SUNTEST XXL

XENON TEST INSTRUMENTS

Light Fastness

Weather Fastness

Photostability

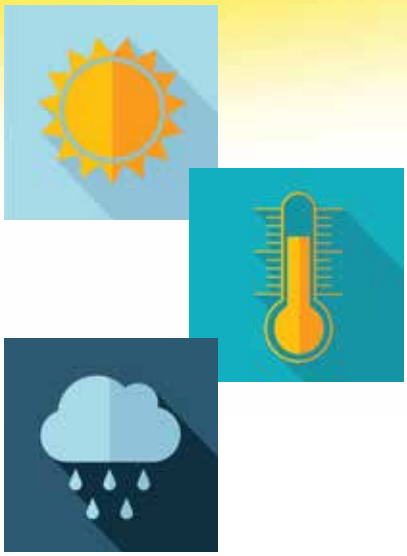
ATLAS®
MATERIAL TESTING SOLUTIONS

AMETEK®

Testing The Resistance Against Weathering Within Weeks

Weathering Under Control: SUNTEST

Weathering refers to the natural aging of polymer-based materials when exposed to sunlight, temperature, and water. Common effects are color fading, yellowing, cracking, delamination, chalking, loss of gloss and strength.



SUNTEST are available in 3 sizes. By use of optical filters, it produces realistic outdoor/indoor sunlight conditions. Through time-compression and intensified cyclic testing, especially when combined with water sprays/flooding, weathering inside a SUNTEST occurs multiple times faster as compared to realtime.

Applications

All SUNTEST provide a horizontal test plane particularly useful for 3-D specimens testing. SUNTEST can test everything except explosives and flammable products. Most common applications include weathering testing of:

- Polymers
- Coatings
- Electronics
- Automotive
- Food & Beverage
- Textiles
- Packaging & Printed Matters
- Cosmetics
- Pharmaceuticals

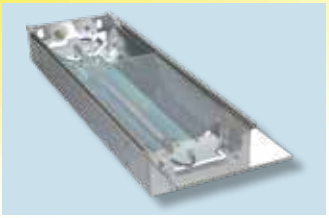




Testing Technology

Accurate control of the elements irradiance, spectrum quality, temperature, relative humidity, and water is key for weathering testing.

Weathering Elements:



Flat Optical Filters

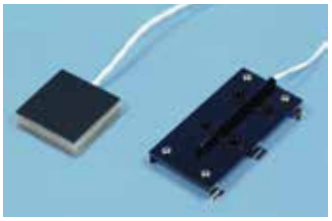
Spectrum Quality

Atlas optical Daylight and Window Glass filters provide relative spectral irradiance according to ISO 4892-2. The majority of optical filters for the SUNTEST is non-aging. Means they produce the same high spectrum quality as long as they stay in shape.

One Light Monitor per Lamp

Irradiance

The Atlas SUNSENSIV irradiance control system constantly monitors the xenon lamp output. Its patented technology allows monitoring of two different wavelengths:
300-400 nm / 340 nm or alternatively 300-800 nm / Lux. Additional 420 nm option.



SUNTEST BST/BPT Sensors

Temperature

The most relevant temperature in weathering testing is the specimen surface temperature, because it drives degradation rates. A black panel / black standard is used to control it. Since it is black it represents the upper end of possible surface temperatures.

Ultrasonic Humidifier XXL

Humidity

Humidity control adds precision to weathering testing. Therefore, it is required by many weathering test methods, especially automotive. Due to their size, SUNTEST CPS+ and XLS+ come only with an CAT / RH sensor to monitor both.

Actual control of RH / CAT is limited to larger SUNTEST models, which can integrate water tanks, heaters, and humidifiers.

Wide Angle Spray Nozzles

Front Spray / Back Spray

To simulate the damaging effects of water, front spray (XXL/-FD) or front and back spray (XXL-ST) are available.

