

XENOTEST[®] 220/440

Light Exposure and
Weathering Testing Instruments



APPLICATIONS AND STANDARDS

What is your material's durability performance to the elements? Guessing shouldn't be an option. You need to know, and in the shortest period of time.

With the Xenotest® 220/440 instruments, material changes caused by weathering - sunlight, temperature and moisture, can be highly accelerated. For example, color fading, embrittlement or yellowing that would occur naturally over the course of months or years can be realistically simulated within days or weeks.

Within the Atlas Xenotest series, the Xenotest 220/220+ models are specifically designed for textile lightfastness testing, which meet common textile standards.

The Xenotest 440 model is a highly versatile weathering instrument suitable for testing materials such as textiles, plastics, coatings as well as interior and exterior automotive parts. The Xenotest 440, with XenoLogic™ lamp technology, is powered by two 2200 W xenon lamps capable of reaching 2-sun irradiance levels for significantly shorter test times and longer lamp service life.

Standards 220 / 220+	
ISO	105-B02, -B04, -B10*, 4892-2*, 16474-2*, IEC 60068-2-5*
GB/T	8427
ASTM	G151, G155, D2565
AATCC	TM 16.3 (Options 1,2,3) TM 169
M&S	C9, C9A
*220+ only	

Standards 440	
ISO	105-B02, -B04, -B06, -B10, 4892-2, 11341, 16474-2, IEC 60068-2-5
GB/T	8427, 16259
ASTM	G151, G155, D2565, D7869
AATCC	TM 16.3 (Options 1,2,3) TM 169
VDA	75202
VW	PV 1303, PV 3929, PV 3930



FEATURES

Xenotest® 220/220+

- 2310 cm² sample capacity; 1 air-cooled xenon lamp
- LCD display and key pad control (220)
- Full color multiple language touch screen user interface with online networking functions (220+)
- Pre-programmed textile standards
- Rotating specimen rack
- Radio-controlled, revolving XENOSENSIV® sensor for measuring the irradiance and black standard temperature
- Automatic control of irradiance, temperature and humidity
- Ultrasonic humidifier
- Specimen spray option

Xenotest® 440

- 2310 cm² sample capacity; 2 air-cooled xenon lamps
- Full color multiple language touch screen user interface with online networking functions
- Pre-programmed lightfastness and weathering standards
- Rotating specimen rack
- Radio-controlled, revolving XENOSENSIV® sensor for measuring the irradiance and black standard temperature
- Automatic control of irradiance
- Ultrasonic humidifier
- Specimen spray
- XenoLogic™ lamp operating technology
- High irradiance capability



PROGRAMMING AND MONITORING



Each model comes with a digital controller, featuring multiple languages to support error-free operation around the world.

Xenotest 220 Keypad Control

- User-friendly operating keypad
- Large 4-line display for easy viewing in 11 languages for error-free programming
- Space for 6 user-defined test methods
- Quick-start of test programs
- Parameter check for set values
- Automatic system / alarm messages



Xenotest 220+/440 Touch Screen Control

- Full color, 10.1" multiple language touch screen display
- Pre-programmed standard weathering tests
- Space for 10 user-defined test methods
- Quick-start of test programs
- Graphic display of the progression of all test parameters
- Parameter check for set values
- Automatic system / alarm messages
- Memory card for easy data acquisition and software updates
- Ethernet interface
- Add-ons for online programming and monitoring



ACCESSORIES

XenoCal® Sensors for Accurate Instrument Calibration

All XenoCal calibration sensors work independent of the instrument's control system to ensure proper calibration.

The combined XenoCal 300-400 BST sensor measures the irradiance in the UV range of 300-400 nm and the (insulated) black standard temperature (BST) simultaneously. The XenoCal 420 sensor measures the irradiance at 420 nm and the XenoCal BPT sensor measures the (uninsulated) Black Panel Temperature. Only annual or semi-annual calibrations are typically required due to the sensor's accurate calibration and long term stability.



220/220+ Specimen Holders and Cover Masks

Specimen holders with quick-clamp technology enable easy specimen preparation. Holders are available for specimens less than 3 mm, up to 10 mm thick, as well as appropriate cover masks for testing to various ISO and AATCC textile standards.



