	Optional accessories, the water output is 100L/h; the pure water quality can reach <0.1μ S/cm; the water inlet <200μ S/cm
Chiller	1	----	Optional accessory for pure water recirculation cooling for complete savings in mains water consumption

Installation Environment Requirements

Environment: In a laboratory with a net area of installation area ≥ 12m2;net room height ≥ 2.8m, equipped with independent air conditioners, the working environment temperature can be maintained at 22°C to 30°C for a long time, and the humidity can be maintained at 30% to 80% for a long time; no strong electromagnetic field, no High concentrations of dust and corrosive gases (such as a salt spray corrosion cabinet installed) and flammable substances;

Power supply: 380V three-phase power, 50HZ, 50A power supply; equipped with power supply loop, ground wire and air circuit breaker;

Exhaust vent: with exhaust hole (distance from the instrument ≤ 1.0m; and the height of the exhaust hole from the ground is 2.5m ~ 2.7m, diameter 153mm);

Water supply: Equipped with water supply pipes and water valves; water supply water pressure ≥2.0kg/cm2; conductivity ≤120us/cm;

Drainage: The diameter of the drainage pipe is more than 50mm, and the height from the ground does not exceed 10cm, and the distance from the installation location of the equipment does not exceed 0.5 meters;

Compressed air: Clean oil-free compressed air, the pressure is about 0.5M Pa, air supply requirements: Maximum 60L/min, average air consumption 10-30L/min;

Please note: the average air consumption is related to the standard used in the test, different standards Air consumption varies.

Xenon Test Chamber - Temperature/Humidity/Light Control

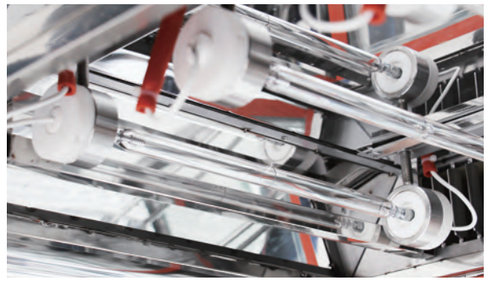
The Xenon Chamber can simulate the damage caused by full-spectrum sunlight, high temperature and humidity, and can reproduce the aging effect of products for months or even years in a few days or weeks.

The Xenon Chamber also adds a temperature and humidity test function. The temperature range is -70℃~+80℃. The shape of the sample can be arbitrary, whether it is flat or three-dimensional, it can be satisfied with the test.

Using 1.8KW/2.5kw air-cooled full-solar full-spectrum long-arc xenon lamp, it can more realistically reproduce full-spectrum sunlight, including ultraviolet, visible and infrared. Testing of many materials requires exposure to the full spectrum to provide an accurate simulation, especially in colorfastness testing and lightfastness testing.

● Air-cooled full-solar and full-spectrum long-arc xenon lamp

The most realistic reproduction of the full spectrum of sunlight, including ultraviolet, visible and infrared.

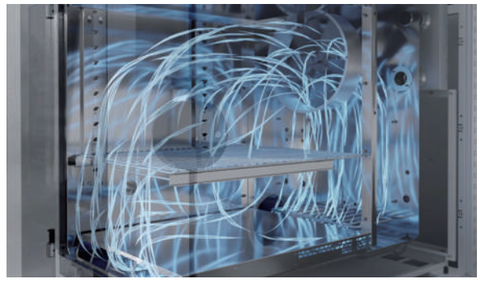


● Electronic temperature humidity sensor

Adopt VAISALA electronic humidity sensor imported from Finland; its humidity resolution can reach 0.01%rh.
There is no need to change the wet cloth, avoiding the added tedious work.

● Three-dimensional samples can be tested

Used to test a variety of materials while maintaining heat and humidity inside the chamber for proper temperature control. Three-dimensional (3D) part samples can be tested.

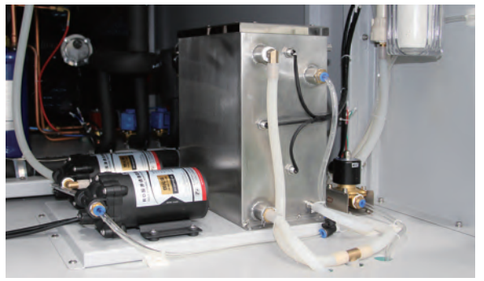


● Temperature range: -70 ~+80℃

The entire refrigeration system is designed with cold balance technology.it not only saves energy by 40%, but also prolongs the life of the compressor and improves the reliability of the equipment.

● Automatic water replenishment device

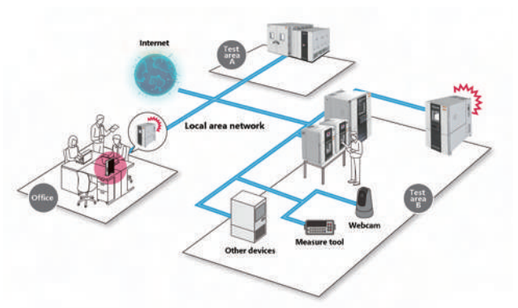
Equipped with automatic water replenishment system, double-layer filter device, new structure design, high efficiency and low water consumption.



● Observation Window

The observation window set is a multi-layer hollow tempered glass with automatic defrosting function, which can ensure that the glass surface is free of frost and condensation during any test.

Controller 【Easy-to-use, easy-to-read touchscreen】



Customized PLC by Sonacme

4.3-inch resolution: 65535 true color, LED backlight display screen, integrating monitoring and control; the screen adopts interactive touch operation.