Combined Front Spray and Back Spray XXL-ST

SUNTEST XXL, XXL-FD, and XXL-ST

The large full-featured models for testing of 3-D products

Key Features

- Approx. 3000 cm^2 exposure area
- Switchable irradiance control at 300-400 / 340 nm or 300-800 nm / Lux, 420 nm option
- BST or BPT control
- Simultaneous control of Chamber Air Temperature (CAT) and Black Standard Temperature (BST) / (BPT)
- Integrated chiller (XXL-FD)
- Specimen wetting by front spray (XXL, XXL-FD) and back spray (XXL-ST)
- Automatic control of relative humidity (RH)
- Access port for use of external sensors
- Setpoint monitoring
- WXView II compatible
- Large test library incl. all most used weathering tests

XenoTouch II User Interface and WXViewII™

SUNTEST are equipped with a large 10.1'' XenoTouch II UI. It harmonizes the user experience across all Atlas xenon-arc models. With its self-explanatory icons, and intuitive programming, operators can effortlessly transition between any Atlas SUNTEST, Xenotest, or Ci WEATHER-OMETER.

With 15 user-selectable languages, operators in any global lab can walk right up to a SUNTEST and begin programming.

Atlas developed online DAQ software WXView II, since remote access to test data and reporting is crucial.

WXView II allows users to:

- View live and archived data from anywhere, anytime.
- Will generate uneditable PDF reports as proof of testing (compliant with FDA 21 CFR Part 11).

XenoTouch II

WXView II

Accessories

Optional accessories extend the test capabilities of the SUNTEST

Sliding table for easier loading/ unloading

- exposure area 74 x 37 cm
- max. load: 6 kg

Store Light® for simulation of artifical light conditions inside a store or supermarket

- ASLT of consumer goods
- usage in combination with 300-800 nm control

SunCal Calibration sensor for irradiance and BST

- SunCal BB 300-400 BST
- SunCal WB 300-800 BST
- SunCal LUX BST

Test Standards

SUNTEST XXL models are designed to meet the following standards:

General	ASTM G151, G155, ISO 4892-1
Adhesives & Sealants	ASTM C732, C734, C793, C1184, C1257, C1442, C1501, C1519
Automotive	ISO 105-B06, PV1306, SAE J2527**, J2412**
Coatings	GB/T 1865, ISO 16474-2
Consumer Goods	ATLAS ASLT (Store Light)*
Electronics	IEC 60068-2-5, IEC 62788-7-2
Military	MIL-STD-810H
Printing Inks	ASTM D3424, D4303, D6901, F2366, GB/T 22771, ISO 12040
Plastics	ASTM D1248, D2565, D5071, D6662, GB/T 16422.2, ISO 4892-2
Pharmaceuticals	ICH Q1B*, ICH Q5C*, VICH GL5*
Roofing	ASTM D1670, D4798
Rubber	ASTM D750, D925, D1148
Textiles	AATCC TM169, ASTM D4355, GB/T 8427, 8431, 16991, ISO 105-B02, -B04, -B10

This table is a representative compilation of global standards that can be met with SUNTEST XXL models. Specialties for XXL-FD and XXL-ST** instruments. SUNTEST models may not fulfill all standards or all methods within individual standards.*

Natural Weathering

Combine your xenon testing with testing in natural benchmark locations

Natural weathering data are useful in many ways: for correlation studies, determination of acceleration factors, supporting product durability claims, or optimizing a specific xenon test.

