

INNOVATIVE TECHNOLOGIES

UV Weathering Test Chamber

ToronUV-200



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The ToronUV-200 UV Weathering Test Chamber is **engineered to simulate the damaging effects of sunlight, rain, and dew on various materials through alternating ultraviolet (UV) light and humidity cycles.**

This advanced testing system allows users to replicate years of outdoor exposure within a controlled laboratory environment, helping evaluate the weather resistance, color stability, and aging performance of coatings, plastics, and other materials.

The ToronUV-200 complies with major international testing standards, including **ASTM D4587, ASTM G154, ASTM D4329, SAE J2020, ISO 11507, and ISO EN 4892-3**, ensuring accurate and repeatable results for research, product development, and quality assurance applications.



APPLICATION

▶ Accelerated Aging Simulation

The ToronUV-200 reproduces outdoor environmental conditions through alternating cycles of UV radiation and high humidity. These cycles simulate natural weathering effects such as sunlight, rain, and dew, allowing rapid evaluation of material degradation and surface stability.

▶ High-Temperature and Condensation Testing

Each test cycle involves UV exposure at elevated temperatures followed by a dark humidity phase at 100% relative humidity to simulate condensation. This process replicates months or years of natural exposure within days or weeks, ensuring accurate performance prediction.

▶ Material Durability Assessment

Designed to measure the resistance of coatings, plastics, and composites, the ToronUV-200 evaluates fading, cracking, and other aging effects under controlled conditions. It provides consistent, repeatable results ideal for long-term reliability and product comparison studies.

▶ Research and Quality Control Applications

The system is widely used for testing paints, polymers, adhesives, and coated materials in laboratories and production environments. Its precise environmental control supports product development, formulation optimization, and compliance with international weathering standards.

FEATURES/ADVANTAGES

▶ **Accurate UV Light Simulation**

The ToronUV-200 uses UVA or UVB lamps (USA origin) to replicate the short-wave UV spectrum of sunlight with high precision. This stable and consistent irradiance ensures reliable testing of color fading, surface cracking, and long-term material degradation.

▶ **Automatic Irradiation & Temperature Control**

Its closed-loop control system automatically regulates UV intensity and temperature, maintaining consistent energy output and meeting ASTM, ISO, and SAE standards. This ensures repeatable results during extended and unattended testing cycles.

▶ **Realistic Weathering Simulation**

The chamber's spray and condensation functions reproduce natural conditions like rainfall, dew, and humidity. This comprehensive system accurately simulates outdoor aging to evaluate corrosion resistance and coating performance.

▶ **Advanced Data Management & Remote Monitoring**

Featuring real-time data collection, the system automatically records and exports test results in Excel format. A TCP/IP Ethernet interface allows remote access and control, providing convenient monitoring and data traceability.

▶ **Intuitive Interface & Diagnostic Safety**

The touchscreen control panel simplifies operation, while self-diagnostic alarms and multi-color LED indicators provide clear system status alerts. These features enhance operational safety and streamline maintenance.

▶ **Durable Design & Safety Protection**

Built for long-term reliability, the ToronUV-200 includes over-temperature, low-water, and overload protection. With its precision Pt100 temperature sensor and robust construction, it ensures stable performance and compliance with international test standards.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	DETAILS
Lamp Model	UVA: 340 nm or UVB: 313 nm
UV Fluorescent Lamps	8 × 40 W
Irradiance Range	Adjustable from 0.30 W/m ² to 1.55 W/m ²
Irradiance Sensor Band	250 – 400 nm
Sample Placement Angle	75° from horizontal
Sample Exposure Area	5,175 cm ²
Sample Capacity	Up to 48 samples (75 × 150 mm each)
Black Panel Temperature	Light cycle: 45 – 80 °C; Condensation cycle: 40 – 60 °C
Water Supply Flow Rate	Adjustable 0 – 4 L/min
Inlet Pressure	2.8 – 5.5 bar
Water Quality Requirements	pH 6.0 – 8.0; conductivity < 5 µm/cm; solids < 1 ppm
Water Consumption	Condensation: 7 L/day; Spray: 5 L/min
Chamber Dimensions (W×H×D)	1,360 × 1,290 × 560 mm
Weight	161 kg (355 lbs)
Power Supply	220 V ± 10%, 50 Hz, 10 A (max) (110 V also available upon request)


Additional Notes

- **Temperature Range:** Actual temperature depends on irradiance setting and ambient conditions.
- **Sample Holders:** Standard or customized sample racks can accommodate various shapes and thicknesses.
- **Water System:** A booster pump or pure water source is recommended for optimal spray performance.
- **Water Purity:** Deionized, distilled, or reverse osmosis water should be used to meet test standards.
- **Water Consumption:** Values listed represent maximum consumption; actual use may vary with test conditions.
- **Shipping Weight:** May differ depending on packaging and transport method (air, sea, or ground).




TORONTECH

Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

