



TORONTECH



BENCHTOP UV WEATHERING TEST CHAMBER TORONUUV™ - 100

Benchtop UV Weathering Test Chamber ToronUV™-100 features three 20W fluorescent UV lamps with wavelengths of 313nm (or 340nm), providing an ideal light source for simulating the effects of sunlight on materials. During testing, users can adjust key parameters such as total illumination time, chamber temperature, and spray duration to simulate environmental damage, helping assess the weather resistance of materials.

APPLICATIONS

- **Sample Capacity:** The chamber can accommodate up to 18 standard samples (150mm × 70mm in size) at a time.
- **Rotating Sample Holder:** Samples are mounted on a cylindrical holder that rotates evenly during testing to ensure consistent irradiation energy across all samples, improving the comparability and reproducibility of results.
- **Accelerated Aging:** In just days or weeks, the chamber can reproduce the effects of months or even years of outdoor exposure, significantly accelerating the aging process.
- **Global Popularity:** The UV accelerated aging test chamber is one of the most widely used weathering test chambers globally, with thousands in operation.
- **Compact and Cost-Effective:** This desktop model offers an economical solution with a simple design and a small footprint, making it ideal for a range of testing environments.

The ToronUV-100 combines affordability, reliability, and efficiency, making it a preferred choice for weather resistance testing.

Applicable industries:

The UV Weathering Test Chamber is widely used across various industries to evaluate the weather resistance of materials, particularly through fluorescent ultraviolet aging. It is commonly applied in the following sectors:

1. **Paint Industry:** For testing various coatings, including:

1. Hull paint
 2. Marine waterline paint
 3. Deck paint
 4. Solvent-based polyurethane wood paint for interior decoration
 5. Water-based wood paint for interior decoration
 6. UV-curing wood paint
 7. Pre-coated coil coatings for home appliances
 8. Indoor water-based wood coatings
 9. Coil coatings
 10. Architectural water-based fluorine coatings
2. **Other Industries:**
1. **Automotive Industry:** For evaluating paint and coatings.
 2. **Plastic Products:** To assess UV degradation and durability.
 3. **Wood Products:** Testing finishes and coatings for weather resistance.
 4. **Glue:** To determine the effects of UV exposure on adhesive performance.

FEATURES

- **User-Friendly Design:** Engineered for convenient sample loading with a simple, intuitive interface for seamless operation and programming.
- **High-Quality Components:** Incorporates functional parts to ensure reliability and performance.
- **Cost Efficiency:** Offers a highly economical solution for both purchase and operation.
- **Comprehensive Support:** Backed by a professional after-sales team experienced in installation, maintenance, training, and consulting.
- **Enhanced Safety:** Features a built-in water level switch that triggers an alarm and stops the machine when the water level is low.

- **Durable Construction:** Stainless steel interlayer liner prevents rust and leaks while safeguarding electronic components from water vapor.
- **High-Performance UV Lamps:** Equipped with professional-grade lamps delivering irradiation energy up to 0.7 W/m² for effective testing.
- **Advanced Control System:** Touchscreen interface allows easy parameter setup and real-time monitoring of test conditions.

These features combine to deliver a reliable, efficient, and user-oriented testing solution.

Performance features

- **Cost-Effective Lamps:** Domestic UVA or UVB lamps are priced at less than 1/5 of the cost.
- **Spray and Temperature Function:** The chamber includes spray and temperature control functions.
- **Test Standards Compliance:** The chamber complies with various domestic and international test standards, with the ability to set different test procedures as needed.
- **Real-Time Data Acquisition:** Test data is automatically generated in Excel format, recorded, and saved. It can be exported via a USB drive, enabling truly unattended operation.
- **Remote Monitoring:** The chamber features a standard TCP/IP Ethernet interface, allowing users to remotely monitor the machine's status through a network.
- **Touch Screen Operation:** The touch screen provides an easy-to-use, user-friendly interface, allowing users to view any parameter during the test at any time.
- **Precision Temperature Control:** The chamber is equipped with a high-precision Pt 100 temperature sensor and automatic temperature control for accurate results.

A UV weathering test chamber reproduces the damage that sunlight, rain, and dew cause to materials, but on a compressed timescale. Days in the chamber can represent months or years of outdoor exposure, which lets manufacturers predict how a product will age before it ships.

Simulating Sunlight and Moisture

Fluorescent UV lamps produce the short-wavelength ultraviolet light that is most responsible for breaking down polymers, coatings, and pigments. The chamber exposes samples to this UV light during a programmed light cycle, then switches to a condensation or water-spray cycle that wets the surface to imitate dew and rain.

Accelerated, Repeatable Aging

By cycling between UV light and moisture at controlled temperatures, the chamber drives the same fading, cracking, chalking, and loss of gloss that occur outdoors. Following methods such as ASTM G154 and ISO 4892-3 keeps the exposure consistent, so results can be compared between samples and over time.

TECHNICAL SPECIFICATIONS

No.	Function	Parameter
1	Lamp model	UVA: 340nm or UVB: 313nm (Normal Use 1500H)
2	UV fluorescent lamps	Quantity 3
3	Lamp irradiation energy	0.7W/m ²
4	Sample placement	Horizontal arrangement on six sides
5	Sample capacity	18 pieces, (70×150mm)
6	The closest distance from the tube wall to the sample	50 mm

No.	Function	Parameter
7	Sample rotation speed	3.7 c.p.m.
8	Temperature setting range	RT+5□ 65°C
9	Inlet pressure	2.8-5.5 bar
10	Influent water purity	The PH of water is between 6.0 and 8.0, the conductivity is less than 5µm/cm, and the solids content is less than 1ppm
11	Water consumption	Condensation: 7L/day; Spray: 4L/min
12	Dimensions (W×H×D)	940×630×500mm
13	Weight	70kg
14	Voltage	220V, 50Hz, maximum current 6A (110V is also available)

- **Standard and Customized Sample Racks:** The chamber includes standard sample racks, with the option to customize racks to accommodate samples of various sizes and shapes.
- **External Booster Pump:** An optional external booster pump is available to enhance water flow.
- **Water Purity Requirements:** Water purity can be ensured through reverse osmosis, deionization, or distillation systems.
- **Water Consumption:** Water consumption varies depending on test and laboratory conditions. The stated value is typically the maximum value. To reduce water consumption, it is recommended to use a pure water repurification system.
- **Shipping Weight:** The actual shipping weight may vary, depending on whether the product is shipped domestically, by sea, or by air.



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