440 Specimen Holders

All specimen holders for the Xenotest® 220/220+ also work in the Xenotest 440 instrument. Additionally, three wider holders are available allowing greater flexibility for exposing various textiles, plastics, coatings, and automotive interior/exterior materials.



Atlas XenoTouch Add-ons for Xenotest 220+ and 440

Additional software modules are available to help to make daily lab work easier.

Add-on 1

Remote Control

Conveniently program the instrument remotely with security protection via access rights



Add-on 2

E-Mail Service

Receive important system information and error messages quickly and securely by E-mail



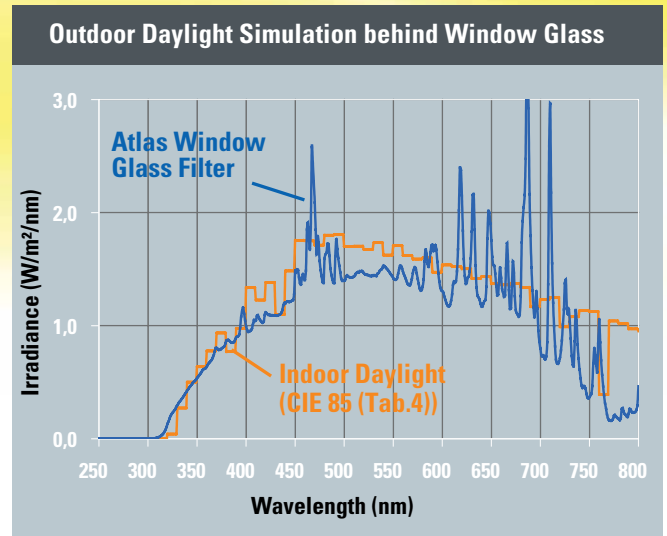
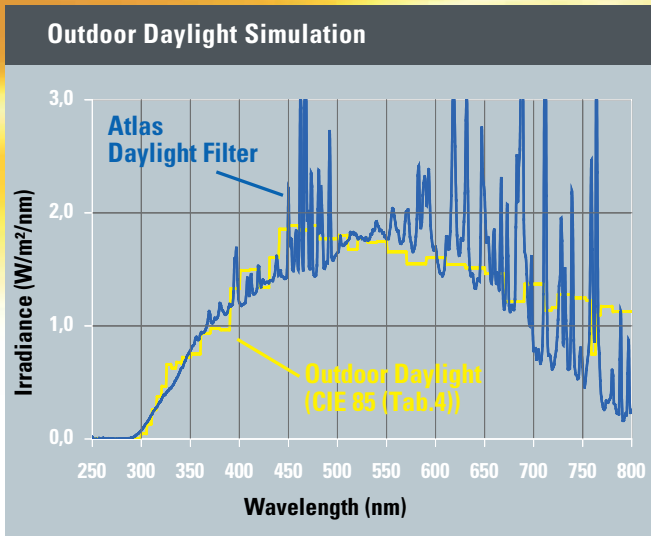
Add-on 3

Online Monitoring

Online access to instrument status reports via a web browser



OPTICAL COMPONENTS



Light According to Standards

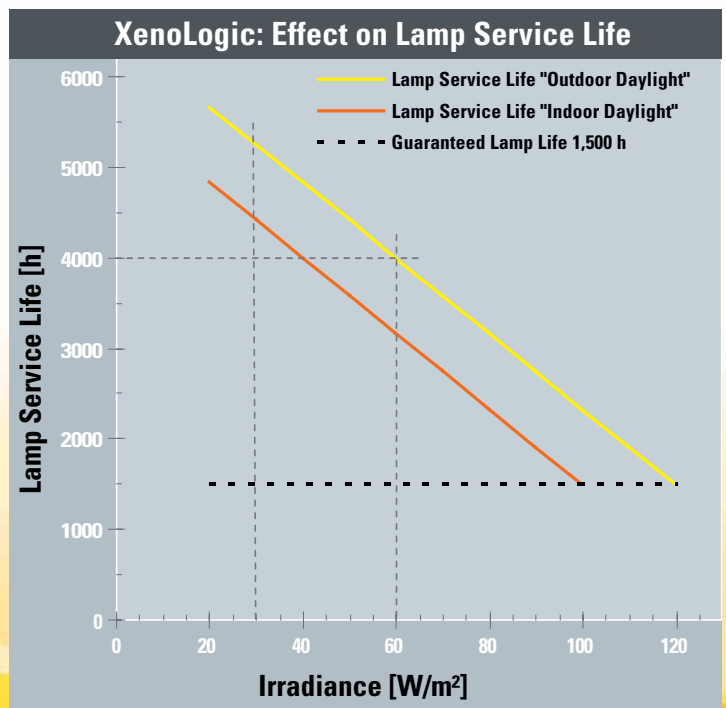
A variety of optical filter systems are available to simulate the full daylight spectrum, outdoors or behind window glass, as required by the applicable ISO, ASTM or AATCC xenon test methods.

