COMMERCIAL LAUNCH PACKAGE

Introducing INFINITY® UV Resistant*
Styrene Faced Foam Board

** UV Resistant package only applies to 50" and narrower sizes.*

INFINITY®

UV RESISTANT STYRENE-FACED FOAMBOARD

BENEFITS:

- UV Resistant Styrene Surface*
- Moisture Resistant
- Sanitizable Surface
- 2.5 Times the Density of Competing Foams
- 3D Cold-Bend Capability
- No Precleaning Needed
- Superior Cutting on Digital Cutters
- Manufactured in the USA

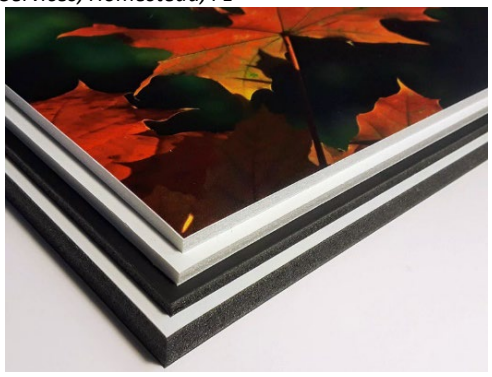
IDEAL FOR:

- POP Displays
- Exhibits & Kiosks
- Framing
- Signage
- Fabrication
- Digital & Screen Printing
- Digital & Knife Cutting
- Routing, Die Cutting & More!

CORE COLOR:
White and Black
LINER COLOR:
White and Black
GAUGES:
Min: 3mm
Max: 1”
SIZES:
Min: 16" x 20”
Max: 60" x 192”

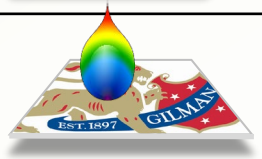
Custom sizes available

** UV Resistant package only applies to 50" and narrower sizes.*
Test Method: ASTM G154-16 Custom Cycle; Test Lab: Q-Lab Test Services, Homestead, FL

