

Q-SUN Xe-1-W

Xenon Test Chamber with Temperature-Controlled Water Immersion

The Q-SUN® Xe-1-W xenon test chamber offers precision temperature-controlled water immersion with integral water repurification in a xenon-arc tester. It is now possible to fully submerge test specimens in water while they are exposed to full-spectrum sunlight. This complies with immersion conditions found in several international standards.



Features:

- 25 mm deep stainless steel tray, to immerse thick specimens
- Allows immersion in light and dark steps
- Integrated water repurification system minimizes purified water consumption and potential specimen contamination
- Precision temperature control, to ± 1 °C
- Meets ISO 16474-2, ETAG 002 (Part 1), JG/T 475, ISO 7491, and ISO 11979-5

How it Works

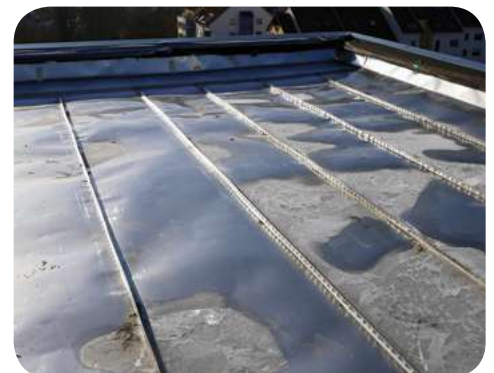
The Xe-1-W features an immersion tray with a mesh insert that is maintained horizontal to allow it to fill with water. Small drain or “weep” holes are present in each corner of the immersion tray. During immersion, fill tubes fill the immersion tray in under three minutes until it overflows above the top of the tray. The water level is maintained at the top of the tray because the fill tubes fill the tray at a faster rate than the weep holes allow it to drain out.

Drain water travels by gravity to the heated reservoir, where a stainless steel immersion heater maintains precision temperature control of the water. The water is then pumped through a demineralization cartridge, where it is filtered and repurified, before leading back to the Xe-1 tester’s fill tubes.

When an immersion step ends, tray filling ceases and all water drains out through the weep holes in under three minutes, allowing the specimens to dry. A mesh insert protects the specimens from standing water in the tray.

Real World Immersion Applications

- Roofing materials that are mounted horizontally and subjected to standing water, such as shingles, coatings, flashing, and gutters.
- Materials that are often installed on horizontal surfaces that see standing water, such as solar thermal and photovoltaic (PV) panels and HVAC equipment.
- Materials constantly subjected to aqueous environments, such as contact lenses and dental materials.



Testing in the Xe-1-W

The Xe-1-W can operate in four different conditions: Light, Dark, Light+Immersion, Dark+Immersion. Temperature is controlled by the black panel thermometer. In an immersion condition, the black panel is submerged and measures and controls the water temperature. The Xe-1-W can be operated without immersion, in which case the black panel thermometer controls tester temperature as in typical xenon weathering test standards.



Specimens immersed in temperature controlled water during light or dark conditions rest on mesh insert.



Testing can also be conducted without water immersion.



Integrated Repurification System

Unlike competing water immersion systems that simply recirculate dirty water or consume large amounts of purified water, Q-Lab's repurification system repurifies water in addition to conserving it. Major components include: a water reservoir, a pump, a flow adjustment valve, a replaceable repurification cartridge and a Total Dissolved Solids (TDS) purity monitor.

Retrofit Kit Available (Non-Heated)

A water immersion system without temperature control can be retrofitted to some existing Q-SUN Xe-1-S testers in the field. Call Q-Lab or your Representative for availability. The kit contains:

- 10 Degree Adapter Wedge
- Nozzle Fill Tubes
- Immersion Tray
- Standalone Water Repurification System



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