All filter systems are non-aging and maintain the required spectrum over their lifetime. The outer cylinder UV-Special completes all optical filter systems except Right Light, which requires combination with outer cylinder Quartz.

XenoLOGIC Lamp Operating Technology

XenoLogic™, is Atlas' revolutionary new twin-lamp operating technology for extended lamp service life.

With XenoLogic™, two xenon lamps are synchronized continuously to operate at the lowest possible stress level, which allows for optimum light efficiency. With XenoLogic™ lamp operating technology, the two xenon lamps combined can operate over 4,000 hours at irradiances of 30-60 W/m^2 (300-400 nm).



TEMPERATURE, HUMIDITY AND SPECIMEN SPRAY

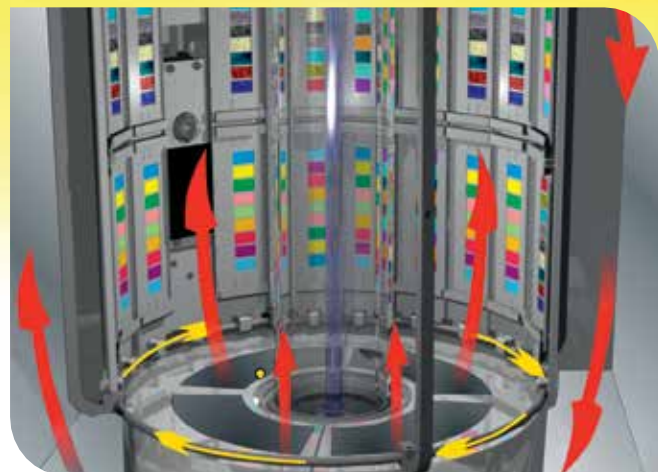
Humidity Control

Because water is a precious resource, Xenotest® humidifiers are optimized to reduce water consumption, necessary to meet test conditions.

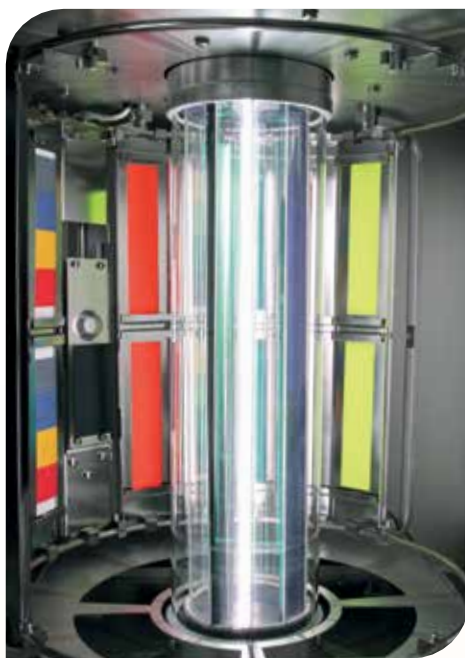
The extremely efficient ultrasonic humidifiers are linked to an integrated 60 liter water reservoir, enabling continuous operation over a period of 3 to 4 weeks*.

Additionally, the humidifier's design allows the speed and direction of the air flow inside the test chamber to operate as efficiently as possible, providing the highest uniformity throughout the exposure area.