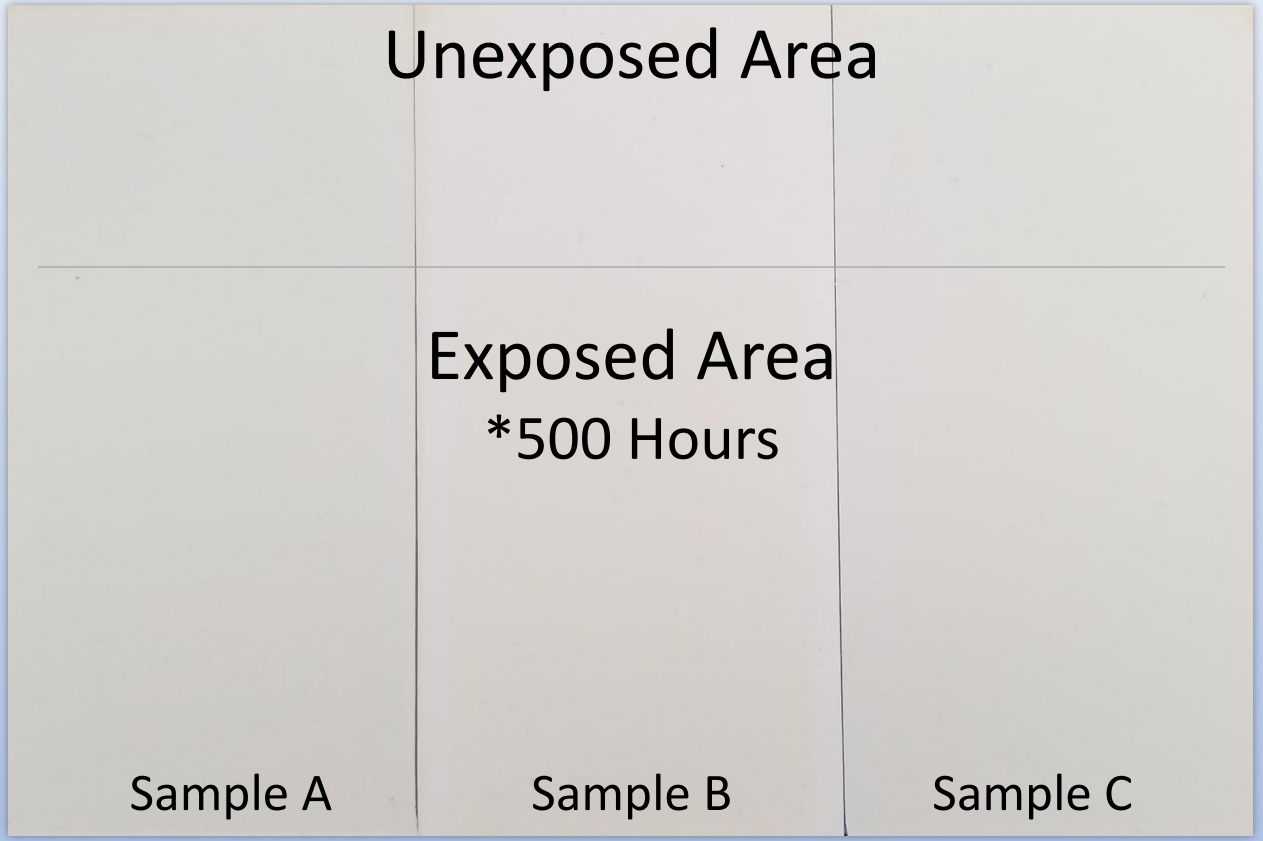




(860) 889-8444 • www.GilmanBrothers.com • Sales@GilmanBrothers.com

INFINITY® ADVANTAGES VS. COMPETITION

	UV Resistant Styrene Surface. **Test Method: ASTM G154-16 Custom Cycle Test Lab: Q-Lab Test Services* ** UV Resistant package only applies to 50" and narrower sizes.*
	22% less in weight (*results based on 3/16” 4’x8’) Reduced freight costs.
	Over 30% production time savings. Cuts cleanly with a drag knife vs routing… even up to ½” thickness!
	No Pre-Cleaning required – countless production hours saved.
	Smoothest surface. Ease in profiling, less ink usage, less production cost! Ability to laminate accessory materials.
	Pooled & Drop Ship Programs.
	Run to size sheets: 16”x22” to 60”x192” and everything in between!
	Gauges: 3mm to 1” Available in 3mm, 3/16”, 1/4”, 3/8”, 1/2”, 3/4”, and 1” 3mm can replace PVC!
	Fold and ship into standard boxes. Can be cold-bent and folded to fit into standard UPS/FEDEX box dimensions.

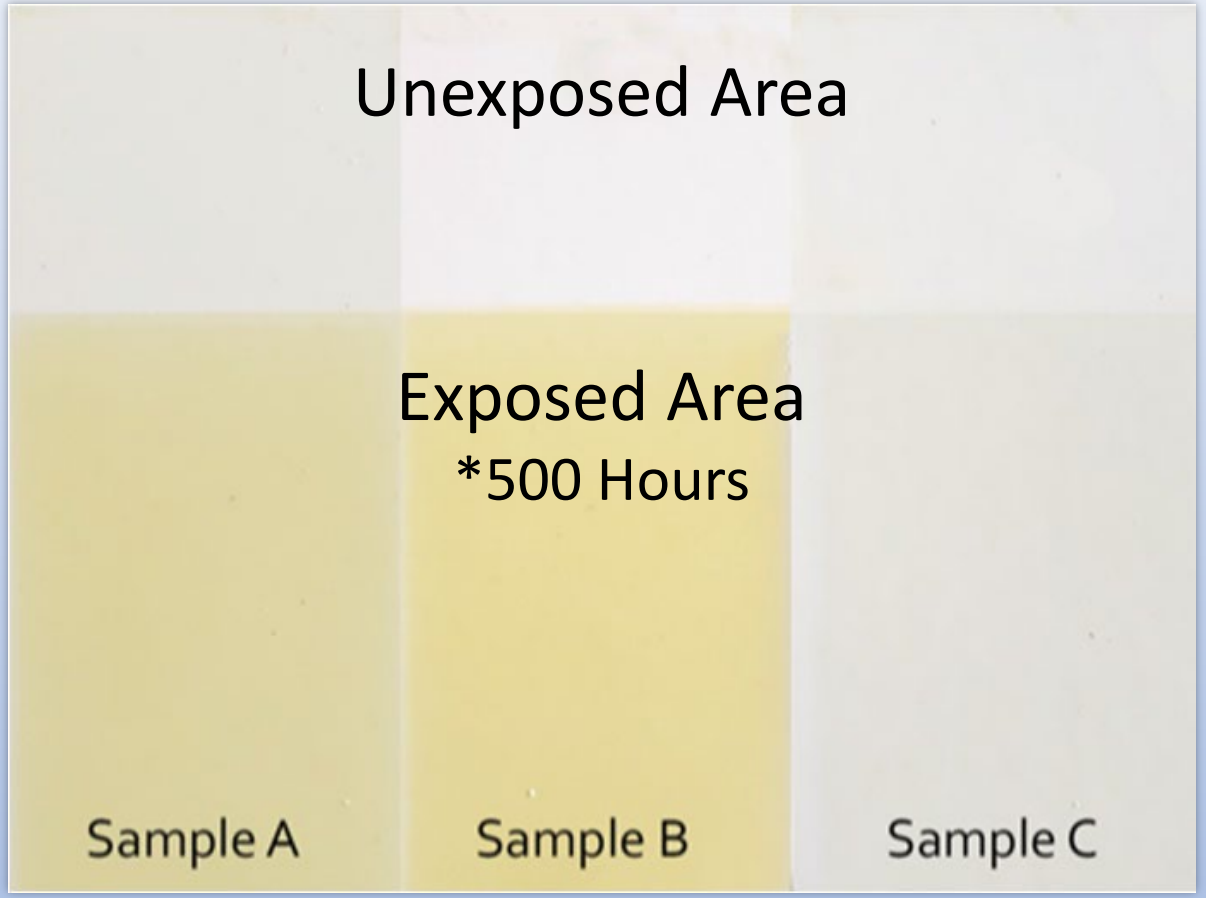
Accelerated Weathering Results – Fluorescent Cool White Lamps



