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UV TEST CHAMBERS - UV ACCELERATED WEATHERING TESTERS



ISO 4892, ISO 16474, ASTM G154 Compliant Weathering Solutions

UV Test Chambers — also known as UV Accelerated Weathering Testers — are precision laboratory instruments that simulate the damaging effects of sunlight, rain, and dew on materials in a controlled, repeatable, dramatically time-compressed environment. UV light represents only about 5% of natural sunlight but is responsible for the vast majority of polymer degradation — fading, cracking, chalking, loss of gloss, embrittlement, and mechanical property failure. By exposing samples to fluorescent UV lamps combined with controlled temperature, condensation, and water spray cycles, a modern UV test chamber compresses years of outdoor weathering into days or weeks — enabling manufacturers, QC laboratories, and R&D teams to predict real-world durability before products reach the market.

Qualitest offers a comprehensive UV weathering portfolio engineered for every laboratory size, budget, and compliance requirement.

Predict the Future, Protect Your Product

In every industry where products see the sun — automotive trims, architectural coatings, plastic packaging, outdoor textiles, building materials — the difference between a product that delights customers for ten years and one that fades and fails in six months comes down to one thing: rigorous UV weathering testing. Field exposure can take years to deliver answers; UV accelerated weathering test chambers deliver those same answers in weeks. The manufacturers, QC laboratories, and R&D teams who consistently launch durable, regulator-compliant, customer-satisfying products are the ones equipped with UV test chambers built for precision, repeatability, and full international-standards compliance — and the QualiUV™ portfolio gives you exactly that.

Whether you are launching a new outdoor product line, verifying coating durability for an architectural specification, supporting an automotive OEM weathering qualification program, or running fundamental polymer-degradation research, Qualitest has the UV weathering platform engineered to meet your exact needs. From the compact QualiUV™ 100 to the full-

feature QualiUV™ 200 and the precision Irradiance Radiometer & Calibrator, every Qualitest UV testing solution is built to deliver world-class accelerated-weathering performance backed by industry-leading service and support.

APPLICATIONS

Applications in Industries

- **Plastics & Polymers** — UV-stability testing of polyolefins, PVC, ABS, PC, polyurethanes, polyester, and engineering polymers used in automotive, outdoor, packaging, and consumer products.
- **Paints, Coatings & Varnishes** — Color fastness, gloss retention, chalking, and adhesion testing per ISO 16474-1, ISO 16474-3, ISO 11507, and ASTM G154 — critical for architectural, automotive, and industrial coatings.
- **Automotive Industry** — Weathering verification of interior trims, dashboards, exterior trims, seals, gaskets, headlamps, body coatings, and rubber components subject to long-term sun exposure.
- **Construction & Building Materials** — Durability testing of roofing materials, siding, sealants, geomembranes, window profiles, decking, and any outdoor architectural product.
- **Textile & Apparel Industry** — Color fastness, fiber degradation, and durability of outdoor textiles, awnings, tents, sportswear, and technical fabrics.
- **Inks, Printing & Packaging** — UV-fade resistance testing of printing inks, labels, packaging films, signage, and graphic-arts materials.
- **Electronics & Electrical Insulation** — Heat-resistance and weathering tests for electrical insulation, electronic-component housings, photovoltaic encapsulants, and outdoor cables.
- **Universities & Research Institutes** — Materials-science research, polymer-degradation studies, and graduate-level teaching of accelerated-weathering test methodology.

FEATURES

Why Choose Qualitest for Your UV Weathering Needs

With more than two decades of experience supplying advanced testing and analytical instruments to laboratories, manufacturers, and research institutions across more than 60 countries, Qualitest delivers premium UV-weathering performance backed by global expertise in standards-compliant materials testing.

Three-Tier Portfolio — One Trusted Source

From the entry-level benchtop QualiUV™ 100 for basic UV testing through the full-feature QualiUV™ 200 for ISO 16474 / ISO 11507 / ISO 4892 / ASTM G154 compliance, plus the dedicated Irradiance Radiometer & Calibrator for chamber calibration — Qualitest offers a coordinated portfolio that matches every laboratory size, budget, and test-protocol requirement.