Multi-country language options

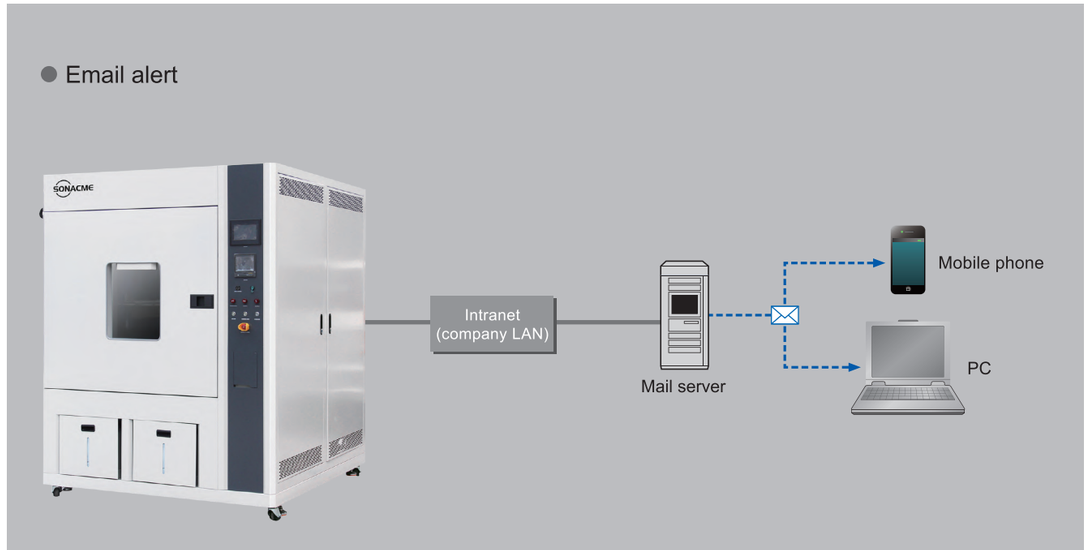
Standard Chinese and English, other languages can be customized.

Program capacity

- The fixed operation time can be set up to 999999 h 59 m (it can also run continuously without time limit);
- Usable program capacity: maximum 269 groups, a total of 13450 segments;
- Usable memory capacity: 50 steps per group;
- Repeatable commands: up to 32,000 cycles per command.

Test data logging and export

Temperature and humidity settings and measurements are recorded in the controller's memory. Data and its graphs can be exported to a USB flash drive.



Remote monitoring (Ethernet connection)

The chamber is equipped with a unique web application that allows confirmation and operation of the chamber status through a web browser screen (PC or tablet terminal). Can also be started from a remote location using a PC or other device.

View test data remotely

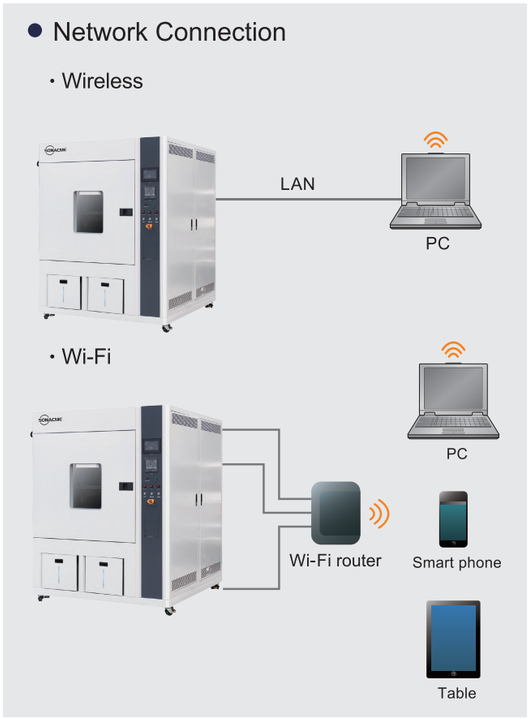
Settings and measurements saved in the test chamber can be displayed graphically on a web browser.

Screen display

Temperature and humidity setting (SV), actual (PV) value, running time, program segment running status, heating, humidifying, cooling output status, equipment operating status indicator light, etc.

Other functions

- Power-off memory function: Can be set to power-off recovery mode: Hot start, Cold start Stop;
- Power-on self-test, automatic fault prompts, and simple troubleshooting methods are displayed.



Walk-in Xenon Chamber- photovoltaic panel aging test

Sonacme Technology's light aging chamber for testing photovoltaic panels allows multiple tests to verify the long-term use of photovoltaic modules under all expected environmental conditions, Including:

- Temperature range: -70℃ ~ +80℃;
- Humidity freezing cycle: climate cycle with humidity control and temperature from +85°C to 40°C;
- Damp Heat Testing: Specifically designed to perform long-term testing (85°C; 85% RH: 1000 hours).

Standard test methods are established by the following PV module specifications:

- IEC 61215 Terrestrial Crystalline Silicon Photovoltaic (PV) Modules
- IEC 61646 Terrestrial Thin Film Photovoltaic (PV) Modules
- IEC 62108 Concentrating Photovoltaic (PV) Modules and Assemblies

Air-cooled full-solar and full-spectrum long-arc xenon lamp

The most realistic reproduction of the full spectrum of sunlight, including ultraviolet, visible and infrared.

Electronic temperature humidity sensor

Adopt VAISALA electronic humidity sensor imported from Finland; its humidity resolution can reach 0.01%rh.
There is no need to change the wet cloth, avoiding the added tedious work.

Large-scale PV Module Testing

Used to test a variety of materials while maintaining heat and humidity inside the chamber for proper temperature control.

Temperature range: -70 ~+80℃

The entire refrigeration system is designed with cold balance technology.it not only saves energy by 40%, but also prolongs the life of the compressor and improves the reliability of the equipment.

Automatic water replenishment device

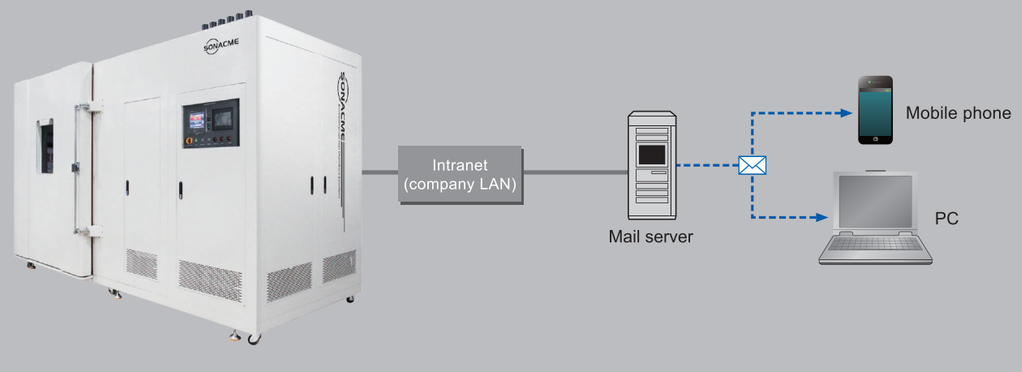
Equipped with automatic water replenishment system, double-layer filter device, new structure design, high efficiency and low water consumption.

Observation Window

The observation window set is a multi-layer hollow tempered glass with automatic defrosting function, which can ensure that the glass surface is free of frost and condensation during any test.