COMPETITIVE STYRENE-FACED FOAMBOARD	ORIGINAL INFINITY®	UV RESISTANT INFINITY®

- Test Method: ASTM G154-16 Custom Cycle
- Test Lab: Q-Lab Test Services, Homestead, FL
- F40T12 Fluorescent Cool White Lamps 20 kLux, continuous light at 40° C

Accelerated Weathering Results - UVA-351 Lamps



COMPETITIVE STYRENE-FACED FOAMBOARD

ORIGINAL INFINITY®

UV RESISTANT INFINITY®

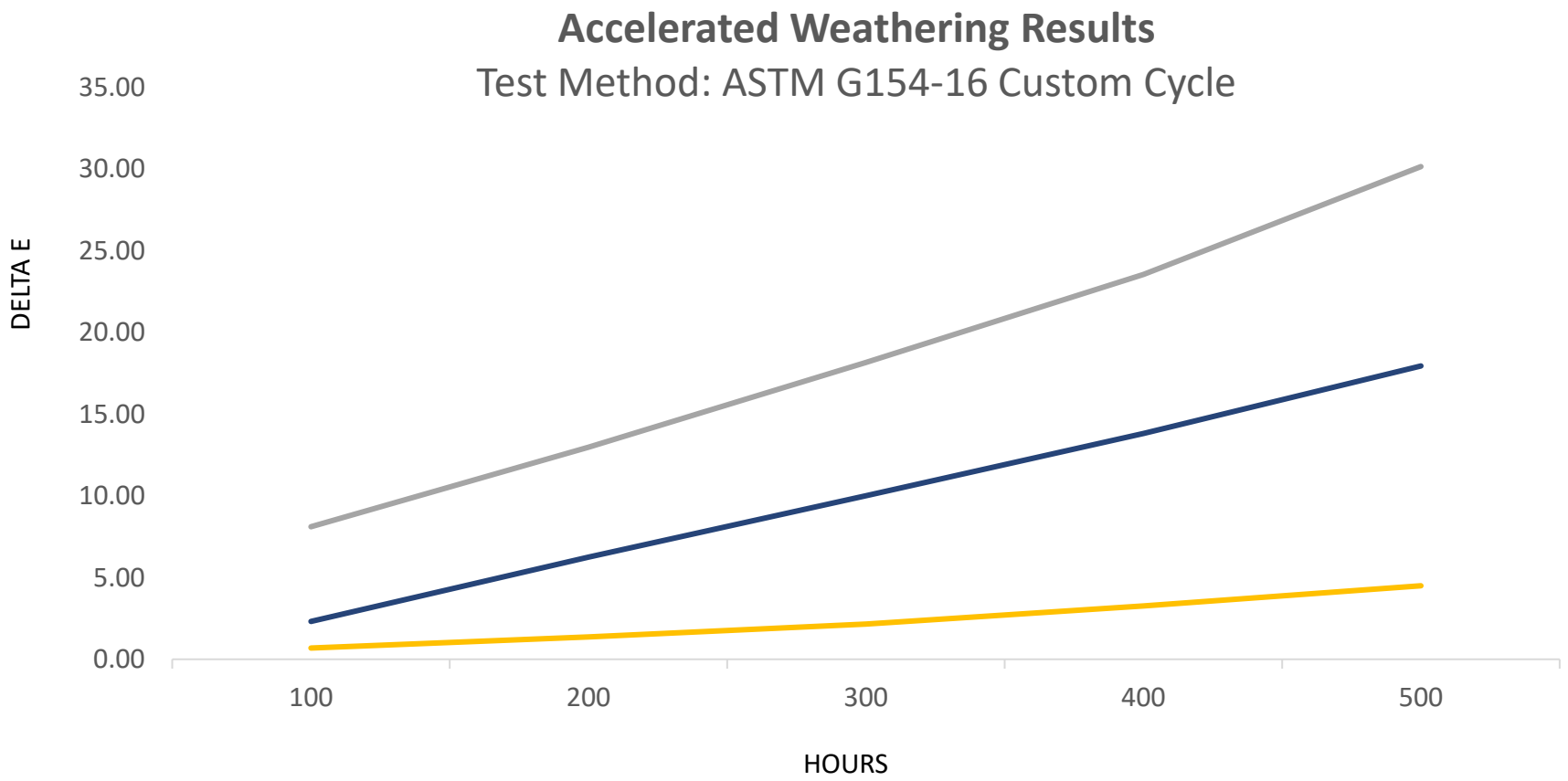
- Test Method: ASTM G154-16 Custom Cycle
- Test Lab: Q-Lab Test Services, Homestead, FL
- UVA-351 lamps, 0.76 W/m^2, continuous light @ 50°C