(* under the conditions of standard ISO 105-B02)



Air Flow in Test Chamber



BST Control on Specimen Rack

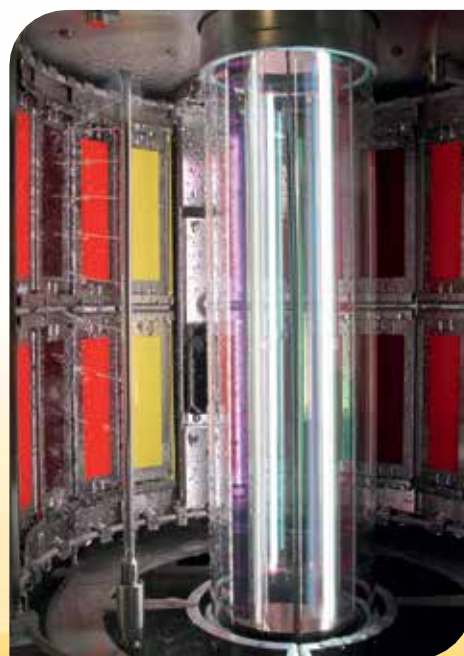
Temperature Control

Ambient and surface temperatures can have a significant impact on degradation and fading rates.

Xenotest chambers control BST directly on the specimen rack within $\pm 2^{\circ}\text{C}$. Both BST and CHT can be controlled simultaneously in all Xenotest instruments to achieve ideal test conditions (420 nm, BPT control option available).

Specimen Spray

The Xenotest 220 and 220+ instruments can be equipped with an optional specimen spray system to simulate the effects of rain. Specimen spray is standard in the Xenotest 440.



Integrated Specimen Spray System

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.

Technical Data

	220 / 220+	440
Air-cooled xenon lamps	2200 W (1)	2200 W (2)
Specimen rack capacity	2310 cm ²	2310 cm ²
Test positions	38	38/33/22/11
Specimen holder Standard	13.5 x 4.5 cm	13.5 x 4.5 cm
Specimen holder Standard-1B	- / -	28.5 x 7.5 cm
Specimen holder Standard-2B	- / -	14.0 x 7.5 cm
Specimen holder Standard-3B	- / -	9.0 x 7.5 cm
Light monitor (on-rack)	XENOSENSIV®	XENOSENSIV®
Irradiance		
W/m ²	300-400nm	30-50/25-75
W/m ² /nm	340nm	---- /0.25-0.70
W/m ² /nm	420nm	0.70-1.20/0.60-1.50
Temperature and Humidity		
BST (°C)	20-100	20-115
BPT (°C)	20-100	20-115
CHT (°C) max.	50/65	65
RH (%) during light cycle	20-95	20-95
Integrated water reservoir	60 liters	60 liters
Water consumption (humidifier)	approx. 0.12 l/h*	approx. 0.12 l/h*
Water consumption (spray)	approx. 0.7 l/min*	approx. 0.7 l/min*
Simultaneous		
BST and CHT control	automatic	automatic
Specimen spray	◇ / ◇	●
Parameter check for set values	● / ●	●
Serial interface	● / ●	●
Touch screen	- / ●	●
Memory card interface	- / ●	●
Ethernet interface + add-ons	- / ●	●
XenoLogic technology	- / -	●

Physical and Electrical Data

	220 / 220+	440
Width x Depth x Height	90 x 78 x 180 cm	90 x 78 x 180 cm
Weight	280 kg	290 kg
Electrical	230 V ±10%, 50/60 Hz	400 V ±10%, 50/60 Hz
Electrical Power	approx. 5 kVA	approx. 8 kVA

Optical Filters

	Application	220/220+	440
Right Light®	Weathering using Type I Daylight ASTM D7869, IEC 62788-7-2, ISO 4892-2, ASTM G155	- / ●	●
XENOCHROME® 300	Weathering using Type I/II Daylight ISO 105-B04/-B10 (A), ISO 4892-2, ISO 16474, ASTM G155	● / ●	●
XENOCHROME® 300 ext. IR	Weathering, extended IR PV 3929, ISO 105-B10 (C, D)	- / ●	●
XENOCHROME® 320	Lightfastness ISO 105-B02	● / ●	●
XENOCHROME® 320 ext. IR	Lightfastness, extended IR PV 1303, ISO 105-B06	- / -	●
TM16	Lightfastness AATCC TM16	● / ●	●

The control ranges depend on the ambient conditions, the instrument settings and optical filter system used.

- * under the conditions of standard ISO 105-B02
- Standard
 - ◇ Optional

