



The QUV is the world's most widely used weathering tester.



Weathering Testers

Reproducible and reliable weathering data can be generated in just a few weeks or months using the QUV Accelerated Weathering Tester. Its short wavelength ultraviolet light and moisture cycles realistically simulate the damaging effects of sunlight, dew and rain.

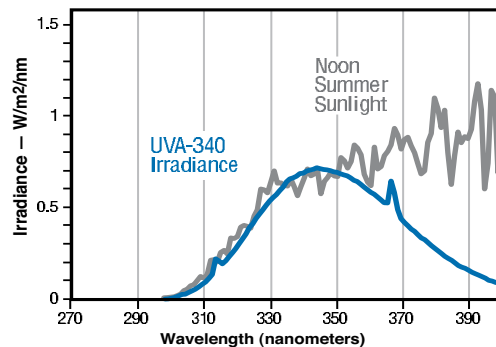
QUV Features

- Solar Eye® Irradiance Control
- Condensation System Uses Tap Water
- Quick & Easy Calibration with AutoCal
- Small Footprint / Large Capacity
- Ethernet Connection
- User Serviceable
- Self Diagnostics
- Automatic Shut-down Timer

Ultraviolet Sunlight

The QUV uses fluorescent UV lamps to reproduce the damaging effects of sunlight. Although ultraviolet (UV) light makes up only about 5% of sunlight, it is responsible for most of the sunlight damage to polymer materials exposed outdoors. Therefore, it is only necessary to reproduce the short wavelength UV for testing polymer degradation.

Several types of UV lamps are available for the QUV. Each lamp type differs in the total amount of UV energy emitted and in wavelength spectrum. For example, UVA-340 offers the best correlation to outdoor exposures because it is the best simulation of sunlight from 295 nm to 365 nm. The UVB-313 offers maximum acceleration by utilizing short-wave UV that is more severe than normally found on the earth's surface. The exposure application dictates which lamp type should be used. (Request LU-8016 Choice of Lamps for more information.)



UVA-340 is the best available simulation of sunlight from 365 nm to 295 nm (solar cut-on).

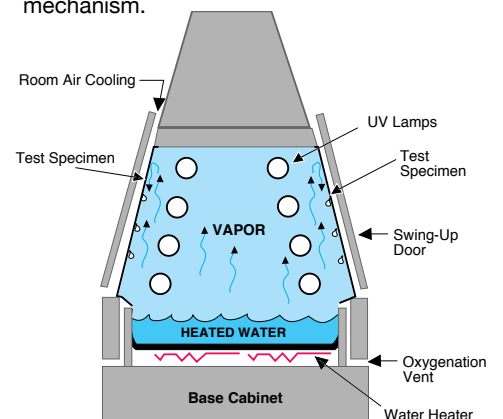
Moisture

The user can program the QUV to produce cycles of wetness alternating with UV, a situation that is identical to natural weathering.

Studies have shown that condensation in the form of dew is responsible for most outdoor wetness. Dew is more damaging than rain because it remains on the material for a long time, allowing significant moisture absorption.

The QUV's long, hot condensation cycle reproduces the outdoor moisture phenomenon far better than other methods such as water spray, immersion, or high humidity.

To simulate damage caused by rain, such as thermal shock or mechanical erosion, the QUV can be fitted with a water spray system in addition to the standard condensation mechanism.



The QUV uses a unique condensation mechanism to reproduce outdoor moisture.

Temperature

The destructive effects of light and moisture exposures are typically accelerated when temperature is increased. The QUV provides accurate control of temperature and provides a means to elevate the temperature to produce acceleration.

Irradiance Control & Calibration

In the QUV, control of irradiance is simplified by the inherent spectral stability of its fluorescent UV Lamps. All light sources decline in output as they age. However, unlike most other lamp types, the QUV's fluorescent lamp spectra does not change over time. This enhances the reproducibility of test results and is a major advantage of testing with QUV.

The Solar Eye Irradiance 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. The Solar Eye allows better reproducibility and repeatability than manual irradiance control systems used in the old-style QUVs and in the QUV/basic.

In addition to its other advantages, the patented Solar Eye system allows for easy calibration and traceability for ISO compliance.



Calibrations with the CR10 Radiometer take only minutes and comply with ISO 9000 requirements.



Test specimens are mounted in convenient snap-ring holders.

QUV Models

Model QUV/se features the Solar Eye Irradiance Controller for precise control of UV light intensity. This assures more reproducible test results and allows compliance with ISO calibration requirements. With Solar Eye, you can increase the irradiance to 1.75 times noon summer sunlight.

Model QUV/spray is the same as the QUV/se, except it also is equipped with direct water spray for thermal shock and mechanical erosion.

Model QUV/basic provides UV light and moisture testing, but does not feature control of light intensity. The QUV/basic is the ideal choice for labs where economy is critical.

Model QUV/cw is similar to the QUV/se, but is modified to use fluorescent cool white lamps for reproducing indoor commercial and retail environments.

QUV Meets The Standards

The QUV, the world's most widely used weathering tester, complies with numerous standard test methods around the world. Below is a partial list.

General

- ASTM G151
- ASTM G154
- JIS D 0205
- SAE J2020

Coatings

- ASTM D3794
- ASTM D4587
- FED-STD-141B
- GM 9125P
- JIS K 5600-7-8
- ISO 11507
- ISO 20340
- M598-1990
- NACE TM-01-84
- NISSAN M0007
- PrEN 927-6

Adhesives

- ASTM C1184
- ASTM C1442
- ASTM D904
- ASTM D5215
- UNE 104-281-88

Plastics

- ANSI C57.12.28
- ANSI, A14.5
- ASTM D4329
- ASTM D4674
- ASTM D5208
- ASTM D6662
- DIN 53 384
- ISO 4892-3
- JIS K 3750
- UNE 53.104

Roofing

- ANSI/RMA IPR-1-1990
- ASTM D4799
- ASTM D4811
- ASTM D3105
- ASTM D4434
- ASTM D5019
- BS 903: Part A54
- CGSB-37.54-M
- DIN EN 534

Printing Inks/Artists' Materials

- ASTM D3424
- ASTM F1945

Textiles

- AATCC TM 186
- ACFFA Guideline

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