



QUV Accelerated Weathering Tester

QUV Overview

Sunlight and moisture cause millions of dollars of material damage every year. The QUV® accelerated weathering tester tests materials by exposing them to alternating cycles of UV light and moisture at controlled, elevated temperatures. In a few days or weeks, the QUV tester can reproduce the damage that occurs over months or years outdoors. With thousands of testers in service worldwide, the QUV tester is the world's most widely used weathering tester.

Features

QUV testers are available in four different models: QUV/basic, QUV/se, QUV/spray, and QUV/cw. Each air-cooled tester featured Q-Lab's renowned reliability and ease of maintenance. All testers have standard datalogging via ethernet and/or USB, a variety of standard sample holders, automatic fault recognition and alarms, automatic shut-down timer, and a remarkably simple user interface available in five languages.

	QUV/basic	QUV/se	QUV/spray	QUV/cw
Specimen Capacity (75 x 150 mm)	50	48	48	48
Specimen Orientation	75° (measured from horizontal)			
UV Fluorescent Lamps - 40W	Quantity: 8 (T12 x 121 cm long)			
SOLAR EYE Irradiance Control (340 nm)	—	●	●	●
Irradiance in Accordance with ISO 17025	—	●	●	●
Water Spray	—	—	●	—
Condensation	●	●	●	● ¹
Stackable with Optional Space Saver Frame²	●	●	●	●

¹ The QUV/cw model is able to perform condensation cycles; however, this is not usually applicable for testing indoor materials.

² See LU-0820 for more information on Space Saver Frames.

Lamps & Irradiance Control

The SOLAR EYE® irradiance controller (used in all models except QUV/basic) continuously monitors and precisely maintains irradiance by adjusting power to the lamps. This compensates for variations such as lot-to-lot differences in lamps, ambient temperature changes and lamp aging. Irradiance control is very important because changes in intensity may affect both speed and type of material degradation. Note: the QUV/basic model relies on lamp rotation to approximate controlled irradiance levels.

Models with the SOLAR EYE irradiance controller feature programmable irradiance set-points. For example, with UVA-340 lamps, an irradiance of 0.73 W/m²@340nm is a good match with noon summer sunlight. For faster results, the QUV tester can operate at an irradiance that is double that of noon summer sunlight. See below for maximum and some common irradiance set points, based upon different lamp types. See LU-8160 for more information about choosing lamps for your application.

	UVA-340 & UVA-351	UVB-313EL	QFS-40	Cool White
Common Irradiance Set Points¹ W/(m²-nm) or LUX	0.89	0.80	0.48	6,000
Maximum Irradiance Set Points¹ W/(m²-nm) or LUX	1.55	1.23	0.86	20,000
Lamp Life¹ at Common Irradiance Set Points (hours)	8,000	8,000	8,000	8,000

¹ Values shown are only for testers equipped with SOLAR EYE irradiance control. QUV/basic lamp life warranted for 1600 hours.

ISO Calibrations

SOLAR EYE irradiance controller calibrations with the UC10 Universal Calibrator system through its patented AUTOCAL® system are traceable to the U.S. National Institute of Standards and Technology and comply with ISO 17025 requirements. Each UC10/UV Smart Sensor is set at the factory to measure both UVA and UVB lamps. A separate Smart Sensor is required for cool white lamps.

To ensure ISO compliance, the UC10 Smart Sensor must be replaced or recalibrated every year. Q-Lab's Calibration Labs are ISO 17025 accredited.



QUV Tester Operating Specifications:

Models	QUV/basic	QUV/se	QUV/spray	QUV/cw
Black Panel Temp (°C) Light Cycle Temp. ¹ Condensation Cycle Temp.	45-80 40-60	45-80 40-60	45-80 40-60	35-80 — ²
Specimen Exposure Area	20 x 50 cm (2x front side) 20 x 108 cm (1x rear side) 4160 cm ² total	20 x 50 cm (2x each side) 4000 cm ² total	20 x 50 cm (2x each side) 4000 cm ² total	20 x 50 cm (2x each side) 4000 cm ² total
Specimen Capacity³	50 Specimens (75 x 150 mm)	48 Specimens (75 x 150 mm)	48 Specimens (75 x 150 mm)	48 Specimens (75 x 150 mm)
Inlet Water Pressure	0.2-5.5 bar (2-80 psi)	0.2-5.5 bar (2-80 psi)	2.8-5.5 bar (40-80 psi) ⁴	0.2-5.5 bar (2-80 psi)
Inlet Water Purity⁵	Tap Water	Tap Water	> 200 kΩ·cm < 5 μS/cm < 2.5 ppm TDS 6-8 pH	— ²
Water Consumption⁶ Condensation Spray	8 liters/day —	8 liters/day —	8 liters/day 7 liters/minute	— ² —
External Dimensions (w x h x d)	137 x 135 x 53 cm (54 x 53 x 21 in)			
Weight⁷	136 kg (300 lbs)			
Electrical Requirements⁸	120V ± 10%, 1-Φ, 60 Hz, 14A 230V ± 10%, 1-Φ, 50/60 Hz, 7A	120V ± 10%, 1-Φ, 60 Hz, 16A 230V ± 10%, 1-Φ, 50/60 Hz, 8A	120V ± 10%, 1-Φ, 60 Hz, 16A 230V ± 10%, 1-Φ, 50/60 Hz, 8A	120V ± 10%, 1-Φ, 60 Hz, 16A 230V ± 10%, 1-Φ, 50/60 Hz, 8A

1 Minimum and maximum black panel temperatures are dependent on irradiance settings and ambient temperatures.

2 The QUV/cw model is able to perform condensation cycles; however, this is not usually applicable for testing indoor materials.

3 Other specimen sizes and shapes (including three-dimensional specimens) are readily accommodated in standard or custom specimen holders (see LU-8001).

4 Optional booster pump (X-10570-K) is available.

5 Water purity requirements can be met by most reverse osmosis, deionization, or distillation systems.

6 Water consumption values are dependant upon test and lab conditions. Values shown are maximum for many common standards. To reduce water consumption, consider an optional water repurification system (see LW-6048 for more information).

7 Actual shipping weights will be higher and depend upon whether the shipment is domestic, ocean, or air.

8 Transformer kits available for 100V (part number V-149-K-INST) or 200V (part number V-149.1-K-INST) operation.

Warranty

The QUV accelerated weathering tester is guaranteed against defects in workmanship or materials for one year. Liability is limited to replacing or repairing any part or parts which are defective in materials or workmanship and are returned to our factory, shipping costs prepaid. Liability in all events is limited to the purchase price paid. Damage due to accident or abuse is not covered. Labor and travel costs are not covered. Q-Lab Corporation makes no other warranties, including implied warranties of merchantability or fitness for a particular purpose, except as may be expressly provided by Q-Lab Corporation in writing. Q-Lab Corporation shall not be liable for any incidental, consequential, special, or contingent damages arising out of the sale or use of any product.

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