Controller 【Easy-to-use, easy-to-read touchscreen】

● Email alert



● Remote monitoring (Ethernet connection)

The chamber is equipped with a unique web application that allows confirmation and operation of the chamber status through a web browser screen (PC or tablet terminal). Can also be started from a remote location using a PC or other device.

● View test data remotely

Settings and measurements saved in the test chamber can be displayed graphically on a web browser.

● Screen display

Temperature and humidity setting (SV), actual (PV) value, running time, program segment running status, heating, humidifying, cooling output status, equipment operating status indicator light, etc.

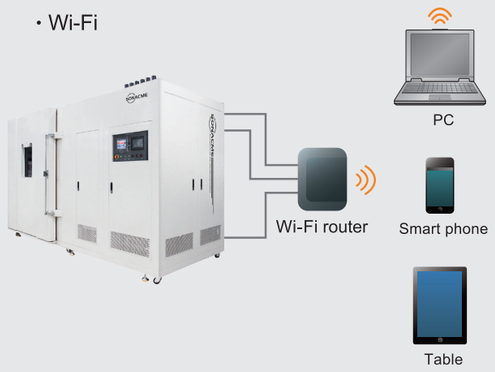
● Other functions

- Power-off memory function: Can be set to power-off recovery mode: Hot start, Cold start Stop;
- Power-on self-test, automatic fault prompts, and simple troubleshooting methods are displayed.

● Network Connection

・Wireless

・Wi-Fi



Parameter

Model		STX/400/H/A	STX/600/H/A	STX/1000/H/A	STX/3600/H/A
Temperature Specification	Temperature Control Range	-70.0℃～80.0℃ (A: 25℃～80.0℃; B: -20℃～80.0℃; C: -40℃～80.0℃; D:-70℃～80.0℃)			
	Temperature Fluctuation Range	±0.5℃			
	Temperature Descent Rate	80.0℃～-70.0℃ within about 90 minutes (1.0～2.0℃/min)			
	Temperature Rise Rate	-70.0℃～80.0℃ within about 60 minutes (3.0～5.0℃/min)			
	Temperature Uniformity	±2.0℃ (-40.0℃～80.0℃)			
		±3.0℃ (-40.0℃～-70.0℃)			
Humidity Specification	Humidity Control Range	20.0%RH～98.0%RH(Temperature range without light：10.0℃～85.0℃)			
		20.0%RH～80.0%RH(Temperature range with light：20.0℃～70.0℃)			
	Humidity Fluctuation Range	±2.0% RH			
	Humidity Uniformity	±3.0%RH			
Lighting Specifications	Irradiation Intensity	(300～850nm) 550±10%W/㎡、 (300～850nm) 1200±20%W/㎡			
	Xenon Lamp Power	3 pcs 1.8KW、2.5kw(Air-cooled full-solar and full-spectrum long-arc xenon lamp)			
	Sample Rotation Speed	1r/min			
	Arc Center And Test Distance	300～375mm			
Material/ Component	Internal Material	Stainless Steel Plate (SUS304)			
	External Material	Cold Rolled Steel Sheet / Powder Coating			
	Thermal Insulation Material	100mm thick polyurethane board + 10mm thick glass wool			
	Fan	Centrifugal fan			
	Compressor	Totally Hermetic Tecumesh Compressor, Semi-hermetic GEA Bock Germany, Bitzer Germany			
	Condenser	Air-cooled, Water-cooled			
	Refrigerant	R404A、R23、R508B、R449A			
	Evaporator	Finned Tube Heat Exchanger			
	Heater	Fin type explosion-proof heating tube			
	Humidifier	Steam Humidifier			
Size	Internal Dimension (mm) W*H*D	700*850*700	850*900*750	1000*1000*1000	1700*1800*1200
	External Dimension (mm) W*H*D	1350*1850*980	1500*1900*1050	1650*2100*1300	3600*2300*1600
	volume (L)	400L	600L	1000L	3600L
Power		380V AC 50/60Hz			
Controller		Sonacme Technology Customization			

SONACME
Environmental Test Chambers

Sunshine Simulation Test Chamber

The full-spectrum light aging test chamber is used to detect the aging performance of parts or vehicles under sunlight. Users may use this test to evaluate changes in the performance of parts or complete vehicles after irradiation, including shape, color, gloss, feel, strength, and various thermal expansion results.
Using German original metal halide lamps and dimmers to accurately simulate the real solar spectrum Specially designed structure to better protect the sophisticated irradiation system.

- Temperature Range: Non-radiation temperature range: -40°C to +120°C, radiation temperature range: -20°C to +100°C;
- Humidity Range: 10% ~ 98%RH;
- Light Wavelength: Full-band spectrum, simulating sunlight from 280nm to 3000nm;
- Irradiation Intensity: adjustable from 0 to 1200 W/M², and can be continuously recorded during the test;
- Volume: 600L, 1000L, 8m3, 10m3... Dimensions can be customized according to customer needs.

Implementation Standard:

- GJB150.7-86 Solar Radiation Test
- GJB150A.7-2009 Solar Radiation Test
- IEC60068-2-5 Test Sa: Ground-based Solar Radiation Simulation
- GB2423.24 Test Sa: Simulation of Solar Radiation on The Ground
- DIN75220 Changes of Automotive Components in Sunlight Simulation Devices
- MIL-STD 810G Environmental Engineering Related Matters and Laboratory Testing

The metal halide lamp is imported from Germany OSRAM. The spectral curve of this series of metal halide lamps is very close to the solar spectrum, which can simulate the radiation environment of sunlight.

Sunshine Simulation Environment Test

Main Specifications:

- Intensity: 600W/㎡~1,200W/㎡ (or higher)
- Working temperature: -10℃ ~ +60℃
- Working humidity (%): 5%~95%
- Uniformity: ±5% / Stability: ±1%
- Radiation: Overall radiation (260nm~3000nm)
- UV cutoff: 260nm or less