INFINITY® UVA-351 Lamp Comparisons

HRS	Competitive Styrene Faced Foamboard	Original INFINITY®	UV Resistant INFINITY®
100	2.33	8.12	0.70
200	6.26	12.99	1.38
300	10.02	18.17	2.16
400	13.82	23.56	3.28
500	17.97	30.16	4.51

*Delta E results.

- **Competitive Styrene Faced Board** - Sample A
- **Original INFINITY®** - Sample B
- **UV Resistant INFINITY®** - Sample C



Q-LAB TEST CERTIFICATES

Q-LAB

Q-Lab Test Services
1005 S.W. 18 Avenue
P. O. Box 349490
Homestead, FL 33034

TEST CERTIFICATE
Laboratory Testing
25 March 2019

Test Number:	*GBGC-0001*
Company:	*The Gilman Brothers Company*
Address:	*38 Gilman Rd*
	Gilman, CT 06336
No. of Specimens:	*21 foam board panels*
Specimen Identification:	*1,a, 1,b, 1,c, 2,a, 2,b, 2,c, 3,a, 3,b, 3,c, 4,a, 4,b, 4,c, 5,a, 5,b, 5,c, 6,a, 6,b, 6,c, 7,a, 7,b, 7,c*
Test Method:	*ASTM G154-16 Custom Cycle*
Deviations:	*None*
Exposure Date:	*22 February 2019*
Completion Date:	*25 March 2019*
Exposure Duration:	*500 Hours*
Exposure Type:	*Accelerated weathering*
	F40T12 Cool White lamps, 20 kLux, continuous light @ 40°C
Test Equipment Used:	*Tester Model QUV/se*
By:	Susan C. Manch Susan Manchester Laboratory Technician
Approved By:	Thomas M. Allie Thomas Allie Laboratory Manager

Q-LAB

Q-Lab Test Services
1005 S.W. 18 Avenue
P. O. Box 349490
Homestead, FL 33034

TEST CERTIFICATE
Laboratory Testing
25 March 2019

Test Number:	*GBGC-0002*
Company:	*The Gilman Brothers Company*
Address:	*38 Gilman Rd*
	Gilman, CT 06336
No. of Specimens:	*21 foam board panels*
Specimen Identification:	*1,a, 1,b, 1,c, 2,a, 2,b, 2,c, 3,a, 3,b, 3,c, 4,a, 4,b, 4,c, 5,a, 5,b, 5,c, 6,a, 6,b, 6,c, 7,a, 7,b, 7,c*
Test Method:	*ASTM G154-16 Custom Cycle*
Deviations:	*None*
Exposure Date:	*22 February 2019*
Completion Date:	*25 March 2019*
Exposure Duration:	*500 Hours*
Exposure Type	*Accelerated weathering*
	UVA-351 lamps, 0.76 W/m², continuous light @ 50°C
Test Equipment Used:	*Tester Model QUV/se*
By:	Susan C. Manch Susan Manchester Laboratory Technician
Approved By:	Thomas M. Allie Thomas Allie Laboratory Manager

Test GBGC-1

GBGC-1: Test used fluorescent cool white lamps simulating an office/warehouse environment.