Arizona Test Site: hot, dry, extreme UV

Florida Test Site: hot, humid, high UV

Specifications

	SUNTEST XXL	SUNTEST XXL-FD	SUNTEST XXL-ST
Dimension (WxDxH)	90x91x172 cm	90x91x172 cm	90x91x172 cm
Instrument weight	290 kg	345 kg	290 kg
Air-cooled xenon lamp	1700 W (3)	1700 W (3)	1700 W (3)
Specimen tray size (LxW)	79x39 cm	79x39 cm	79x37 cm
Exposure area	3000 cm^2	3000 cm^2	2925 cm^2
Max. load	6 kg (20 kg w/o tray)	6 kg (20 kg w/o tray)	6 kg
Distance test tray - xenon lamp	44 cm	44 cm	44 cm
CE, UL, ISO, EN, CSA, UKCA	yes	yes	yes
Electrical Requirements 208-230 V	3P/PE, 32 A, 4 wire	3P/PE, 32 A, 4 wire	3P/PE, 32 A, 4 wire
Electrical Requirements 400 V	3P/N/PE, 32 A, 5 wire	3P/N/PE, 32 A, 5 wire	3P/N/PE, 32 A, 5 wire
Electrical Requirements 460/480 V	3P/PE, 32 A, 4 wire	3P/PE, 32 A, 4 wire	- - -

Irradiance Performance

Optical Filter	SUNTEST XXL	SUNTEST XXL-FD	SUNTEST XXL-ST
Daylight	N/A (300-800 nm) 40-65 W/m^2 (300-400 nm) 0.30-0.60 W/m^2nm (340 nm) 0.75-1.45 W/m^2nm (420 nm) N/A klx	250-700 W/m^2 (300-800 nm) 40-65 W/m^2 (300-400 nm) 0.30-0.60 W/m^2nm (340 nm) N/A (420 nm) 55-145 klx	N/A (300-800 nm) 40-65 W/m^2 (300-400 nm) 0.30-0.60 W/m^2nm (340 nm) 0.75-1.45 W/m^2nm (420 nm) N/A klx
Window Glass	N/A (300-800 nm) 30-65 W/m^2 (300-400 nm) 0.25-0.50 W/m^2nm (340 nm) 0.70-1.55 W/m^2nm (420 nm) N/A klx	250-700 W/m^2 (300-800 nm) 30-65 W/m^2 (300-400 nm) 0.25-0.50 W/m^2nm (340 nm) 0.70-1.55 W/m^2nm (420 nm) 55-145 klx	N/A (300-800 nm) 30-65 W/m^2 (300-400 nm) 0.25-0.50 W/m^2nm (340 nm) 0.70-1.55 W/m^2nm (420 nm) N/A klx
Solar ID65	20-48 W/m^2 (300-400 nm) 0.60-1.60 W/m^2nm (420 nm)	250-600 W/m^2 (300-800 nm) 20-48 W/m^2 (300-400 nm) N/A (340 nm) N/A (420 nm) 55-130 klx	20-48 W/m^2 (300-400 nm) 0.60-1.60 W/m^2nm (420 nm)
Store Light	N/A	250-650 W/m^2 (300-800 nm) 55-145 klx	N/A
Extended UV	N/A	N/A	N/A (300-800 nm) 30-75 W/m^2 (300-400 nm) 0.25-0.75 W/m^2nm (340 nm) N/A klx

Temperature and Humidity Performance

	SUNTEST XXL	SUNTEST XXL-FD	SUNTEST XXL-ST
BST (light cycle)	45-100 °C	45-100 °C (chiller off) 25-100 °C (chiller on)	45-100 °C
BPT (light cycle)	45-95 °C	45-95 °C (chiller off) 25-95 °C (chiller on)	45-95 °C
CAT	~35-70 °C	~35-70 °C (chilleroff) 15-70 °C (chiller on)	~35-70 °C
RH	20-95 %	20-95 %	20-95 %

[1] Irradiance performances are aligned to guarantee 1500 h lamp life.

[2] 300-800/Lux light monitor instead of 300-400/340 nm required to run Atlas StoreLight.

[3] Irradiance homogeneity: approx.±7 %.

[4] All temperature/RH ranges may not be achieved depending on irradiance and CAT set points.

[5] Lowest achievable CAT/BST levels inside SUNTEST without chiller depend on the ambient laboratory temperature.

[6] BST/BPT homogeneity: approx.±10 %.

Atlas offers more than testing instruments. From technical advice to final test method implementation, Atlas provides the support that you need when determining the right weathering testing solution for your products. For more information, please contact your local Atlas sales office or visit us at www.atlas-mts.com.

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