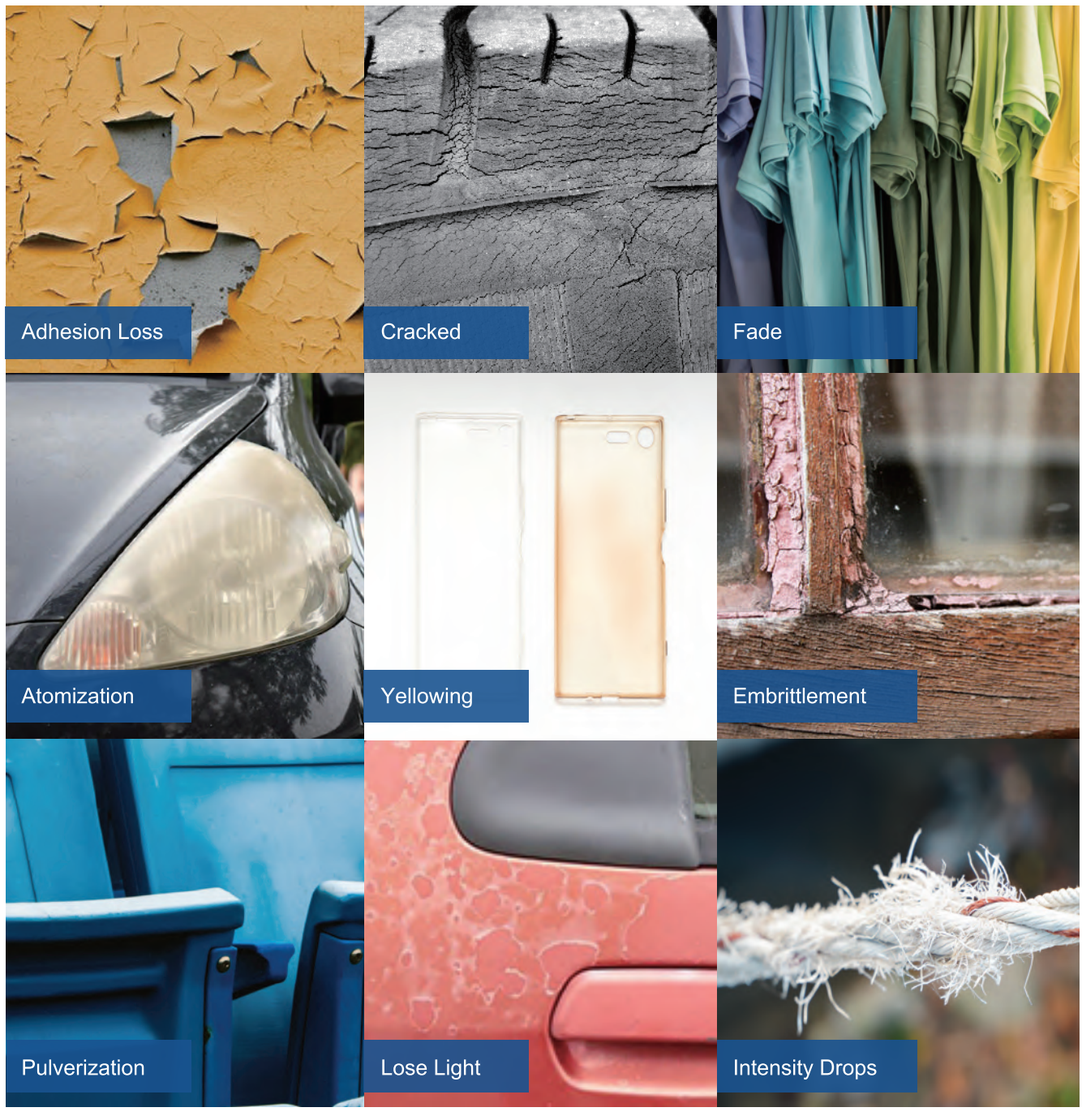
Application:

- Environmental performance test
- Air conditioner performance test
- Internal/External Material Testing
- Photovoltaic performance evaluation

UV Test Chambers

Sonacme Technology Tower UV Accelerated Aging Tester can reproduce the damage caused by sunlight, rain and dew. The aging effects of months or even years outdoors can be reproduced in days or weeks.
Testing was performed in alternating cycles of UV light and humidity by exposing the material to higher temperature-controlled conditions.
Simulate sunlight with fluorescent UV lamps, dew and rain by means of condensation or/and water spray.

Will your product stand up to the sun and rain? If you can test it, don't rely on guesswork!



Real Simulation

The equipped UVA-340 lamp can simulate the spectrum of the short wavelength part of sunlight most realistically. This portion of sunlight is extremely damaging to durable materials, such as plastics and paint. This allows a good correlation between the UV Weatherometer test and outdoor exposure.

Low Cost

The purchase cost and operating cost are extremely economical. The tower type UV test chamber has a reasonable design. It uses a cost-effective fluorescent UV lamp to simulate sunlight, and uses ordinary tap water to achieve condensation.

Easy to operate

The simple and compact design allows for easy installation, easy operation and minimal maintenance.

- > Simple user interface and easy programming
- > Continuous display of exposure conditions
- > Self-diagnostic alarms and maintenance reminders

Abundant Experience

Sonacme Technology provides high-quality aging test chambers and testing services. Our engineers participate in and lead ISO, ASTM, IEC, GB and many other professional organizations to develop standardized weathering test methods and procedures.

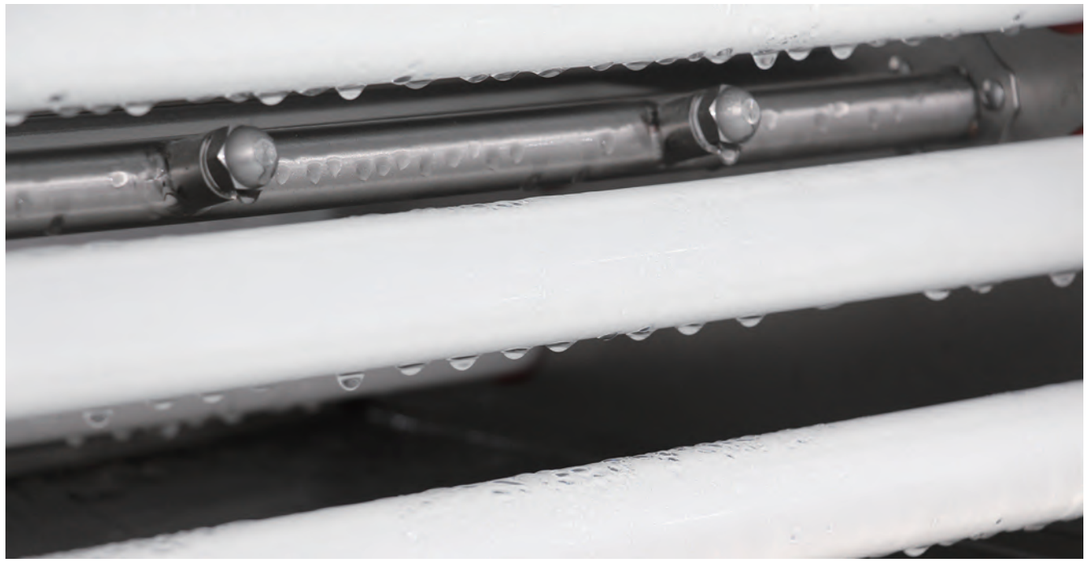
Wet Environment Simulation

The tower UV Test Chamber provides two moisture simulation methods. The application is more of a condensation method, which is a better way to simulate outdoor moisture erosion. Some application conditions also require water spray to achieve the actual effect, so the tower UV test chamber can run both the condensation cycle and the water spray cycle.