TECHNICAL BULLETIN LU-0823

QUV/cw
Cool White Photostability Tester

The QUV®/cw photostability tester provides a standard cool white fluorescent test chamber that meets ANSI, ASTM and ISO test methods for indoor photostability testing.

Many products intended for home, office, and commercial environments have never been adequately tested for resistance to indoor lighting. Photodegradation from indoor lighting can cause unexpected product failures that range from the aesthetic to the hazardous. Common indoor light damage includes fade and color change of pigments and dyes, yellowing of plastics and photodegradation of pharmaceutical products.

The QUV/cw Complies With Industry Test Methods

Several industries currently have test methods that specify the use of cool white lamps for indoor photostability testing, while others are working to take steps toward standardization. Since each industry is unique, a brief synopsis of common industries concerned with indoor light stability testing is given below.

Business Imaging. *ASTM F1945, Practice For Determining the Lightfastness of Ink Jet Prints Exposed to Indoor Fluorescent Lighting*, specifies a cool white fluorescent test to simulate indoor office lighting.

ASTM F767, Test Method for Image Stability of Chemical Carbonless Paper to Light and *ASTM F1721, Practice for Determining Stability of Direct Thermal Imaging Products* have been updated to allow the use of standard cool white fluorescent test chambers, such as the QUV/cw.

Color Photography. *ANSI IT9.9 Methods for Measuring Color Photographic Images* specifies a cool white fluorescent lamp test. Images are exposed to 450 lux for 12 hours per day. This test, and the alternative xenon arc light tests (for through the window daylight), are intended to provide accelerated light stability data to address a variety of indoor lighting environments.

Digital Inks. The digital ink jet industry is developing an ISO specification for light stability testing of digital hardcopy images. This document is based upon ANSI IT9.9 for color photographic images and also specifies a cool white fluorescent test with a test cycle of 450 lux for 12 hours a day.

Plastics. *ASTM D4674 Color Stability of Plastics* has been updated to include a cool white fluorescent light test. Method III of D4674 consists of exposure to cool white fluorescent lamps at a temperature of 50˚C. This provides an excellent accelerated simulation of indoor office/commercial environments where cool whites are the main illuminant and natural sunlight is not a significant issue. D4674 is designed for testing plastics; however, it has been widely borrowed by other industries for light stability testing of inks, packaging, artists' materials and other indoor products.

Lithographic Inks and Packaging. *ASTM D3424 Lightfastness of Printed Matter* is used by the lithographic printing inks industry for color stability and fade testing of traditional printing inks; it references ASTM D4674 for cool white fluorescent testing of inks.

The packaging industry has used ASTM D3424 & D4674 test methods for their light stability testing needs.

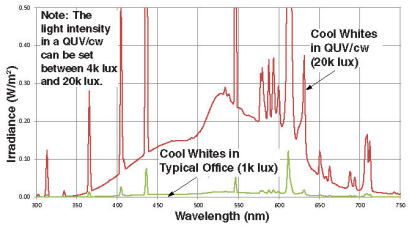
Pharmaceuticals. Pharmaceutical manufacturers follow the *ICH Guidelines for the Photostability Testing of New Drug Substances and Products* for drug light stability testing. Both cool white and xenon arc exposures are specified in the ICH Guidelines.

Standardized Cool White Photostability Test Equipment

Cool white fluorescent testing has typically been conducted using "light box" devices that do not properly control important test parameters, such as temperature and irradiance (light intensity). Inconsistencies in the construction and operation of these devices make it difficult to produce accurate, repeatable and reproducible test results.

A standardized, affordable and easy-to-use tester is available with the QUV/cw. By providing a controlled environment, the QUV/cw effectively reproduces and accelerates indoor lighting conditions encountered in office and commercial environments, as well as retail display lighting.

Spectral Power Distribution of Cool White Lamps in a QUV/cw versus a Typical Office



The cool white fluorescent lamp spectrum is representative of visible light encountered in indoor commercial or office environments.