US-Made Fluorescent UV Lamps for Consistent Results

The QualiUV™ 200 uses US-manufactured UVA-340 and UVB-313 fluorescent lamps developed from over 40 years of fluorescent-technology expertise. These lamps maintain consistent spectral power distribution for up to 6,000 hours of operation — delivering more reliable test outcomes, fewer lamp replacements, and lower lifecycle operating cost than competing Xenon-arc or low-grade UV alternatives.

Comprehensive Weathering Simulation

The QualiUV™ 200 delivers the most realistic real-world simulation: a 12-nozzle (6 per side) water-spray system mimics sudden rainstorms and heat-shock cycles; the unique condensation system heats chamber-bottom water to superheated steam and maintains 100% relative humidity to simulate dew exposure (the dominant outdoor moisture mechanism); and

the BST black-panel thermometer with Pt 100 sensor delivers automatic high-precision temperature control throughout every cycle.

Full International Standards Compliance

Qualitest UV chambers are engineered to meet the world's leading weathering standards: ISO 16474-1 (general guidance), ISO 16474-3 (fluorescent UV lamps), ISO 11507 (paint exposure to UV + water), ISO 4892-1 (plastics weathering general guidance), and ASTM G154 (UV-fluorescent operation). This ensures every test result is universally accepted, audit-ready, and defensible in regulatory and customer reviews.

User-Editable Programs & Intuitive Interface

The QualiUV™ 200 features an intuitive HD color touchscreen for all controls. Operators can edit up to 10 different test segments per program — combining irradiation, water spray, condensation, and rest phases with custom parameters — and save up to 6 programs for instant recall. This dramatically reduces setup time and ensures reproducibility across test campaigns.

Cost-Effective Value & Global Support

Qualitest delivers premium UV-weathering performance at a transparent, competitive price point — backed by overseas installation, operator training, stocked spare parts, and lamp regrind/replacement support. With offices and authorized partners across the USA, Canada, UAE, KSA, GCC, EU, India, APAC, Africa, and Latin America, expert support is always within reach.

TECHNICAL SPECIFICATIONS

Product Comparison Table

Specification	Irradiance Radiometer & Calibrator	QualiUV™ 100 (Benchtop UV Chamber)	QualiUV™ 200 (UV Light Accelerated Chamber)
Product Type	Calibration radiometer + UV sensor — for all artificial-light weathering chambers	Economical compact benchtop UV accelerated weathering tester	Full-feature floor-standing UV accelerated weathering test chamber
Primary Function	Calibrates UVA & UVB fluorescent lamps separately, ensuring stable irradiance across chambers	Basic UV exposure testing with customizable test conditions	Comprehensive UV + condensation + water-spray accelerated weathering
Lamp Configuration	Reads UVB @ 313 nm (W/m ² /nm) & UVA @ 340 nm (W/m ² /nm)	3 × 20 W UVA or UVB fluorescent lamps	Fluorescent UVA-340 / UVB-313 lamps; US-made; ~6,000-hour stable spectrum
Irradiance Control	Sensor highly sensitive to UV; immune to visible light & most IR	Manual control of illumination time & temperature	Automatic closed-loop irradiance control; programmable setpoints
Temperature Control	N/A (calibration instrument)	Customizable temperature setpoints	Auto temp control with high-precision Pt 100 sensor + BST black-panel thermometer
Water Spray	Not applicable	Optional spray duration adjustment	12-nozzle spray system (6 per side); simulates heat shock & rain
Condensation	Not applicable	Basic moisture simulation	Unique condensation system; heats bottom water to superheated steam; 100% RH
Programs / Memory	Calibrates multiple chambers efficiently	Direct manual setpoints	User-editable programs; up to 10 segments each; saves up to 6 programs

Interface	Direct radiometer readout	Simple control panel; user-friendly operation	Intuitive HD color touchscreen for all controls
Standards	Calibration support for ISO/ASTM weathering chambers	ISO 4892, ASTM G154 family (basic UV testing)	ISO 16474-1/-3, ISO 11507, ISO 4892-1, ASTM G154 (full weathering)
Best Suited For	Multi-chamber labs needing consistent irradiance calibration across UV testers	Small QC labs, R&D, basic UV durability screening, university teaching	Industrial QC, materials science R&D, full weathering protocol compliance



ADVANCED TESTING TECHNOLOGIES

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Contact our **QualiTeam** today to find out how we can help your organization **select the most suitable testing solution** for your application, requirements, and budget.

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