Condensation

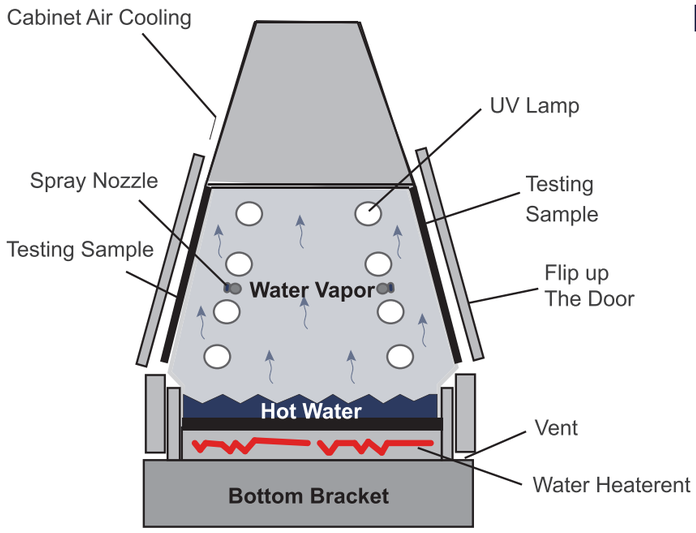
In many outdoor environments, materials can be wet for up to 12 hours per day. Research has shown that dew, not rain, is the main contributor to this outdoor wetness. Simulate outdoor moisture erosion with a unique condensation feature. In the condensation cycle, water vapor is generated by heating the water tank at the bottom of the test machine. Hot water vapor keeps the chamber at 100% relative humidity at higher temperatures.

In the design of the tower UV aging chamber, the sample actually constitutes the side wall of the chamber, and the back of the sample is exposed to the air in the laboratory room. The cooling effect of the room air causes the surface temperature of the sample to be several degrees lower than that of the water vapour, thus ensuring that the water vapour will continue to condense on the sample surface. This condensed water is very stable pure distilled water. Even if ordinary tap water is used, pure water is collected on the surface of the sample.



Real Simulation

Dew, not rain, is responsible for most of the humidity in outdoor exposures.



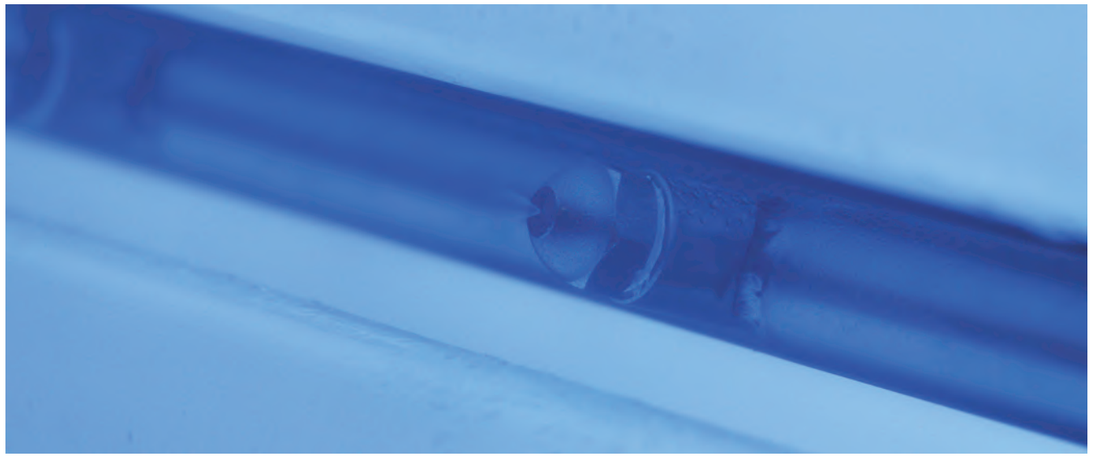
Condensation

> Consistent with natural moisture
> Accelerate the experimental process by increasing the temperature
> Use ordinary tap water
> Condensed pure water - no water spots or contamination on the sample
> Easy to maintenance

Water Spray

Under certain practical application conditions, such as sunlight, when the accumulated heat is rapidly dissipated by a sudden rain shower, the temperature of the material can change dramatically, resulting in thermal shock, which is a type of thermal shock for many materials. test. In addition, some materials are susceptible to mechanical erosion by rainfall. Water spray can simulate both thermal shock and mechanical corrosion.

Unlike condensing systems that work effectively with regular tap water, spray systems require laboratory-grade pure water.



UV And Sunlight Simulation

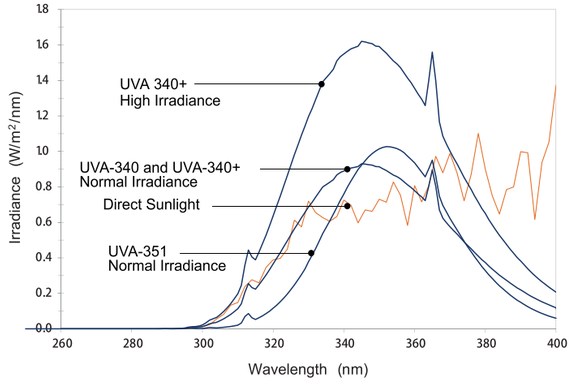
Ultraviolet light is the main factor responsible for photodegradation of outdoor products. SONACME Technology's fluorescent UV lamps can simulate the most important short-wave UV light in sunlight and reproduce the aging of the physical properties of materials caused by light. There are several different UV lamps to choose from, depending on the test conditions.

UV lamp

Sonacme Technology provides high quality UV fluorescent lamps. The lamp produce a spectrum that is inherently stable throughout use. Each batch of products must pass a rigorous series of tests before being approved for sale.