The QUV/cw is an adaptation of the QUV accelerated weathering tester, which uses fluorescent UV lamps to test outdoor product durability. The QUV/cw has the same features as the QUV/se, but is modified specifically to use fluorescent cool white lamps for accelerated indoor product durability testing.

Why Use the QUV/cw with Cool White Fluorescent Lamps?

Control of Irradiance. A photostability tester must control irradiance if it is to achieve repeatable and reproducible results. Changes in light intensity may affect the speed of material degradation, while changes in wavelength may affect both speed and the type of material degradation. The SOLAR EYE® irradiance control allows the user to choose the desired level of irradiance. In the QUV/cw, you can increase cool white lamp intensity by up to 20 times the typical office illuminance of 1k lux. The illuminance range is 4k-20k lux (see the SPD chart above). With the SOLAR EYE feedback loop system, the irradiance is continuously monitored and precisely maintained, automatically.

Control of Temperature. Photochemical reactions are not usually temperature sensitive. However, the rate of subsequent reactions are temperature dependent. Consequently, it is important to control the test temperature. Many researchers prefer to match the maximum temperature the material will be exposed to in a service environment. In the QUV/cw, the temperature can be set at any point between 35˚C - 80˚C, depending on irradiance and ambient room temperature.

Programmable. The QUV/cw can be programmed to perform various test cycles (e.g. 100% light, alternating light & dark cycles, etc.). This flexibility allows the user to better simulate end use applications where dark periods may be encountered.

Calibratable. To ensure the accuracy of any irradiance control system, it is necessary to periodically calibrate the sensors. The QUV tester's patented AUTOCAL® system uses the CR10 radiometer to measure the light intensity of the cool white lamps and electronically transfer the calibration from the radiometer to the SOLAR EYE controller. Calibrations with the CR10/cw are traceable to the U.S. National Institute of Standards and Technology.

Compliance. The QUV/cw Photostability Tester provides a standard cool white fluorescent test chamber that allows you to conduct reproducible and repeatable tests in accordance to ANSI, ASTM and ISO test methods.

Q-Lab Corporation www.q-lab.com

Q-Lab Headquarters
Westlake, OH USA
Tel: +1-440-835-8700
info@q-lab.com

Q-Lab Europe, Ltd.
Bolton, England
Tel: +44-1204-861616
info.eu@q-lab.com

Q-Lab Deutschland GmbH
Saarbrücken, Germany
Tel: +49-681-857470
vertrieb@q-lab.com

Q-Lab Florida
Homestead, FL USA
Tel: +1-305-245-5600
q-lab@q-lab.com

Q-Lab Arizona
Buckeye, AZ USA
Tel: +1-623-386-5140
q-lab@q-lab.com

Q-Lab China 中国代表处
Shanghai, China 中国上海
电话：+86-21-5879-7970
info.cn@q-lab.com

GBGC-2: Test used UVA-351 lamps simulating sunlight passing through a window.

TECHNICAL BULLETIN LU-8160

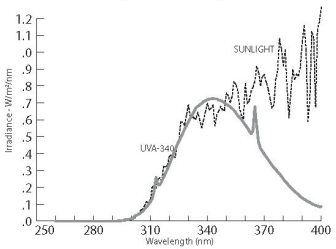
A Choice of Lamps for the QUV Accelerated Weathering Tester

Your exposure application determines which type of UV lamps should be used. All of the QUV® accelerated weathering tester's lamps emit mainly ultraviolet rather than visible or infrared light. All are electrically equivalent to an ordinary 40-watt fluorescent. However, each lamp type differs in the total amount of UV energy emitted and in its wavelength spectrum. Fluorescent UV lamps are usually categorized as UVA or UVB lamps, depending on the region into which most of their output falls.

UVA Lamps

UVA lamps are especially useful for comparing different types of polymers. Because UVA lamps do not have any UV output below the normal solar cutoff of 295 nm, they usually do not degrade materials as fast as UVB lamps. However, they usually provide better correlation with actual outdoor weathering.

UVA-340 Lamps vs. Sunlight



UVA-340 lamps are the best available simulation of sunlight in the critical short-wave UV region.

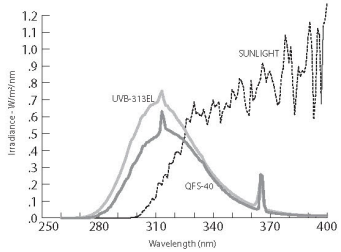
UVA-340. The UVA-340 provides the best possible simulation of sunlight in the critical short wavelength region from 365 nm down to the solar cutoff of 295 nm. Its peak emission is at 340 nm. UVA-340 lamps are especially useful for comparison tests of different formulations.