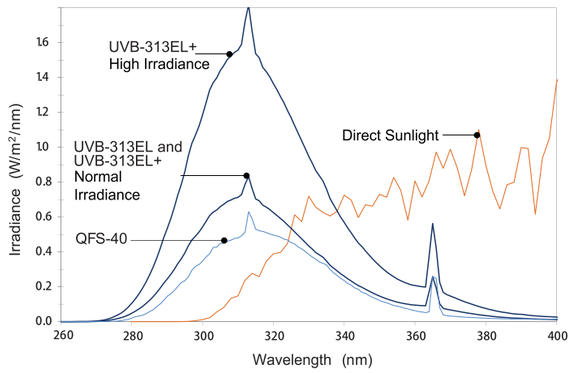
UVA Lamps

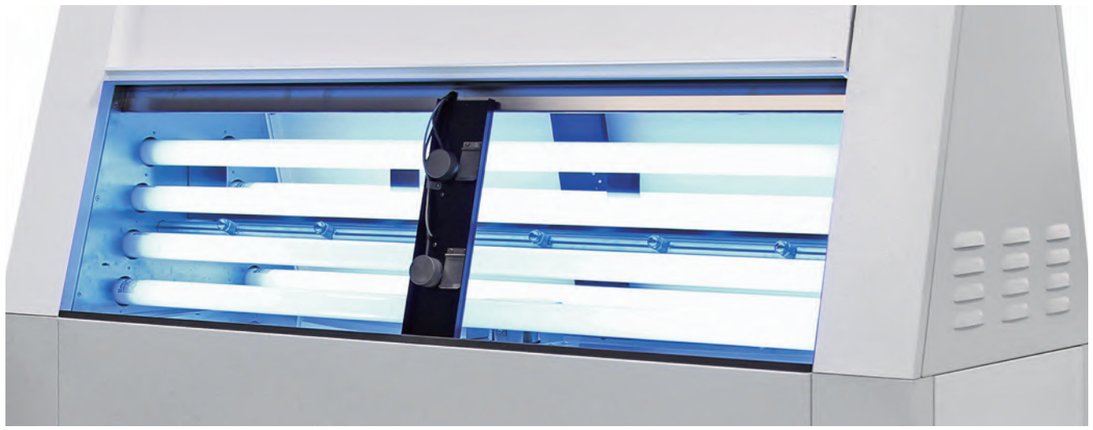
The UVA-340 lamp can well simulate sunlight in the critical short wavelength region of sunlight from 365nm to 295nm. Each batch of products must pass a rigorous series of tests before being approved for sale. The UVA-351 tube simulates the UV portion of sunlight passing through window glass. Cool white lamp can also be used to simulate an office environment.



UVB Lamps

UVB-313EL lamps produce short-wave ultraviolet light that is stronger than the sun's ultraviolet rays that normally shine on the earth's surface. UVB-313 lamps are mainly used for quality control and product development, or to test materials with strong weather resistance. The UVB-311EL+ lamps also provide high irradiance levels for the most demanding fluorescent UV tests.

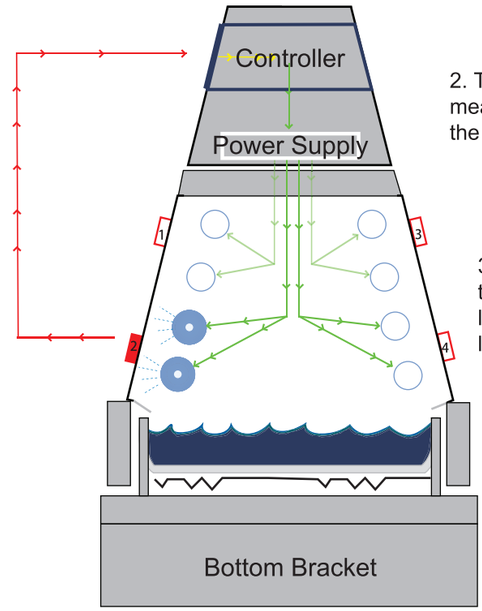




Irradiance Control

Changes in light intensity can affect the rate at which a material ages, and differences in the spectrum may affect both the rate and type of ageing of the material. Weathering testers must control irradiance to obtain accurate, repeatable test results. The irradiance control system is a precise closed-loop control system that automatically maintains the set light intensity through a feedback loop. The controller continuously monitors the UV light intensity and adjusts the lamp output to compensate for changes in light intensity due to lamp aging or any other factor. Better reproducibility and repeatability than manual systems.

1. In the UV cycle, the built-in sensor measures the light intensity of each group of lamps and transmits the data to the controller.



2. The controller compares the measured irradiance value with the set value.

3. The controller then instructs the power system to adjust the lamp output to maintain the light intensity set point.

Temperature Automatic Control / Can Be Calibrated

In each cycle, the temperature can be controlled at a set point. At the same time a black panel thermometer can monitor the temperature. The increase in temperature can accelerate the aging process, and at the same time, temperature control is also important for test reproducibility.

Black Panel Temperature is the temperature measured by a rod-shaped platinum thermocouple on the surface of a metal test plate coated with a black coating (which can absorb at least 90% to 95% of the radiation within 2500nm). It is under the same exposure conditions as the test panels and is used to control the temperature obtained on the exposed surfaces of the test panels.

The black panel temperature required by the test can be arbitrarily set and automatically controlled during the entire test process. Black panel thermometers can also be calibrated periodically through the calibration interface.

Built-in Alarm Protection Function

Proven over-temperature protector and buzzer, which will automatically sound an alarm when a fault occurs.

Operating Control System

The tower UV accelerated aging tester is easy to operate. Programming is more intuitive. All models are fully automatic and operate unsupervised 24 hours a day, 7 days a week.

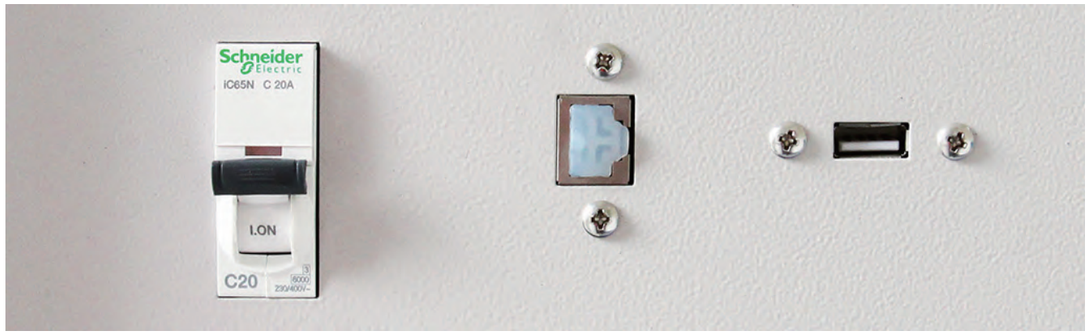
The controller is practical and easy to operate and can be programmed in eight languages (English, French, Spanish, Italian, German, Chinese, Japanese and Korean). In addition, we are constantly adding other languages. Users can program and store up to 13 test cycles in internal memory, with battery backup.

The touch screen display of the tower UV accelerated aging tester can check the test parameters and performance in real time, while controlling the operation and settings of the tester. Multi-color LED lights indicate the working status of the testing machine at a glance. Tester performance data is automatically recorded and easily exported via a USB drive. Software updates can also be performed quickly using the USB port without interrupting the operation of the test machine.

Remote Monitoring System

Standard TCP/IP Ethernet network interface, users can remotely monitor the running status of the machine through the TCP/IP network

Through this network interface, the user can remotely monitor the real-time running status of the test chamber as long as a reasonable IP address is set. Even if he is not in the laboratory, the user can operate and maintain the test chamber. Moreover, it is also very convenient for our company to provide remote services to users, which greatly saves the time and cost of after-sales service and solves the worries of users.



Calibration and Maintenance

The controller has complete self-diagnostic error checking. The controller continuously monitors the status and performance of all systems. It also displays simple warning messages and reminders for routine maintenance, as well as safe shutdown operations as needed. Components that typically require regular maintenance include lamps, sensor calibration and cost-effective air filters.

Irradiance sensors require regular user calibration to ensure accurate and consistent results.

Calibration is simple with a calibrator and an automatic calibration system.
It only takes a few minutes and virtually eliminates the potential for human error. The smart sensor of the calibrator is disposable, inexpensive and need to be replaced every year.

Standard

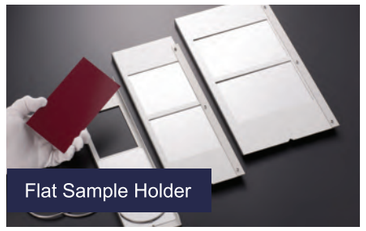
Sonacme Technology Tower UV Test Chamber complies with the specifications of almost all major international, national and industry test standards, including the following standards. For a more comprehensive list of standards, please contact us.

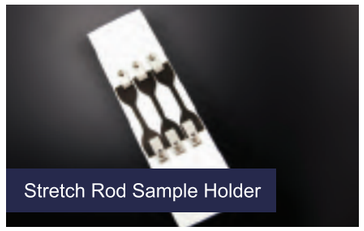
- ISO 11507 "Artificial Weathering Exposure of Paints and Varnishes Coatings Exposure to Fluorescent Ultraviolet Light and Water"
- ISO EN 4892-3 "Plastics. Methods of exposure to laboratory light sources. Part 3: UV fluorescent lamps"
- GB/T 14522 "Artificial climate accelerated test method for plastics, coatings and rubber materials for machinery industry products"
- GB/T 23983 "Determination of yellowing resistance of wood coatings"
- GB/T 23987 "Artificial Weathering Exposure of Paints and Varnishes Coatings Exposure to Fluorescent Ultraviolet Light and Water"
- GB/T 16422.3 "Exposure method of plastic laboratory light source test: Part 3: Fluorescent ultraviolet lamp"
- ASTM D4587 “Conducting Fluorescent UV Condensation Exposure Tests for Paints and Related Coatings”
- ASTM D5894 Painted Metals
- ASTM G154 "Standard for Fluorescent UV/Water Exposure of Non-Metallic Materials"
- ASTM D4329 "Standard for Fluorescent UV/Water Exposure of Plastics"
- ASTM D "Standard for Aging of Asphalt Roofing Materials"
- SAE J 2020 “Accelerated Exposure Standard for Automotive Exterior Materials”

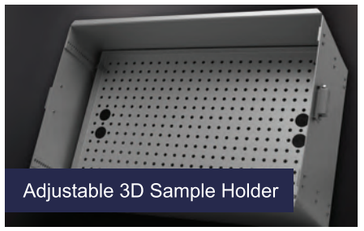
Parameter

Model	ST/UV/A
Light Source	UV-A（wavelength 340nm）or UV-B（wavelength 313nm）；40W×8
Lamp Rated Life	Normal Service Life 6000 hours
Irradiance Setting Range	0.3 W/m^2 ~1.55 W/m^2
Black Panel Temperature Setting Range	Chamber Temperature +10℃ ~80℃
Maximum Rated Power	2 KW
Internal/External Shell Material	All stainless steel plate 304 / all stainless steel material surface spray, never rust
Exposure Area	5175cm^2/828in^2
Standard Template	24 standard sample racks (48 pieces of 150×70mm templates can be put in at one time)
Water Supply Adjustment Range	0-4 LPM
Water Consumption	7L/ day （Water for condensation）；3L/minute（Spray Water）
Power Supply	220V，50Hz（60Hz can be customized），Maximum current 10A
External Dimensions	1360mm×560mm×1290mm（length x width x height）

Sample Holder Type


Flat Sample Holder


Stretch Rod Sample Holder


Adjustable 3D Sample Holder

Main Performance Characteristics

Black Panel Temperature Controller
Black Panel or blackstandard thermometer

Irradiance Control
Settable Range: 0.3 W/m2 to 1.55 W/m2

Optional Sample Holder
A variety of flat and 3D sample holders are available

Large Sample Capacity
24 standard sample racks
(48 pieces of 150×70mm samples can be put in at one time)

USB Interface
Convenient data transfer and software upgrade

Full Color Touch Screen
Optional Multiple Language

Durable Construction
Anodized and painted aluminum construction will not rust

Adjustable Flow Control
Fine-tuning of sample water spray volume

Standard Casters
Increased mobility when lab space is small

Comparison With The Parameters Of A Well-known Foreign Brand

Project	ST/UV/A	A Well-known Foreign Brand Aging Chamber
Light Lamp	8 Lamps imported from the United States; UVA or UVB	
Lamp Life	6000 hours (Implemented by domestically created ballasts with independent intellectual property rights)	5000 hours
Operation Interface	Touch screen man-machine interface, edit the program directly in the item, and check the running status of the test parameters at any time	Multiple buttons and interfaces jointly implement programming and monitoring functions, which are complex and difficult to understand
Irradiance Automatic Calibration	Exist	Exist
Black Panel Temperature Irradiance Automatic Calibration	Exist	Exist
Data is collected in Real Time, which can be USB interface directly export to Excel format	Exist	Exist
TCP/IP Ethernet interface, remote monitoring	Exist	Exist
Standard Booster Pump	Exist	Exist

Bench-top UV Test Chamber

Sonacme Technology Benchtop UV Test Chamber can reproduce the damage caused by sunlight, rain and dew. The aging effects of months or even years outdoors can be reproduced in days or weeks. Testing was performed in alternating cycles of UV light and humidity by exposing the material to higher temperature-controlled conditions.