UVA-351. The UVA-351 simulates the UV portion of sunlight filtered through window glass. It is most useful for interior applications, testing of some inks and for polymer damage that can occur in an environment near a window.

UVB Lamps

UV-B radiation includes the shortest wavelengths of sunlight found on the earth's surface. Consequently, fluorescent UVB lamps are widely used in QC and R&D for fast, cost-effective results. Because all UVB lamps emit unnatural, short-wavelengths of UV that are below the solar cutoff of 295 nm, anomalous results can occur. Two types of UVB lamps are available. They emit different amounts of total energy, but produce the same UV wavelengths in the same relative proportions.

UVB Lamps vs. Sunlight



UVB lamps produce mostly short-wave UV for maximum acceleration.

UVB-313EL. The UVB-313EL gives fast results and it is particularly useful for QC and R&D applications and for durable materials. Compared to the QFS-40 lamp, the UVB-313EL produces substantially higher UV output, faster test results and is very stable.

The UVB-313EL replaces the UVB-313, and offers more output and stability. The SOLAR EYE® irradiance controller can be used to decrease the output of the UVB-313EL to mimic the irradiance of a QFS-40. This allows longer lamp life and minimizes lamp replacement costs.

QFS-40. Also known as FS-40 or F40 UVB, this is the original QUV tester lamp. FS-40 lamps have been used for many years, and are still specified in many automotive test methods, particularly for coatings. QFS-40 should only be used in the QUV/basic model.

Other Manufacturers. Other UV lamps may be available from other manufacturers. These are often intended to be copies of Q-Lab's fluorescent lamps. Although the names may be the same (e.g., UVB-313 or UVA-340), other manufacturers' lamps may have very different irradiance, spectral power distribution or aging characteristics. Consequently, they may not give the same test results. For best results, use only Q-Lab lamps in your QUV weathering tester.

General Lamp Recommendations

UVA-340	Especially useful for comparison tests of different formulations. Recommended for correlation with outdoor results for most plastics, textiles, coatings, pigments and UV stabilizers.
UVB-313EL	Best for QC and R&D applications. Recommended for durable materials such as roofing, some exterior coatings etc.
QFS-40 (F40 UVB)	Automotive exterior coatings specifications.
UVA-351	Most useful for UV "sunlight through glass" simulations. Recommended for some automotive interiors, textiles and inks.

IMPORTANT: DO NOT MIX DIFFERENT TYPES OF LAMPS
Mixing different types of lamps in one QUV will produce major inconsistencies in the light falling on the samples, and may produce samples with "stripes" of greater and lesser degradation.

SOLAR EYE Irradiance Control

Models QUV/se and the QUV/spray are equipped with SOLAR EYE Irradiance Control. The controller continuously monitors the UV intensity using four sensors at the same plane. The feed-back loop systems allows it to automatically compensate for lamp aging or any other variability by adjusting power to the lamps. SOLAR EYE control allows better reproducibility and repeatability than manual irradiance control systems used in old-style QUV machines and the QUV/basic.

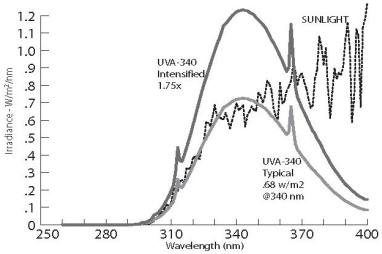
High Irradiance

With push-button irradiance setting, you can operate the SOLAR EYE control at various intensity levels for different applications and still maintain realistic test conditions. For example, with the UVA-340 lamps you could set the SOLAR EYE controller to simulate the following sunlight conditions:

Typical: For quick results without sacrificing correlation. With UVA 340 lamps, this irradiance level is equivalent to noon summer sunlight.

Intensified (1.75x): 75% higher than noon summer sunlight for fast test results.