Simulate sunlight with fluorescent UV lamps, dew and rain by means of condensation or water spray.

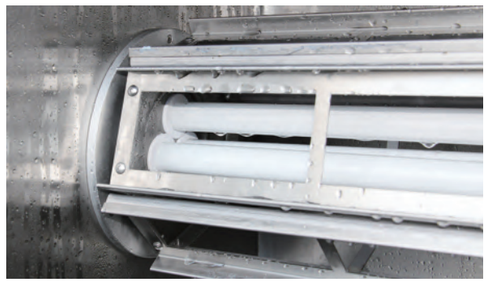
The chamber uses three 20W fluorescent ultraviolet lamps with a wavelength of 313nm (or 340nm) as the experimental light source, and can expose 18 standard samples (size 150mm×70mm) at a time.

Parameter

Model	SB/UV/A
Light Source	3 sticks，20W
Wavelength	313nm（or 340nm）
Lamp Rated Life	1000h
Lamp Irradiation Energy	0.7W/m^2
Test Time Setting Range	1h~99,999h
Spray Time Setting Range	1min~99,999min
Spray Interval Time Setting Range	1min~99,999min
Closest Distance from the tube wall to the sample	50 mm
Sample Turret Speed	3.7c.p.m
Water Consumption	4L/minute（spray water）；7L/day（water for condensation）
Operation room Temperature Setting Range	Chamber Temperature+5℃～60℃
Test Sample Size Required	150mm×70mm（18 standard samples can be exposed at one time）
External Dimensions of Test Chamber (L×W×H)	940mm×490mm×630mm
Power Supply	220V/50HZ,6A
Total Instrument power	1.2 KW

● Rotatable Sample Holder

18 standard samples (150mm×70mm in size) can be exposed to the sun at a time.The uniform rotation of the sample holder ensures that each sample can get the same irradiation energy.



● SUS 316 stainless steel inner chamber

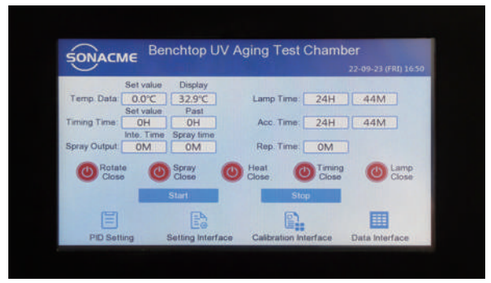
The optimized stainless steel interlayer liner design will avoid rust and leak, and at the same time effectively prevent the water vapor in the work room from penetrating into the electrical part to damage the electronic components.

● Evenly Distributed Spray Holes

The new and improved spray holes make the spray more uniform and improve the comparability and reproducibility of test results.

● Touch screen is easy to operate

The operator can arbitrarily set various parameters required for the test through the man-machine interface, and can check the running status of the machine at any time.

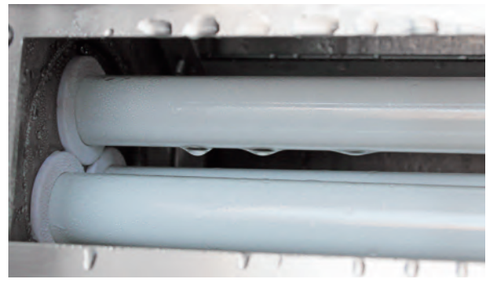


● Built-in Alarm Function

Built-in water level switch, the machine will automatically alarm and stop automatically when the water level is low. All-round protection of the machine.

● Cost-effective

This is an economical, simple and applicable Benchtop UV test chamber. With low purchase price, low-priced lamps and low running costs, even small labs can afford it.



Other Environmental Test Chambers

Temperature Humidity Salt Spray Corrosion Test Chambers

Sonacme Technology's composite salt spray corrosion chamber is one of the most versatile salt spray corrosion test systems, meeting the test requirements from continuous salt spray testing to condensation humidity and improvement testing.

Sophisticated automotive cyclic corrosion tests include moisture or condensation, salt spray, and dry environments.

Model	Temperature range	Humidity range
SSC/2000(H)	-20℃～80℃	20%RH～98%RH

HAST Accelerated Aging Chambers

It is widely used in the sealing performance test of multilayer circuit boards, IC packaging, liquid crystal screens, LEDs, semiconductors, magnetic materials, NdFeB, rare earth, magnets and other materials, and tests the pressure resistance and air tightness of the above products.

Standard features include condensation protection for heating and cooling stages, program control, 12 contacts for controlling test samples and automatic water supply.

Model	Temperature range	Humidity range
SHAST/400	105.0℃～155.0℃	70.0%RH～100.0%RH

Rain test chambers

Sonacme Technology rain test chamber is suitable for IPX1, IPX2, IPX3, IPX4, IPX5, IPX6, IPX7, IPX8, IPX9K protection of products water level test. The shell is made of high-quality steel plate, and the surface is sprayed with baking paint, which is beautiful and durable. The drip chamber is designed with vacuum and made of stainless steel.

The contact position of the nozzle is designed with a brass cone, which is convenient for installing the spray nozzle.

Energy-saving Temperature and Humidity Chambers

The wide range of Sonacme technology environmental test chambers and constant temperature and humidity test chambers allow you to control the temperature and humidity in the test chamber, ranging from -70°C to +180°C (temperature) and from 10% to 98% (Relative humidity).

Helps you test the effects of temperature and humidity on the characteristics, functionality and life of your products under accelerated conditions

Model	Temperature range	Humidity range
ST/1000/70(H)	−70 to +180℃	10～98%rh

Double-Layer Temperature And Humidity Chambers

The double-layer temperature and humidity chamber can be integrated with two machines in an effective space, so that a single chamber has two independent spaces.

Two different temperature conditions can be tested at the same time to achieve good space utilization and shorten the test time.

Model	Temperature range	Humidity range
ST/600/70(H)/2	−70 to +180℃	10～98%rh

Walk-In Temperature And Humidity Chambers

Walk-In temperature and humidity chambers are available in a variety of sizes and configurations for standard and custom solutions.

Ideal for testing large products, batches or full vehicle testing with panelized or welded walk-in chamber solutions.

Model	Temperature range	Humidity range
SWT/18/70(H)	−70 to +150℃	20～95%rh