UVA-340 Lamp Intensified 1.75x & Typical UVA-340 Irradiance



Q-Lab Corporation www.q-lab.com

Q-Lab Headquarters
Westlake, OH USA
Tel: +1-440-835-8700
info@q-lab.com

Q-Lab Florida
Homestead, FL USA
Tel: +1-305-245-5600
q-lab@q-lab.com

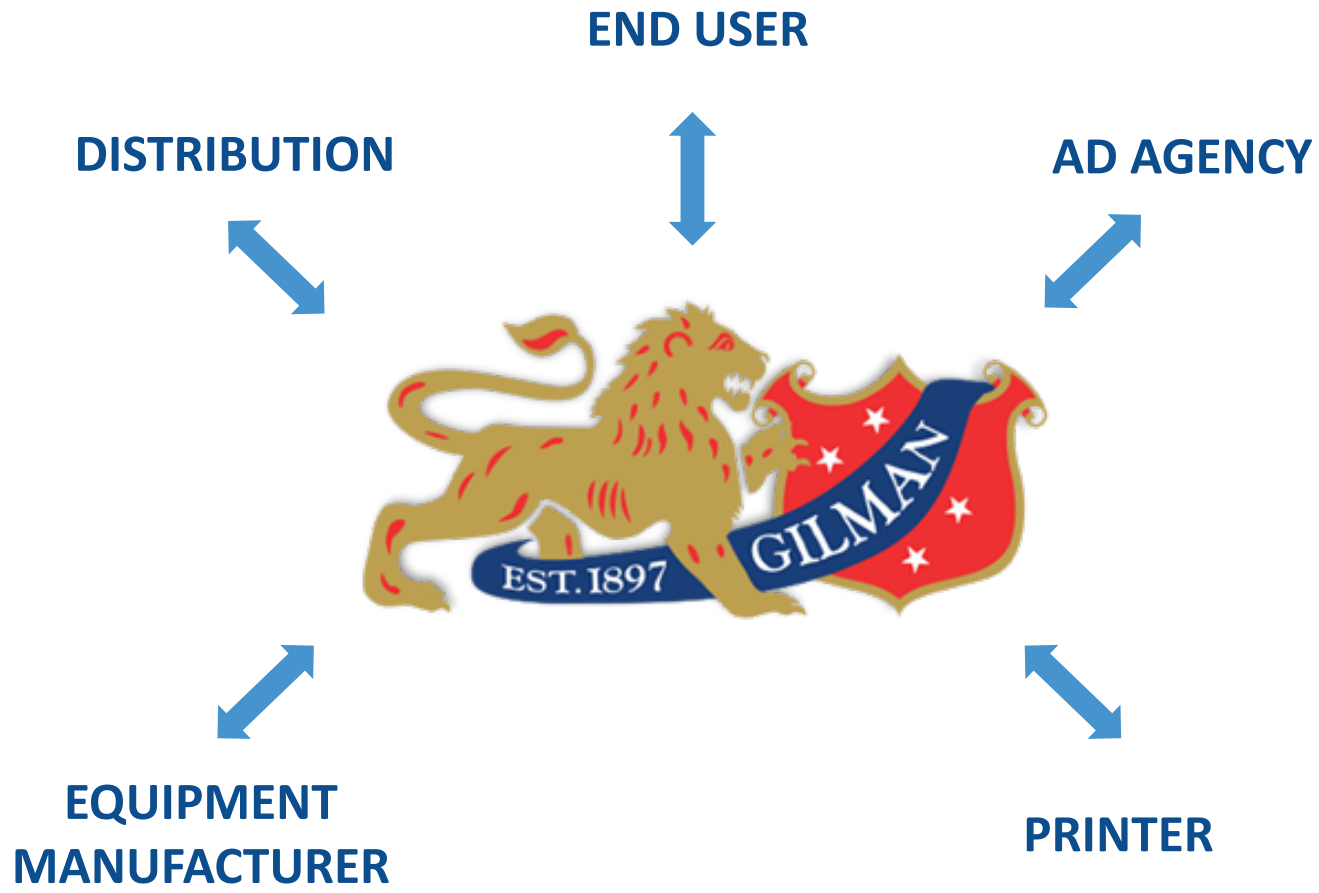
Q-Lab Europe, Ltd.
Bolton, England
Tel: +44-1204-861616
info.eu@q-lab.com

Q-Lab Arizona
Buckeye, AZ USA
Tel: +1-623-386-5140
q-lab@q-lab.com

Q-Lab Deutschland, GmbH
Saarbrücken, Germany
Tel: +49-681-857470
vertrieb@q-lab.com

Q-Lab China 中国代表处
Shanghai, China 中国上海
电话：+86-21-5879-7970
info.cn@q-lab.com

YOU *are our* WHY!



Continuing to Drive Technology & Innovation